The Resource Factors Influencing the Project Completion in Rwanda: A Case of Nyabarongo I Hydro Power Plant Project in Muhanga District

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Abstract: *The resources management (RM) is the approach of utilize the resources of project well, in order to maximize the project success; when we focus on resources of project like time resources, financial resources, human resources, we can say this project has success because the project are meet it requirements and objectives, the amount of time required to produce the deliverable will be directly related to the amount of requirements that are part of the end result. In this study, the aim of the research will be to assess the Impact of resources management on the project success in Rwanda. Descriptive research design will be used in carrying out the study. The target population will be comprise 116 people involves in the project Nyabarongo I hydro power plant project in Muhanga District of Rwanda, The sample size for the study will be 88 People involve in the project. Slovin's formula will be employed in determining the sample size. Simple random sampling technique will be used to select people who will constitute the study sample. The study will use questionnaires as instruments for data collection. The data collected will analyze quantitatively using descriptive statistics. Regression analysis will be performed to establish the relationship between the study variables as well as the strength of the relationship. Findings of the study will be presented using frequency distribution tables and bar graphic, Technically, the contractor was working without a contract because the first one expired on April was not extending, the penalty conditions contractor, the contractor was not well organised and that there have exhibited signs of poor coordination which believes that is the main reason behind the delay. Project had an initial cost of $97.7 million. The changes in designs expanded the initial budget by an extra cost of $11.1 million. The feasibility study report was inaccurate because it had been conducted almost a decade ago.The study findings the findings revealed that, were made to test the correlation between indicators of independent variable to dependent variable. Linear regression analysis considers the linear relationship between one dependent variable to one more independent variables. The analysis finds values on the following equation:*

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon$$

Where y represent dependent variable "project quality" and x values represent variables of independent variable, such as resource information (X1), financial resource (X2), Human resource (X3) and project plan (X4). With values from the analysis the function become like: $y = 32.022 - 1.256x_1 + 2.281x_2 + 3.172x_3 - 5.441x_4 + \varepsilon$

Which means that, NYHPP project was delayed by the information availability and poor planning? In the other one unit change of resource information (X1), financial resource (X2), Human resource (X3) and project plan (X4) lead to -1.256; 2.281, 3.172 and -5.441 change times of project quality. Otherwise, if all independent variable are null, the quality project is equal to 32.022 units.

Keywords: Resources Management, Project Completion, Information resource, Financial Resources Management, Human Resources Management

1. Definition of Key Terms

Resources Management: The resources of any project consist of people, materials, equipment, knowledge and time. Project typically have limited resources; therefore, trade-offs on what project resources are expended and when are made every day within organizations. A resource allocation plan is an important tool in effective management of scarce resources. The timing of the need of those resources can be and should be determined within the project schedules. A resource plan, which describes the type of resource needed and the timing of that need, is critical to effective resource management. As the project schedule changes, the resource plan must also be flexible enough to adjust as these changes occur (Budhwar, 2004).

Project Completion: The stage at which all necessary title transfer requirements and construction work have been performed; the project complies with all home requirements; the final draw-down has been disbursed for the project; and the project completion information has been entered in the Integrated Disbursement and Information System (Sparrow, 2004)

Information resource: Information Resource Management Information Resource Management (IRM): Is To manage and control all of the resources required to produce information. The way IRM works is similar to Materials Resource Planning MRP) in manufacturing. Both concerns with cost effective and efficient use of resources. Information Resource Management Benefits of IRM: All information resources are controllable, permitting the ability to design integrated systems and perform impact of a proposed resource change (Rowley, 2004).

Financial Resources Management: is the total amount of authorized financial resources allocated for the particular purpose(s) of the sponsored project for a specific period of time. It is the primary financial document that constitutes the necessary funds for implementing the project and producing the deliverables. The project budget gives a detailed statement of all the direct and overhead costs

required to carry out the project goals and objectives (Fajana, 2009).

Human Resources Management: A resource management plan is a tool project managers use to manage their resources. Typically, a resource management plan is used to manage the most important resource in every project: the human resource. The Project Management Body of Knowledge, or PMBOK, a set of standards and guidelines in project management, defines project human resource management as a processes needed to effectively organize, manage, and lead project team (Price, 2000).

2. Introduction

2.1 Background of the study

Resource Management is a facet of project management that deals with the human, financial, distribution, Time and demands of project resources. Careful management of resources leads to the path of project success. However, mismanagement of resources can lead to project Failure, overtime, budget overages, and other unfortunate events. The key elements of resource management. Cost and schedule performance are the primary measures of a project's success. A project is said to be successful, if it is completed within the planned cost and time Managing projects is one of the oldest and most respected accomplishment of mankind highlighted by the achievement of the builders of pyramids, project make up around fifty percent of all work carried out and as a result is deemed the vehicle for the execution of organizational growth.The accomplishment of project through the application and integration of the project management process of initiation, planning, executing, monitoring, controlling and closing, is known as project management (Peter, 2005)

There are three different types of resources that you need to manage: People, equipment and material. Some people get confused about how to effectively manage equipment or material, and how that falls into project management. Not only will you need the right people on the right jobs, but you need to make sure that they have the required equipment and material to get the job done. Below are just a few tips about managing the three different types of resources. Several things go into managing people effectively. As a project manager, you need to make sure that you have the people with the skill set required for the task. Not only will the right people need to be in the right place at the right time, but you must also equip them with the tools and knowledge they need. It is your job to make sure that they are fully aware of what is expected from them, and how long they have to do it. You must also consider the cost of resources (Gandlach, 2013).

Will utilizing one paralegal cause you to incur excessive overtime pay versus choosing someone else? Those are the kinds of hidden costs that can blow up a project budget. Managing people in projects is a style of matrix management. You, the project manager, don't necessarily manage each person directly. It is your job to manage the group leader, or senior member, over each group of

employees. And from there, the hierarchy begins and orders are passed down. Employees are not the only people resources that need management. Vendor staff and subcontractors are also in this group of project management. If you use outside vendors for equipment and/or materials, they will need to know what you need and the date it is due. This is the same as subcontractors. You have a project to get completed; this means that you need to move all the pieces around in order to get them in the right spot to get the job done (Kerzner, 2009).

People need equipment to complete a task. As project manager, you will have to make decisions on what equipment is needed, who will use it, and for what length of time. You need to make sure that the equipment is available and is in working order. Rental fees for equipment can actually be calculated into the project. For some reason, when project managers are making a contingency plan for the project, they do not make one for resources. It is so rare for a resource contingency plan to be in place, when you are managing a project, it is very important to understand that backup planning is needed. It puzzles me that PMs would make contingency for money or time, but not for people and equipment. The resources are expected to do what is needed of them when it is needed, even if time and budget has requires them to work overtime at the end to get the project completed(Jean, 2013).

Every project needs to end and that's what project completion is all about in the last phase of the project life cycle. The whole point of the project is to deliver what you promised. By delivering everything make sure that all stakeholders are satisfied and all acceptance criteria have been met. Once that happens, your project can end. The key activities in project completion are gathering project records; disseminating information to formalize acceptance of the project; and performing project closure. As the project manager, you will need to review project documents to make certain up-to-date, once the project outcomes are documented, you'll request formal acceptance from the stakeholders or customer. They're interested in knowing if the project meets the objectives, the project set out to accomplish (Nemand, 2014).

