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Abstract

Background: A manufacturing sector is one of the investment opportunities identified in Rwanda where the different incentives of customs duties are applied to raw materials, intermediate products and finished products (RDB, 2022). Investigating the effects of cooking stoves project planning on its performance is the overall goal of this study. The specific objectives are ; to examine the influence of project scope planning to the project performance of MICS; to examine the influence of project scheduling planning on project performance of MICS; to assess the influence of project cost planning on project performance of MICS; and to assess the customers' satisfaction planning on project performance of MICS..

Methods and Materials: The research was conducted under the population of two hundred ninety-six (296) people who are the ones who have involved the manufacturing and installation of 468 cooking stoves and 106 additional pots in two hundred thirty-four (234) schools located in the districts three districts. The said population including eight (8) management team of project, fifty-four (54) technicians, and two hundred thirty-four (234) project beneficiaries. And the sample for this study is 30% of the population which is eighty-nine (89) respondents who was selected based on their category. Besides that, questionnaires were used to collect the data and both quantitative and qualitative approaches were used for sorting and analyzing the research findings.

Results: The research findings reported that the project planning led to the project performance even though there were some unplanned happenings associated with the COVID-19 worldwide pandemic. Considering the research findings, the research concludes that the performance of manufacturing institutional cooking stoves for school feeding programme has a favorable and significant relationship with project planning and project impacted positively on society particularly to the educational community of 234 schools including seventy-one (71) schools

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located in Ngoma, sixty-five (65) schools located in Kirehe and ninety-eight (98) schools located in Gatsibo districts.

Conclusion: Therefore, the research has recommended the government of Rwanda to extend the project activities to the other categories of organizations for the interest of efficiency use of energy during the kitchen activities and environmental protection.

Keywords: *Cooking Stove Project Planning, Performance, National School Feeding Programme, Rwanda.*

i. Introduction

An effective planning is the key process that ensures institutions work well (Public or Private) and completed in the allotted time, scope and the budget. Worldwide, the capacity to manage and complete the task is closely related to the planning process that went into it (Paxton, 2011). Projects fails due poor planning, usually because the challenges are not clearly stated or important variables, such as the wants and opinions of everyone engaged in and impacted by the work, are not taken into consideration. Planning can be a daunting task, especially to the community or networks performing that action for the first time (World Economic Forum, 2014). Importantly, it is crucial to keep in mind that there are typically no wrong approaches to design a project. Once you begin; the cycle will go intelligently without intervention of anybody else, with one step typically inspiring another (Ika *et al.*, 2010).

The creation of a project planning board or committee is the initial stage of project planning. Communities and associations should at all times use a group approach to deal with and plan new projects that include personnel, members of the community, the community's authority administration, and a grant writer or advisor, if necessary. The members of board play a crucial role in ensuring that everyone has the chance to participate and keeping the project planning cycle on the schedule. The board can schedule meetings, conduct discussions, gather and analyze data, consult with many corporations and businesses (Kazhibekova & Jusufovic, 2010). Ensuring community involvement is one of the projects planning most challenging aspects, since it requires the information and abilities needed to plan, oversee or advocate for the effective project enhancement with widespread support (Ahmad, 2012).

Forums should be regularly held throughout the planning and developing process. Set up forms provide a fantastic way to gather traditional and local information when used appropriately (Galvin, Gibbs, Sullivan & Williams, 2014). They serve as means of soliciting inputs on objectives, aims, and exercises in order to choose how to best organize them. Planning well is good stewardship (Zwikael *et al.*, 2014). Any endeavor demands careful planning and preparation in order to be successful. Dereliction is almost always warranted in the absence of proper planning (Bhavikatti, 2012).

Understanding the task's primary objective, its value, and its procedures is one of the most essential components of project planning (Emuze, 2011). In dream proclamation, the vision and mission are frequently included. The vision outlines what the project must be. It takes a long view and concentrates on what will happen next (Yimam, 2011). It is very well and could be motivating and emotionally charged. The project or business mission expresses the primary purpose for its existence and outlines the actions it takes to realize its goal (Parsons *et al.*, 2013). Qualities

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establish the culture of project, define its primary interests, and provide the framework for decision making (Barrows & Neely, 2012).

In developing nations, the process which involved in strategic planning is a number of core techniques that are recommended to influence or manage a situation in order to improve the outcome for a business. As opposed to basing based on custom and respecting rivalry of driving organization's moves, this structure is quite unique (PMI, 2014). Strategic planning in business largely directs specific areas, such as finance, human resources, and marketing. The purpose of this research is to evaluate the essential planning techniques that can support project performance execution in public institutions. Therefore, the study is eventually aimed to evaluate the role of project planning to the successful implementation of manufacturing projects with a case of manufacturing of institutional cooking stoves project in IPRC East Engineering Company ltd.