Use of hydropower peaked in the mid-20th century, but the idea of using water for power generation goes back thousands of years. A hydropower plant is basically an oversized water wheel. More than 2, 000 years ago, the Greeks are said to have used a water wheel for grinding wheat into flour. These ancient water wheels are like the turbines of today, s pinning as a stream of water hits the blades. Hydropower plants harness water's energy and use simple mechanics to convert that energy into electricity. Hydropower plants are actually based on rather simple concept water flowing through a dam turns a turbine, which turns a generator. Here are the basic components of a conventional hydropower plant.Dam; most hydropower plants rely on a dam that holds back water, creating a large reservoir. Often, this reservoir is used as a recreational lake, such as Lake. Intake - Gates on the dam open and gravity pulls the water through the penstock, a pipeline that leads to the turbine. Water builds up pressure as it flows through this pipe Turbine - The water strikes and turns the large

blades of a turbine, which is attached to a generator above it by way of a shaft. Generators - As the turbine blades turn, so do a series of magnets inside the generator Transmission lines. Conduct electricity from the hydropower plant to homes and business (Kevin2014).

The project is hydro power plant project located in Mushishiro sector-Muhanga District and is expected to produce 28 MW, and when connected to the National Grid, the plant will serve the big part of the Country with electricity and many households and other neighbouring sectors will benefit from the project. The First machine will produce 14MW and the second machine is expected to produce other 14MW by August. This will change the standards of living of people of Rwanda by providing electricity to neighbouring trading centers of Kibirira, Kivumu, Bulinga and Mushishiro in the Southern Province, hence social and economic growth of the Nation, After connecting the 28MW to the national grid, a lot of difference will be created through reduction of the excessive power cut offs, enhanced business environment by minimum load shedding, promoting rural and urban electrification hence reduction of power tariffs leading to sustainable development(Mininfra, 2014).

2.2 Statement of the problem

In order to manage projects effectively and increase the chances for a project completion, it is important to employ effective resources management for completing the project. The project resources management positively influences project completion by instrumental effects through creation of a contingency plan or by influencing project time, budget or design plan. However, Managing big projects in developing countries such as Rwanda continue to experience failure due to ineffective management, cost controls, inappropriate building regulations and codes as well as a lack of basic project planning and provisions (Peter, 2005).

According to Rwanda Energy Sector Review and Action Plan (2013), the Government of Rwanda demonstrates commitment to partnering with investors in delivering this potential; by offering generous incentives and guarantees to its investors including those in the energy sector. This can be envisaged clearly on Nyabarongo I hydro power plant project whose contract commencement date was on May 2009 with an expected completion date of February 2013. But the project incurred two deadline extensions that is April 2014, then finally October 2014 which counts to about 20 months extra time to the initial set deadline (Mininfra, 2014).

Technically, the contractor was working without a contract because the first one expired on April was not extending, the penalty conditions contractor, is not well organised and that there have exhibited signs of poor coordination which believes that is the main reason behind the delay. Project had an initial cost of $97.7 million. The changes in designs expanded the initial budget by an extra cost of $11.1 million. The feasibility study report was inaccurate because it had been conducted almost a decade ago. This called for a new mini-study to up-date the old one and it recommended

several changes in the design of the dam which needed more time and a larger budget. This has however not been achieved as expected, to date due to failures to meet planned schedules, planned budget (Jean, 2013).

The study will therefore try to establish the Resource factors influencing on project Nyabarongo I hydro power plant at Muhanga District, the project has delayed to complete on planned time, and all this affected the plan of Muhanga District and the beneficiaries of the project. The main problem of this project research is to know what caused this delay on nyabarongo I hydro power plant; the project must depend on Information resource, financial resource, humans' resource as a key of planning.

2.3 Objectives of the study

2.3.1 General objectives

The aim of the research will be to assess the resource factors influencing the project completion in Rwanda.

2.3.2 Specific objectives

To determine the impact of information factors on the project completion in Nyabarongo I hydro power plant

To establish the impact of financial factors on the project completion in Nyabarongo I hydro power plant project

To identify the role of human resource factors on the project completion in Nyabarongo I hydro power plant project

2.4 Research questions

What is the impact of determine the information factors on the project completion in Nyabarongo I hydro power plant project

How does financial factors affect the project completion in Nyabarongo I hydro power plant project

To what extent does human resources factors affect is the impact of the project completion in Nyabarongo I hydro power plant project.

1.5 Significance of the study

The findings of this study will mainly, help the project practitioners to clearly understand the correlation and dependency between Resource factors and the project completion in Rwanda. The study will also help the government of Rwanda to focus on the resource factors to bring the success in project, not plan for the project only but for the resources management also. The study will also help academicians as a source of literature for further research about the resource factors influencing the project completion in Rwanda.

2.6 Scope of the study

The study will be carried out in southern province Muhanga District, NyabarongoI hydro power plant project. Its main

aim will be to establish the resource factors influencing the project completion in Rwanda. Independent variables is resource factors which are the variables of information resource, financial resource, human resource while the dependent variable is the project completion which have the variable of quality(scope)cost(resources)schedule(time). The Nyabarongo I hydro power plant project located in southern province at Muhanga District in Mushishiro sector the research will carried out at Muhanga District. The research will be carried out is between the August and September.

2.7 Limitation of the study

The study assessed the Resource factors influencing the project completion. The study collected data from only one project; Nyabarongo Ihydro power plant project at Muhanga District as such the study sample size and the respondents opinions could not have been a true representation of all the projects in Rwanda. This implies that the findings of the study could only be generalized to the NYHPP project only and not all existing projects in Rwanda.

3. Literature Review

3.1Introductions

This chapter covers theoretical reviews, literature review on resources management and its impact on the project success. It gives insight on resources management, project success, and the impact of resources management on the project success.

3.2 Theoretical review

Sekaran (2001) defines a theoretical framework as a conceptual model of how a researcher makes logical sense of the relationship among several factors that have been identified as important to the problem. The theory selected for this study is a theory of triple constraint, Resource Based Theory, motivation theory, which is related to resources management. The triple constraint of project management is rooted in the theory of constraints (TOC), the resource based theory is based on resources of project, and motivation theory is based on motivating people to their work.The main theory of this study is triple constraint.

3.2.1 Triple constraint theory

The Triple Constraint is one of the most well-known and well respected mechanisms for signifying the interaction of the key attributes of a project. By being fully aware of its function and implications is an important aspect of the project manager's role and responsibility. The triple constraint is meant to be asset to the project manager's arsenal and should not be viewed as a hinderance. The Triple Constraint basically demonstrates in pictorial fashion, the key attributes that must be handled effectively for successful completion and closure of any project. For thoroughness, the key attributes of the Triple Constraint are itemized as follows: Time, This refers to the actual time required to produce a deliverable. Which in this case,

naturally, the amount of time required to produce the deliverable will be directly related to the amount of requirements that are part of the end result, scope along with the amount of resources allocated to the project.Cost, This is the estimation of the amount of money that will be required to complete the project. Cost itself encompasses various things, such as: resources, labour rates for contractors, risk estimates, bills of materials, et cetera. Scope, these are the functional elements that, when completed, make up the end deliverable for the project. The scope itself is generally identified up front so as to give the project the best chance of success (Assaf, 2006).

The triple constraint of time, cost, and scope describe the project. Changing one constraint will affect one or both of the other constraints. Quality is affected by all three constraints and is, therefore, a central theme. Quality is also defined by the project scope and is an output of the scope definition. Program managers use the triple constraint to investigate the progress and issues related to their projects. Experience has shown that program managers will use one constraint as a gauge for the condition of the other two constraints. Successful project managers will use scheduling software like Primavera P6 to manage the project (Kerzner, 2009).

The time constraint refers to the amount of time available to complete a project. The cost constraint refers to the budgeted amount available for the project. The scope constraint refers to what must be done to produce the project's end result. These three constraints are often competing constraints: increased scope typically means increased time and increased cost, a tight time constraint could mean increased costs and reduced scope, and a tight budget could mean increased time and reduced scope. Another approach to project management is to consider the three constraints as finance, time and human resources. If you need to finish a job in a shorter time, you can throw more people at the problem, which in turn will raise the cost of the project, unless by doing this task quicker we will reduce costs elsewhere in the project by an equal amount. According to the Project Management Body of Knowledge the Project Time Management processes include: Plan Schedule Management. Define Activities, Sequence Activities, Estimate Activity Resources; Estimate Activity Durations Develop Schedule Control Schedule (Crawford, 2002).

3.2.2Resource based-view theory
The resource-based view (RBV) theory argues that firms possess resources, a subset of which enables them to achieve competitive advantage, and a subset of those that lead to superior long term performance. Resources that are valuable and rare can lead to the creation of competitive advantage. That advantage can be sustained over longer time periods to the extent that the firm is able to protect against resource imitation, transfer, or substitution. In the resource-based theory model, resources are given the major role of assisting project in achieving higher project performance and competitive advantage. The theory has been redeveloped and redefined through research with evidence that supports it. Resource-based theory prescribes that organizations position themselves strategically based

on their resources and capabilities rather than their products and services. Within resource-based theory, the key terms include tangible resources, intangible resources, and capabilities (Barney, 2013).

3.2.3 Motivation Theory

Motivating people is a large part of the project manager's job. Motivation can be difficult because not everyone is motivated by the same type of reward. Theory X and Theory Yas proposed by Douglas McGregor, Theory X and Theory Y describe two different types of workers and how they should be managed. Theory X states that management believes that workers will do as little as possible to get by and thus need a great deal of direction. Theory Y states that management believes that workers are interested in doing their best and, given the freedom, will perform well (Grandlach, 2016).

3.4 Conceptual Framework

The project of the study will be to basically see how the resources management affects the project success of hydro power plant it partners with. The dependent variable will be the project success whereas the independent variables will be resources management. Time resources of hydro power project, financial resources of hydro power plant project, and human resources of hydro power plant project as illustrated
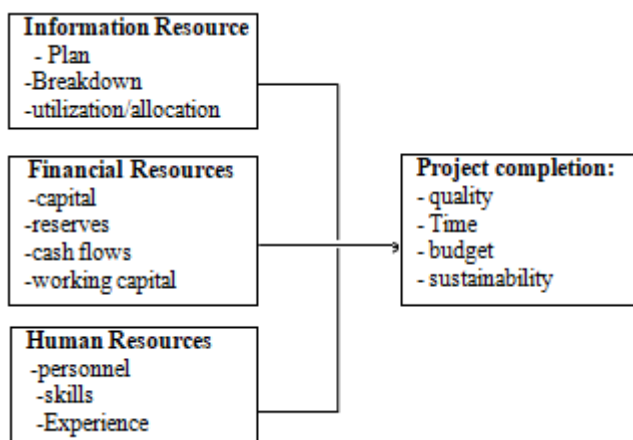
Independent variables Dependent variables

Figure 1.2: Conceptual Framework

3.4.1 Information Resource factors on project completion

The flow of information starts with the owner, project manager, estimators, and contractors as they design the project. The generated information or data can be utilized by all participants of the project to facilitate their communication. The project's participants are increasing their technology and information with the latest software that meets their needs. Unfortunately, their information from their software is often difficult or seemingly impossible to integrate into other participant's software (Amos, 2016).

Setting up the project to collect the necessary information that answers your crucial questions is imperative. And while you may have the data, understanding it and putting it into a format that answers your questions may present another challenge for a project management team. Help with information resource of project, Assist in identifying what information will be needed to successfully manage your project. Assist in getting that information and data organized. Capture available data and transfer it into your system. Set up information sharing internet site and train or support its use, Summary and detail level reporting, Create easy-to-run reports that show your progress, productivity, and cost analysis. Periodic updates and resulting   trends. Analysis of those trends. Key software packages that we support and utilize to manage our data: Primavera P6 CPM Scheduling Software, Primavera Risk Analysis, Microsoft's MS Project, Meridian's Prolog Manager, Seagate's Crystal Reports, Microsoft Office including Access Successful information management is about organisational and cultural change, and this can only be achieved through strong leadership. The starting point is to create a clear vision of the desired outcomes of the information management strategy (Dun, 2005).

Project management software such as Microsoft Project will often have features designed on project managers estimate resource needs and constraints and find the best combination of assignments for the project. The project schedule should be approved and signed off by stakeholders and functional managers. This ensures they have read the schedule, understand the dates and resource commitments, and will cooperate. Once the schedule is approved, it will become your baseline for the remainder of the project. Project progress and task completion will be monitored and tracked against the project schedule to determine if the project is on course as planned. The schedule can be displayed in a variety of ways, Knowing where your critical path is can give you a lot of freedom. If you know an activity is not on the critical path, then you know a delay in that activity may not necessarily delay the project. This can really help you handle emergency situations. Even better, it means that if you need to bring your project in earlier than was originally planned, you know that adding resources to the critical path will be much more effective than adding them elsewhere. One resource management technique is resource levelling. It aims at smoothing the stock of resources on hand, reducing both excess inventories and shortages. (Azolukwam, 2009).

These leadership approaches. The leadership approach incorporates the dominant leadership style and Fiedler's contingency focus on adapting to the project environment. No particular leadership approach is specifically appropriate for managing a project. Due to the unique circumstances inherent in each project, the leadership approach and the management skills required to be successful vary depending on the complexity profile of the project. However, the Project management leadership traits and conclude that good communication skills and the ability to build harmonious relationships and motivate others are essential (Sparrow, 2014)

Beyond this broad set of leadership skills, the successful leadership approach will depend on the profile of the project. For example, a transactional project manager with a strong command-and-control leadership approach may be very successful on a small software development project or a construction project, where tasks are clear, roles are well understood, and the project environment is cohesive. This same project manager is less likely to be successful on a larger, more complex project with a diverse project team and complicated work processes (Fajana, 2009).

3.4.2 Financial Resources and Project success

In a world of limited funds, as a project manage you're constantly deciding how to get the most return for your investment. The more accurate your estimate of project cost is, the better able you will be to manage your project's budget. Although you may not develop and monitor detailed budgets for all your projects, knowing how to work with project costs can make you a better project manager and increase your chances of project success. A project budget is a detailed, time-phased estimate of all resource costs for your project. You typically develop a budget in stages: from an initial rough, estimate to a detailed, estimate to a completed, approved project budget. On occasion, you may even revise your approved budget while your project is in progress (Brian, 2012).

Determining the cost of a project is one of the most important initial steps for a project manager. If a project manager cannot stay within a controlled budget, they may not have the funds to complete the project. The budget and financial plan is typically created during the initial stage of project development. Costs and resources should be set during the initiation stage to adequately plan and allocate costs. Some tools that project managers can use to control finances and budget include payback period and other financial forecasting calculations, and budgeting techniques, including variance analysis. These tools are critically important for project managers who need to control resources to ensure project completion (Nemanand, 2014).

If resources are mismanaged, the project will be characterized by defeated costs Budgeting involves determining how much money will be needed to complete a project and the timeframe for spending it. The budget may be determined on an annual or monthly basis depending on how long the project is projected to run. An important part of budgeting is setting a plan that can be followed over the course of the project. Once all project requirements have been documented, the next step is to determine the costs of each requirement which will result in the creation of the project budget. A cost estimate, which is the process to approximate the costs that the project will spend to get or use the project resources Budget estimates are obtained from the people responsible for managing the work efforts. They provide the required expertise to make the estimate and provide buy-in and accountability during the actual performance of the activities (Cornell, 2011).

A financial plan or budget entails a realistic estimation of the financial inputs, including sources of income and the planning of expenditure over time. Each project task will have a cost, whether it is the cost of the staff labour hours, travel costs or the cost of purchasing equipment. In preparing the project budget, each of these costs must be estimated and then total. Some of the estimates will be more accurate than others. For instance, salaries of staff of a given category are usually known, so staff costs can be estimated fairly precisely if the number of working days is known. Other estimates, like travel and subsistence, may be less accurate as the destination is not always known from the onset and prices may change over time. For that reason, organisations often include a contingency amount in the project budget to cover underestimated costs (Williams, 2008)

3.4.3. Human Resource and Project success

The most important resource to a project is its people the project team. Projects require specific expertise at specific moments in the schedule, depending on the milestones being delivered, or the given phase of the project. An organization can host several strategic projects concurrently over the course of a budget year, which means that its employees can be working on more than one project at a time. Alternatively, an employee may be seconded away from his/her role within an organization to become part of a project team because s/he has a particular expertise. Moreover, projects often require talent and resources that can only be acquired via contract work and third party vendors. Procuring and coordinating these human resources, in tandem with managing the time aspect of the project, is critical to overall its overall success (Martin, 2015)

The people are an important part of a project's success. The projects are resource constrained. The management of the human resources on a project has a major impact on the project's success or failure. Of course, this article has taken a general view, human resource processes are strongly influenced by the human resource policies and procedures of the delivery organization. Much has been written about dealing with people in the operations of an ongoing enterprise; leading, communicating, delegating, motivating, team building, recruiting, appraising. Much of that knowledge is directly applicable to leading and managing people in a project environment and the project manager should be familiar with it (Rowley, 2004).

The Human resource management includes the processes required to coordinate the human resources on a project. Such processes include those needed to plan, obtain, orient, assign, and release staff over the life of the project. Functions development of Human resource plan acquiring staff measuring the Performance of staff Release of staff at the end. The human resource plan supports staff planning, staff acquisition, allocating resources to staff, and supervising project specific training activities (Martins, 2015).

A Human resource plan is created for the entire project and managed by the project manager. The formality with which the Human resource plan is created and documented is a reflection of the size and complexity of the project. Typically, small projects do not require a formal plan. On

the other hand, large, multiyear, multilevel projects with many participants may require multiple formal plans. The HRM plan is based on the project schedule. The Project management schedule includes a summary of the effort by human resource category that will be required to perform defined work units, as well as the time frames during which the work units will be performed (Storey, 2001).

HR management helps you determine employee availability and analyze workload. By getting access to job schedules, tasks and work sheets it becomes easier for you to make right assignments. There should be a system to keep and update all records on team members and their availability, competence and current workload. Even if your team members are dispersed across multiple locations, such a system will help you keep track of the latest changes in resource schedules, action plans and HR structures (Sparrow, 2004).

So when allocating human resources, you need to consider how much each team member is loaded with current work and whether this person demonstrates higher performance. For example, if an employee is 100% allocated, you shouldn't involve this individual in a new project, despite he or she is a top performer. If another team member is 80% allocated, you know there are 20% that can be assigned to a new project. So when you get accurate data on employee workload and performance, you can avoid troubles associated with under-allocated project HR and the burnout of overloaded employees (Fajana, 2009)

3.5 Empirical Review

Kumar (2012) study in Bang Kongwas on the impact analysis of allocation of resources by project manager on success of project carried out on the various resources. It is worth to note that success of the project depends on quality of the product. Quality however is achieved through parameters such as cost, time, number of developers in the development team, their effort, this part of the research focuses upon role of project manager and effectiveness of his resource allocation in the project. Hence, parameters such as cost, time, number of developers and defect count which are some of the highly quality influencing parameters are considered for the purpose of this investigation. In order to study the impact of the considered parameters towards the success of the project, this work involves incremental technique of impact analysis of each of them. Accordingly, cost parameter is compared with time upon the success level of the project. Subsequently, these two parameters are in turn analyzed with number of developers and henceforth the success of the project. Further progressing in this incremental mode, impact of number of developers is analyzed with defect count.

The study depicts the impact of variation of number of developers with cost in the projects. It is inferred that there is hardly any noticeable impact of number of developers on the cost. This has been proven from the study where defect count has increased and has not decreased by the addition of number of developers. Our forth coming work put forth the analysis of efficiency of developers towards achieving decreased defect count as defect management is one of the

influencing parameter for project success. The study depicts the impact of variation of defects and Time in the project, it is shown that increase in number of defect count in the project proportionally total time required to complete the project. The analysis of efficiency of developers towards achieving decreased defect count as defect management is one of the influencing parameter for project success (Kumar, 2012).

Umulisa (2015) study in Kigali-Rwanda was on Effects of Project Resource Planning Practices on Project Performance of Agaseke Project. The study sought to establish that Human Resource Planning Practices influences Agaseke project performance. 74% of the respondents stated that Agaseke project members are provided with training on handcraft making. Majority of the respondents 80% felt that training influenced the project performance, Majority of the respondents 83% stated that there was tracking of performance resulting from resource allocation in the project. While 87% of the studied project members felt that the project forecasted the revenue and all expenses within the project, Material resource planning was considered by 88% of the respondents to have influence on the project performance. Majority 89% of the respondents felt that procurement was well planned and was done within the project budget. Order placement was seen by 85% of the respondents to influence the project performance.

There was no evidence therefore that forecasting has a potential to increase project performance. This indicates sufficient evidence that the three variables has potential to increase project performance if well addressed within the project, Material and Time resource planning practices were found to influence project performance. Order placement, monitoring of placed orders and planned procurement practices were found to exist within the project. Correlation between material resource planning practices namely; Order placement, monitoring of placed orders, planned procurement and project performance gave evidence that this practices had influence on the project performance. Procurement of required materials was found to be done within the project budget. Project members were provided with the right quantity of material in the right time

3.6 Critique to existing literature

Kumar (2012).study of Bang Kong on the impact analysis of allocation resources by project manager on success of project. This part of the research focuses upon role of project manager and effectiveness of his resource allocation in the project but the study did not identify other resources that would cause the project success or failure, such as information resource, plan, and breakdown structure. Kumar used the time resource as an independent variable, however, time is a constant factor and it should be considered as dependent variable in project management and completion. Project depend on time not time depend on project.

Umulisa (2015)study of Kigali Rwanda on the effect of project resource planning practices on project performance of agaseke project, the effectiveness of Project Resource planning can be measured in terms of the extent to which it

influences project performance, the variables of this study are, Human resource planning practices, financial resource planning practices, Material and time resource planning practices, in this study, no technique was mentioned to measure the performance of the project, they focused on the questionnaire only and the questionnaire cannot measure the performance of the project in terms of monitoring but if they had used the technique to measure the performance as well as progress of the project, this technique would make the project more profitable. This technique is called EVM (Earned Value Management Technique). It integrates project scope, cost and schedule measures to help the PM to assess and measure project performance and progress. The goal of this technique is to measure the performance as well as progress of the project against signed baselines The EVM (Earned Value Management) concept, as defined by PMI standard PMBOK. It integrates project scope, cost and schedule measures to help the PM to assess and measure project performance and progress.

Schedule Variance (**SV**) = is the measure of schedule performance of the project. It is the difference of Earned value and the planned value

Cost Variance (CV) = is the measure of cost performance on the project. It is equal to earned value (EV) minus actual costs (AC). Any negative CV is often non-recoverable to the project, Positive result means that you are under budget; Negative result means that you are over budget

3.7 Summary

This chapter discusses the various impact of resources management on the project success in Rwanda. The project success in Rwanda in line with their theoretical aspects is discussed. Followed by a review of the variables in the study namely, Time resources, financial resources Human Resources and project success. The research literature findings depict that effective project management and decomposition of project resources management, the key elements of resource management. Cost and schedule and humans performance are the primary measures of a project's success. The review of the literature revealed a wide range of how to utilise the management of resources in project and project management procedures in order to make a project success. Resources management in projects is a widely researched area.

3.8 Research gap

According to Kumar (2012) study of Bang Kong on the impact analysis of allocation of resources by the project managers on the success of the project carried out on various resources, he estimated the cost of project according to time and cost only but not scope to ensure the quality of the project. However, it is well known that project success depends on cost and effective time taken. In addition, scope is one of the parameters that can help to estimate the resources of a project. Projects must be delivered within cost, time and scope. Kumar did not mention the scope of project. Projects must also meet customer quality requirements. Therefore, he did not give a clear relationship of the parties in an agreed boundary. If the parameters are

well balanced, project managers are capable to smoothly start, initiate, execute, operate, finish and commission the projects. Projects with poorly defined scope or where the client is changing the scope, time and cost schedule will be disrupted.

According to Umulisa (2015) study of Kigali Rwanda on the effect of project resource planning practices on project performance of Agaseke project, the effectiveness of Project Resource planning can be measured in terms of the extent to which it influences project performance, the variables of this study are, Human resource planning practices, financial resource planning practices, Material and time resource planning practices. Umulisa did not mention how she would measure the performance of the Agaseke project in terms of monitoring and evaluation, this study is lacking the monitoring in order to ensure the performance of the project, she would have used the EVM technique to ensure the performance of this project and at the same time the monitoring would be simple.

4. Research Methodology

4.1 Introduction

This chapter outlines the research methodology that will be used to collect data that will generate information on: the impact of resources management on the project success in Rwanda my survey is Nyabarongo I Hydro Power Plant Project, The subsections includes research design, target population, sampling procedures and sample size, research instrumentation and their validity and reliability, methods of data collection and data analysis.

4.2 Research design

The study will adopt a descriptive research design strategy. Descriptive survey research design is most appropriate when the purpose of study is to create a detailed description of an issue (Mugenda & Mugenda, 2003).surveys also allows collection of quantitative data which can be analyzed quantitatively using descriptive and inferential statistics(Saunders et., 2007). Moreover it allows for comparison which this study intends to do, A survey will be appropriate for this study as the variables will be studied in their natural setting and the researcher has no control over them.

4.3 Target population

Target population is the specific population which the researcher may want to generalize in the study Mugenda and Mugenda (2003).The group has 116 peoples involved project managers, project coordinator, stakeholders of the NYHPP, EDCL, Contractors of the project and the former employees of the YNHPP and the beneficiaries of the project. This will constitute the target population for the study.

4.4 Sampling Technique

Sample is defined as a set of individuals selected from population, usually intended to represent the population in a

research study (Gravetter & Wallnau, 2007).A total of 88NYHPP group will constitute the sample size for this study. A sample size will be statistically calculated using Slovin's formula (Yamane, 1967). Using the formula as shown below, the researcher calculated for the sample size;

$$n = \frac{N}{1+N(e)^2}$$

Where;
n-the sample size
N - The population size (116)
e - The acceptable sampling error (0.05)

$$n = \frac{116}{1+116(0.05)^2} = 88$$

4.4.1 Sampling Procedure

Sampling is necessary when the population is large with the consequent impracticality and high cost of testing each member of population (Denzin, 2000). Sampling is the selection of samples of study participants from the population such that the samples are representative of the entire population under study (Griffiths, 2009). Random sampling technique will be employed to select samples. The sampling frame of women group members will be compiled from which samples will be selected using simple random sampling. This technique will be chosen for its ability to give an equal chance of being included in the sample to each member in the population.

4.5 Data collection Instrument

An instrument is any tool that is used in data collection. Babbie and Mouton (2001) defines a research instrument as a tool that is used for collecting data needed to find solutions to the problem under investigation. The researcher will use questionnaire as instruments for data collection for the study.To begin the procedure of collecting data, the researcher will seek to secure an introduction letter from Jomo Kenyatta University, identifying him/her as a bona-fide student. The researcher will further carry out visits to Rwanda housing Authority office to seek approval from the relevant authorities. This meeting will be held with an aim of gaining permission to administer the questionnaires. Moreover, appointments will be scheduled with the project team members in the sample population. Owing to the small population, the researcher will personally administer the questionnaires explaining each measure and noting the responses.

4.5.1 Reliability of Instrument

According to Mugenda and Mugenda (2003), the reliability of an instrument is the measure of the degree to which a research instrument yields consistent results or data after repeated trials. In order to test the reliability of the instrument to be used in the study, Cronbach's alpha (or coefficient alpha), will be determined. It is a way to measure reliability, or internal consistency of an instrument (Cronbach, 1951). An alpha of at least indicates the instrument is reliable. The formula for Cronbach is as follows:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

Where:
N = the number of items,
$\bar{c}$ = average covariance between item-pairs, and
$\bar{v}$ = average variance.

4.5.2 Validity of Instrument

According to Paton (2000), validity is the quality attributed to proposition or measures to the degree to which they conform to established knowledge or truth. Validity therefore refers to the extent to which an instrument can measure what it ought to measure. It refers to the extent to which an instrument asks the right questions in terms of accuracy. The researcher will discuss the items in the instrument with the supervisors to ensure its validity.In order to enhance the validity of the study; the researcher will conduct a pilot study the respondents will not include in main study. Additionally, the researcher will incorporate input and opinions of the supervisor and various project experts in the development sector to help improve validity of data collected.

4.6 Data analysis of Instrument

The prior to data analysis, collected data will be checked for consistency and errors. Data that will contain incomplete information will be excluded. Through analysis technique and Descriptive data analysis, collected data will be tabulated according to their frequency and percentage and then analyzed accordingly. Statistical Package for Social Sciences (SPSS) will aid in data coding, entry and analysis of data which will be presented in form of tables.

After receiving the filled questionnaires from the respective respondents, the questionnaires will be reviewed for completeness and consistency. The questionnaires will also be edited of errors in readiness for analysis. Responses will then be categorized according to the objectives and coded appropriately and keyed in to a statistical analysis program. Descriptive statistics such as means, percentages and frequencies will be used thereby transforming the raw data into figures and tables for interpretation (Mugenda & Mugenda, 2003) for clear understanding. Correlation coefficient model will be used to measure the associations between the dependent and independent variables appropriately. This will be applied to the quantitative data collected through the questionnaires.

A multiple regression analysis will be used to establish the relationship between Resource factors and project completion

$Y = Bo + B_1X_1 + B_2X_2 + B_3X_3 + e$
Where Y = Project completion
X_1 = Information Resources
X_2 = Financial Resources
X_3 = Human Resources
e = Error term
Bo = Constant

B_1=Coefficient of X_1
B_2=Coefficient of X_2
B_3=Coefficient of X_3
Statistical Package for Social Science (SPSS) will be analytical tool to use for all analysis

5. Research Findings and Discussion

5.1 Introduction

This study sought to assess the resource factors influencing the project completion in Rwanda my case study was Nyabarongo I hydro power plant project in Muhanga district. A total of 88 questionnaires were administered to the study respondents. Out of the 88 questionnaires issued, 73 were filled and returned for analysis.

5.2 Background Information of the respondents

Background information that was collected from the respondents included gender, age, education level, and the duration of working in the project.

5.2.1 Gender of Respondents

Table 1: Male and Female

Sex	Frequency	Percent
Female	40	45.5
Male	48	54.5
Total	88	100.0

Source: Primary data, September 2017

As seen from the above table, 45% of 88 assessed former employees at NyabarongoI Hydro Power Plant are females and 55% are males.This implies that both men and women participated in the implementation of the project. Men are however slightly more than women.

5.2.2 Level of Education Respondent

Table 2:

Education level	Frequency	Percent
Bachelors' Degree	25	28.4
Masters' Degree	63	71.6
Total	88	100.0

Source: Primary data, September 2017

table shows that, 25% of the respondent have level of education in bachelors 'degree and Majority of 63% have

master level of education, This means the study respondents had adequate knowledge to understand the purpose and the methods of the study and hence give relevant and reliable information. It also shows that the project was being implemented by educated people capable of ensuring achievement of project objectives.

5.2.3Time being in project

The study further sought to determine the duration in which the respondents had been working within the project

Table 3: Time being in project

Time being in project	Frequency	Percent
Less than 3 years	20	22.7
3 and 5 years	53	60.2
5 and above years	15	17.0
Total	88	100.0

Source: Primary data, September 2017

Table 3 indicate that, Majority of 60% of respondent's time being in project worked in between 3 to 5 years, so20% respondent that the project completed below 3 years. This means that most of the respondents have been in the project for a sufficient time and therefore they could give reliable and relevant information regarding the project planning and implementation.

5.2.4 Nyabarongo I hydro power plant project been operating in Muhanga District

Table 4:

Years of project construction	Frequency	Percent
1-2 years	13	14.8
2-3 years	35	39.8
3-4 years	15	17.0
more than 4 years	25	28.4
Total	88	100.0

Source: Primary data, September 2017

As seen above in table 4 : 39.8% respondent that the project has been operated in 3 years, 28% respondent that the project has been operated in 4 years, 17% respondent that the project operated between 3 to 4 years, 14% respondent that the project operated in 2 years. Which show us that the project been operated in 3 years.

5.3 Information Resource and Project Completion

Table 1: Information Resource factors and Project Completion

	SA		A		Un		D		Total		M	SD	Comments
	fi	%	fi	%	fi	%	fi	%	n	%			
In your point of view, the information resource influences project completion	38	43.2	50	56.8	0	0.0	0	0.0	88	100	4.43	.498	Strong Homogeneity
In your point of view, the information resource of NYHPPP had ensured the quality of the project	28	31.8	60	68.2	0	0.0	0	0.0	88	100	4.32	.468	Strong Homogeneity
Information resource was fully followed and utilized in NYHPP	10	11.4	48	54.5	0	0.0	30	34.1	88	100	3.43	1.081	Strong Heterogeneity
The time resource of NYHPP had completed with time	15	17.0	0	0.0	13	14.8	60	68.2	88	100	2.66	1.123	Moderate Heterogeneity

Source: primary data September, 2017

Table 2 shows, that strong homogeneity 43.2% respond that the information resource it influence the project completion, and the Majority of 56.8% respond that the information resource it influence the project completion, while strongly disagree of 0.49% respond that information resource cannot influence the project completion, Table shows that 31.8% strongly agree respondents and Majority of 68.2% agree that the information resource of Nyabarongo I hydro power plant had met the quality requirement of the project.

Table shows that information resource of NYHPPP, 11.4% strongly agree that the information resource was fully followed and utilize the information resource, while the Majority of 54.5% agree that the NYHPPP was not utilize the information resource, 34.1% disagree that the NYHPP was followed and utilize the information resource of the project.1.08% strongly disagree that the project utilize the information resource of the project.

As seen in the table above, the respondent of 17.0% strongly agree that the project completed within time, 0.0 agree that the project completed within time, the Majority of 68.2% disagree that the project was   not completed

within time.1.123% strongly disagree that the project was not completed within time.

Table 2: Factors influencing information resource on the project completion

Factors influencing information resource	Frequency	Percent
1.People with required skills for project completion	48	54.5
2.Lack of required equipment and material to project	10	11.4
3.Poor communication and coordination in NYHPP	15	17
The information resource of NYHPPP results to project completion on time	15	17
Total	88	100

Source: primary data September, 2017

As seen in table above, The Majority of 54% respond that people with required skills for project completion, 11.4% lack of required equipment and material to project, 17% respond the poor communication coordination in NYHPP, 17.0% respond that the information resource of Nyabarongo I hydro power plant results to project completion on time.

5.4 Financial Resource and project completion

Table 1

	SA		A		Un		D		Total		M	SD	Comments
	fi	%	fi	%	fi	%	fi	%	n	%			
Financial resource results to project completion?	30	34	58	66	0	0	0	0	88	100	4.3	0.477	Strong Homogeneity
Financial resource contributes to NYHPP to ensure the quality of the project?	0	0	40	46	35	40	13	15	88	100	2.3	1.061	Moderate Heterogeneity
Financial resource made NYHPP to complete within time?	0	0	48	40	15	17	25	28	88	100	2.8	1.12	Moderate Heterogeneity
Financial resource made NYHPP to complete within budget?	0	0	0	0	0	0	0	0	88	100	2.6	1.177	Moderate Heterogeneity

Source: primary data September, 2017

As seen as in table above, 34.1% respondent strongly agree that financial resource result to project completion, The Majority of 65.9%, respondent agree that the financial resource result to project completion, strong homogeneity, 45.5% respondent that financial resource contribute to NYHPP to ensure the quality of the project.39.8% respondent in undecided, while the strongly disagree 1.061% respondent, financial resource contribute to NYHPP to ensure the quality of the project. Moderate heterogeneity

As seen as in the table above, 45.9% respondent, agree that the financial resource made to NYHPP to complete within time, while 39.8% undecided that the financial resource made to NYHPP to complete within time, 1.06% disagree that the financial resource to NYHPPP to complete within time.

As seen as in table above, 1.17% respondents strongly disagree that financial resource made NYHPP to complete within budget. Moderate heterogeneity.

Table 2: Financial resource and project completion

	SA		A		Un		D		Total		M	SD	Comments
	fi	%	fi	%	fi	%	fi	%	n	%			
There was low financial resources in NYHPP	0	0.0	45	17.0	10	11.4	33	37.5	88	100	2.11	1.066	Moderate Heterogeneity
The ability of resource management project due to capital, reserves, cash flows, working capital of NYHPP keeps NYHPP project within time, budget, and scope	28	31.8	35	39.8	15	17.0	10	11.4	88	100	3.92	.973	Strong Heterogeneity
Financial resource resulted to NYHPP sustainability	63	71.6	25	28.4	0	0.0	0	0.0	88	100	4.72	.454	Strong Homogeneity
The effective planning of project resources can cause NYHPP project complete within time, budget, and scope?	63	71.6	15	17.0	10	11.4	0	0.0	88	100	4.49	.971	Strong Heterogeneity
Resource factors influence the project quality?	28	31.8	45	51.1	0	0.0	15	17.0	88	100	3.53	1.114	Strong Heterogeneity

Source: primary data September, 2017

As seen as table above, 17% respondent agree, that there was low financial resources in NYHPPP, so 11.4% undecided that there was a low financial resource in NYHPPP, 37.5% Disagree that there was a low financial resource in project NYHPPP, 1.06% Strongly disagree that there was a low financial resource in NYHPPP. Moderate heterogeneity

As seen as in this table above, 31% respondent strongly agree that, 39.8% respondent agree that, 17% undecided that, 11.4% Disagree that, 0.97% strongly disagree, that the ability of resource management project due to capital, reserve, cash flow, working capital of NYHPPP keeps NYHPPP project within time, budget, and scope, Strong heterogeneity.

The table shows, strongly agree is 71% and agree is 28.4%, and undecided is 0.00% and disagree is 0.45% strongly homogeneity to financial resource resulted to NYHPPP sustainability.

The table shows, strongly agree 71.6% and 17% agree that the effective planning of project resources can cause NYHPP project complete within time, budget, and scope. Strongheterogeneity.

As seen as in table above, strongly agree 31.8% respondent, and agree 17% respondent strongly disagree 1.14% respondent that the resource factors influence the project quality.

5.5 Human Resource and project completion

Table 1: Human Resource and project completion

	SA		A		Un		D		Total		M	SD	Comments
	fi	%	fi	%	fi	%	fi	%	n	%			
We understand the relevance of the job of each member in project	0	0	45	51	15	17	28	32	88	100	3.2	0.895	Strong Heterogeneity
We are motivated to work hard always to achieve project successful outcomes	25	28	63	72	0	0	0	0	88	100	4.3	0.454	Strong Homogeneity
We have a plan that guides our project activities	43	49	45	51	0	0	0	0	88	100	4.5	0.503	Strong Heterogeneity
NYHPP project has a human resources as a key factors to project completion	10	11	30	34	15	17	33	38	88	100	3.2	1.071	Strong Heterogeneity
NYHPP project has the best skilled human resources to reach on project completion	35	40	43	49	10	11	0	0	88	100	3.9	0.942	Strong Heterogeneity

Source: primary data September, 2017

The table shows that, 51.1% respondents agree, 17% undecided, 31% Disagree, that we understand the relevance of the job of each member in project. This is strong heterogeneity.

As seen as table above, 28.4% strongly agree, the Majority of 71.6% Agree, but 4.28% disagree, 0.45% strongly disagree, that we are motivated to work hard always to achieve project successful outcomes. This is strong homogeneity?

As seen as table above, 48.9% strongly agree, 51.4% agree, but 0.503% strongly disagree to have a plan guides our project completion, which this is heterogeneity.
As seen as table above, 11.4% respondent strongly agree, 34% respondent Agree, 17% undecided respondent, 37.4% respondent disagree, 1.71 strongly disagree that NYHPPP,

has a human resources as a key factors to project completion

As seen as table above, 48.9%respondent strongly agree, 51% respondent Agree but 0.503% respondent strongly disagree, which is strong heterogeneity.

5.6 Correlation between Resources Factor to the Project Completion

Table 1

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	32.022	1.104		29.014	.000
Information resource was fully followed and utilized in NYHPP	-1.256	.039	-1.219	-32.581	.000
Financial resource contributes to NYHPP to ensure the quality of the project?	2.281	.086	2.173	26.459	.000
We are motivated to work hard always to achieve project successful outcomes	3.172	.161	1.292	19.743	.000
We have a plan that guides our project activities	-5.441	.160	-2.456	-33.937	.000
a. Dependent Variable: Project quality					

Source: Primary data, September 2017

The table shows were made to test the correlation between indicators of independent variable to dependent variable. Linear regression analysis considers the linear relationship between one dependent variable to one more independent variables. The analysis finds values on the following equation:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon$$

Where y represent dependent variable "project quality" and x values represent variables of independent variable, such as resource information (X1), financial resource (X2), Human resource (X3) and project plan (X4). With values from the analysis the function become like:

$$y = 32.022 - 1.256 x_1 + 2.281 x_2 + 3.172 x_3 - 5.441 x_4 + \varepsilon$$

Which means that, NYHPP project was delayed by the information availability and poor planning? In the other one unit change of resource information (X1), financial resource (X2), Human resource (X3) and project plan (X4) lead to -1.256; 2.281, 3.172 and -5.441 change times of project quality. Otherwise, if all independent variable are null, the quality project is equal to 32.022 units.

6. Summary of Findings, Conclusion and Recommendation

6.1 Introduction

This chapter presents the summary of the findings, conclusions that have been drawn from the findings and recommendations suggested from the conclusions.

6.2 Summary

The purpose of this study was to determine the resource factors influencing the project completion the study was conducted in Muhanga district where the project located, in Mushishiro sector; it adopted a descriptive research design that included collection of primary data using questionnaires. Target population included 116 project staff members, stakeholders of the project like contractors called Angelique International Limited (AIL).Sample size of 88 respondents was determined using Slovin's formula, Stratified Random Sampling techniques were used to obtain the samples. A total of 73 respondents were administered with questionnaire out which 73 were returned yielding a response rate of 90%. Statistical Package for Social Science was used to analyze the collected data.

The study findings revealed that, 45% of 88 assessed former employees at Nyabarongo I Hydro Power Plant are females and 55% are males. Also the study showed that, 25% of the respondent have level of education in bachelors 'degree and 63% have master level of education employees at Nyabarongo I hydro power plant,

The study revealed that, 60% of respondent's time being in project worked in between 3 to 5 years, so 20% respondent that the project completed below 3 years. This mention that the project was supposed to complete in 2 years, but Because of delay the project completed in 3 years and above.

Regarding the information resource, is strong homogeneity because of 43.2% respond that the information resource it influence the project completion, and the Majority of 56.8% respond that the information resource it influence the project completion, while strongly disagree of 0.49% respond that information resource cannot influence the project completion, so the information resource of the NYIHPP, had meet the quality requirement of the project. But the strongly agree respondents that 31.8% and the Majority of 68.2% agree that the information resource of Nyabarongo I hydro power plant had meet the quality requirement of the project., The information resource of NYHPPP, 11.4% strongly agree that the information resource was fully followed and utilize the information resource, while the Majority of 54.5% agree that the NYHPPP was not utilized the information resource well, 34.1% disagree that the NYHPP was followed and utilize the information resource of the project.1.08% strongly disagree that the project utilize the information resource of the project., the respondent of 17.0% strongly agree that the project completed within time, 0.0 agree that the project completed within time, the Majority of 68.2% disagree that the project was not completed within time.1.123% strongly disagree that the project was not completed within time.

The findings showed that. 31% respondent strongly agree, 39.8% respondent agree, 17% undecided or not respondent, 11.4 Disagree, 0.97% strongly disagree, that the ability of resource management project due to capital, reserve, cash flow, working capital of NYHPPP keeps NYHPPP project within time, budget, and scope, Strong heterogeneity.

The majority of respondents, strongly agree that 71% and agree is 28.4%, and undecided is 0.00% and disagree is 0.45% strongly homogeneity to financial resource resulted to NYHPPP sustainability.

The Majority of respondents 71. % strongly agree that effective planning of project resource can cause NYHPP project complete within time, budget, and scope and 17% agree that the effective planning of project resources can cause NYHPP project complete within time, budget, and scope. Strong heterogeneity.

In table shown, strongly agree 31.8% respondent, and agree 17% respondent strongly disagree 1.14% respondent that the resource factors influence the project quality. As seen as table above, 51.1% respondents agree, 17% undecided, 31% disagree, that we understand the relevance of the job of each member in project. This is strong heterogeneity.

The findings showed that, 28.4% strongly agree, 71.6% Agree, but 4.28% disagree, 0.45% strongly disagree, that we are motivated to work hard always to achieve project successful outcomes. This is strong homogeneity. As seen as in table, 48.9% strongly agree, 51.4% agree, but 0.503% strongly disagree to have a plan guides our project completion, which this is heterogeneity.

As seen as table above, 11.4% respondent strongly agree, 34% respondent Agree, 17% undecided respondent, 37.4% respondent disagree, 1.71 strongly disagree that NYHPPP, has a human resources as a key factors to project completion

As seen as table above, 48.9% respondent strongly agree, 51% respondent Agree but 0.503% respondent strongly disagree, which is strong heterogeneity.

The findings revealed that, were made to test the correlation between indicators of independent variable to dependent variable. Linear regression analysis considers the linear relationship between one dependent variable to one more independent variables. The analysis finds values on the following equation:

$$y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \varepsilon$$

Where y represent dependent variable "project quality" and x values represent variables of independent variable, such as resource information (X1), financial resource (X2), Human resource (X3) and project plan (X4). With values from the analysis the function become like:

$$y = 32.022 - 1.256 x_1 + 2.281 x_2 + 3.172 x_3 - 5.441 x_4 + \varepsilon$$

Which means that, NYHPP project was delayed by the information availability and poor planning? In the other one unit change of resource information (X1), financial resource (X2), Human resource (X3) and project plan (X4) lead to -1.256; 2.281, 3.172 and -5.441 change times of project quality. Otherwise, if all independent variable are null, the quality project is equal to 32.022 units.

6.3 Conclusion

6.3.1 Information resource on the project completion

The study concluded that information resource factors influencing the Nyabarongo I hydro power plant to complete on time, Based on findings shown that 17% respond that there are poor communication, poor planning, coordination in NYHPP, 17.0% respond that the information resource of Nyabarongo I hydro power plant results to project completion to delay in 14months. Additionally the study concluded that Information Resource factor is significantly associated with project completion.

6.3.2 Financial Resource factors on project completion

The study concluded, that financial resource factors has a significant relationship with project completion, Further the study concluded that completion of projects in Rwanda is significantly influenced by financial resource factors.

6.3.3 Human Resource factors on project completion

The study concluded that, human resource factors has a significant relationship in project completion

6.4 Recommendations

The study findings indicated that all the study variables have a significant relationship with the project completion. Further the variable explains a significant variation in the project's completion. In this regard the study recommends that projects and organization funding various projects should consider Information Resource factors, financial factors and Human Resource Factors that can lead the project to complete on time, the quality as well bring the success and sustainability in project.

7. Dedication

I dedicate this work to my husband Major Gisa Johnson, and my first born Gisa Gwiza Elijah and second born Ganza Elisha, my husband helped me financially and supported me in a different ways to accomplish this master level, and my children enabled me and as well as they have been a good guys to me until I end this study and to do what I supposed to do. Furthermore, I can't forget to keep on being grateful to my lovely husband who kept encouraging me and providing me a plenty of counsels. God lord bless them all for everything.

8. Acknowledgement

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Appendices

Appendix 1: Questionnaires
IMPACT OF RESOURCES MANAGEMENT ON THE PROJECT SUCCESS IN RWANDA: A CASE OF NYABARONGO I HYDRO POWE PLANT PROJECT AT MUHANGA DISTRICT

Dear Respondent,

This questionnaire has been designed to gather information on the above subject. I am a student at Jomo Kenyatta University of Agriculture & Technology carrying out a research study as part of requirement for fulfillment of award of MSc in Project Management. I am carrying out a research study. The purpose of this study is to assess the resources factors influencing the project completion in Rwanda; case of NYHPP projects at MUHANGA district.I kindly request you to fill the questionnaire. Any information you provide will be used strictly for academic purpose and will be treated with utmost confidential and at no instance will your name be mentioned in the report.

A copy of the research project will be provided to you upon request.

Thank you for your cooperation.

Part 1: Demographic Data

Instructions**:** kindly tick appropriately on one that applies.

1. Gender (G)
Male ☐
Female ☐

2. Highest level of education obtained (H)
Certificate ☐
Diploma ☐
Bachelor's degree ☐
Master's degree ☐
PhD ☐
None ☐

3. Period since you joined the project (P)
1 year ☐
1-2 years ☐
2-3 years ☐
3-4years ☐

4. The number of NYHPP Project groups you are responsible for (T)
1 group ☐
2 groups ☐
3 groups ☐
None ☐
2-3 years ☐

5. How long has Nyabarongo hydro power plant Project been operating in Muhanga district
1 year ☐
1-2 years ☐
3-4 year ☐

Part 2: The resource factors and project completion

Below are a number of statements regarding perspectives to resources management and project success; Please react to each indicating to what extent you agree or disagree with the statement;

№	Statement	Response				
		SA	A	N	D	SD
1	Information resource influences Project completion					
2	information resource of NYHPPP had ensured the quality of the project					
3	information resource was fully followed and utilized in NYHPP					
4	The time resource of NYHPP had completed within time					
5	The information resource of NYHPPP results to project completion on time					
6	50% of the Project schedule is able to implement the information resource					

Part 3: Financial Resources on the project completion

Below are a number of statements regarding financial resources management and project success; Please react to each indicating to what extent you agree or disagree with the statement;

1	Financial resource results to project success					
2	Financial resource contribute to NYHPPP to ensure the quality of the project					
3	Financial resource made NYHPPP to complete within time					
4	Financial resource made NYHPPP to complete within budget					
5	There was low financial resources in NYHPP project					
6	The ability of resources management project due to capital, reserves, cash flows, working capital of NYHPP Keeps NYHPP project within time, budget & scope					
7	Financial resource resulted to NYHPPP sustainability					
8	The effective planning of project resources can cause NYHPP project completed within time, budget and scope					
9	Resource factors influence the project quality.					

Part 4: Human Resources and Project completion

Below are a number of statements regarding resource factors influencing the project completion; Please react to each indicating to what extent you agree or disagree with the statement;

1	We understand the relevance of the job of each member in project					
2	We are motivated to work hard always to achieve project successful outcomes					
3	We have a plan that guides our project activities					
4	NYHPPproject, has a human resources as a key factor to Project completion					
5	NYHPP project has the best skilled human resources to reach on project completion					
6	The ability to organize the humans resource in project and technical decisions Keeps NYHPPcompleted within time, budget & scope					
7	The ability to coordinate human resource and technical decisions results to NYHPP project quality					
8	The ability to coordinate humans resource and technical decisions results to NYHPP project sustainability					
9	The ability to keep human informed of project progress Keeps NYHPP project completed within time, budget & scope					

Part 5: The Project completion

In your own opinion, would you say the current NYHPP project completion is as required? Yes ( ) No ( )
Please describe your answer
……
……

Any closing or additional remarks on how projects success can be enhanced or made more effective

Appendix 2: Work Plan Activity

ACTIVITY	PERIOD 2016-2017									
	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Research Problem & Topic	▇	▇								
Write Research proposal			▇	▇	▇					
Distribute questionnaires						▇				
Data collection						▇	▇			
Data Entry, analysis& Compilation							▇	▇		
Paper writing& Publication								▇	▇	
Editing, printing, Binding									▇	▇

Appendix 3:

№	Item	Quantity	Price Per Unit (RWF)	Amount (RWF)
1	Transport	7	10, 000	70, 000
2	Stationeries	10	5000	50, 000
3	Printing	4	4, 000	16, 000
4	Binding	4	5, 000	20, 000
5	Internet	40	2000	80, 000
6	Computer	1	550, 000	550, 000
7	Communication	50	2000	100, 000
8	Miscellaneous	1	100, 000	100, 000
	TOTAL			**986, 000**

986, 000RFW=1171 USD