The main objective of this research was to investigate the influence of the project planning to the performance of manufacturing projects. It was guided by the following specific objectives:

- i. To investigate the influence of project scope planning to the project performance of Manufacturing institutional cooking stoves;
- ii. To examine the influence of project scheduling planning on project performance of manufacturing Institutional cooking stoves;
- iii. To assess the influence of project cost planning on project performance of manufacturing institutional cooking stoves;
- iv. To assess the project quality planning on project performance of manufacturing institutional cooking stoves.

ii. Theoretical Literature

Project

According to PMI (1996), a project is divided into many development phases, starting with the initiation stage and continuing with the planning, carrying out, monitoring and controlling phases. Every decision made by an organization is based on the project results that can help to accomplish the business end, and although if a project is used to implement a business strategy, both its impacts and outcomes are flexible (Comminos, 2002).

Project planning

Kerzner (2003) and PMI (2004), defines project planning as a process of organizing, coordinating, and managing the numerous activities associated to a project in order to accomplish its objectives. The project planning is the process of establishing parameters that will allow the project's predetermined objectives to be achieved (Faniran, Lenard & Oluwoye, 1998).

The functions planning, organizing, controlling and directing are the four major functions of the management but the planning function is often cited important as it is important for determining how well a project performs overall and is seen as a crucial stage for an organization's success in achieving its goals and objectives (Gibson & Wyang, 1998). The research towards the causes of project delay in Slovenia by using 14.5% of clients, 22.6 % of contractors, 35.5% professional engineers found that the delays of the project are related to the insufficient proper technology. This study recommended that more attention is required to project design through analyzing its documents (Selih & Srđić, 2015). Mišić and Radujković (2015) have observed that the project

performance is influenced by planning, clarification in the project's scope, good collaboration between stakeholders, skilled competent project managers and external monitoring and control.

Steps in Project Planning

The project plan is a written document that lists the preparations and actions that must be taken throughout the project's implementation. It serves as the basis or cornerstone for the project's execution. It covers every component of the strategy and provides a concise summary of the project's goals. This strategy presents many options and combines all of the elements in accordance with their needs and expectations. The cost, time and quality performance are all factors in these requirements. The following questions such as what, when, why, where and how the project was completed, are the ones that the level for measuring performance seeks to answer (Al Nasser, 2015 & Kejuo, 2012). Authors put forward tens (10) steps in project plan that are:

Plan to plan is the initial step entails making a good allocation of resources and planning for the project's requirements. The second relates to structure and timetable including identification of project milestones, creating of leadership style and channel for communication.

The third phase is to gather and evaluate pertinent data for a complete plan that addresses both challenges and concerns for the present community and the future. The planning commissioners who gather and analyze a large collection of data must do this, and a strong plan requires quantitative data. The significance of this stage is to develop a thorough strategy and involve the public by holding community meetings, surveys, focus groups or advisory committees.

The next step is to create a vision statement, and the sixth is top set detailed plan goals and objectives that must be accomplished within a given timeframe. The next one is to determine project deliverables, the seventh phase is to create even assess various plans, create project schedule and milestones. The final step is to choose and develop a suitable strategy, assessment of tasks and carry out risk assessment.

For this stage, the final plan's draft is then created at this stage and made ready for adoption by the planning commission. The ninth phase is where the institution accepts the plan, and then the step ten is the step where the outcomes and implications are monitored. For this point, project activities can begin which necessitates task assignment and the plans must be created with intention of implementing changes (Grant, 2015; McKane, Perry & William, 2007).

Procedures of Project Planning

The objective of planner is about the development of a tool that enable the management of exercise and to control plan as well as performance of the project within number of project matter. To attain objectives, planning has to base on the project situation in logical manner; the further stage is to structure a method through which the management concern can receive information required (Ahuja, 1994). The author has presented two important techniques that may help the planner to succeed.

The first technique refers to Work Breakdown Structure (WBS), which consist to build the scope work in different managerial pieces. The project manager and other concern involving contractors and subcontractors do the initial break down. This tool allocates tasks, which must be revised and completed by the stakeholders (Lewis, 2000).

The second technique is Organizational Responsibility Chart (ORC) that consists to assign in the project each work page to every person. The responsibility comes to the program manager to assign the tasks and still being an accountable for supervision. His responsibility is to set a chart that allows not only a communication but also reporting to the concerned team.

The method of critical path analysis is applied to determine the shortest duration or task of the project and it organize identified tasks as activities in logical sequence for different events that permit a project to be executed in stipulated time. PERT provide a good time estimation by accounting for the risks when assigning a duration of task. This method tries to estimate the risks by referring the schedule of project and try to indicate estimate, which must be done by technicians understanding different operations being analyzed (Ahuja, 1994).

Role of project Planning

When managing projects, planning is a key element for this approach. At this stage, the objectives, the needs and projects requirements related to the project work are determined. Generally, if they are related to research activities, they originate from the relevant research or from the main author. Whether they pertain academic research. This information, which the contractor may occasionally offer in a clear manner, should serve as the basis for creating the project plan and generally considers the needs of clients, which are clearly articulated and later described by the client (Szopik, Depczynska & Lanfranchi, 2016).

Zkwikael (2009) studied nine project management knowledge categories that are crucial for project success by using an analysis of 783 questionnaires. His findings stated that these knowledge areas had the high influence on the success of project. This implies that if the planning processes, which are related to this knowledge, are well analyzed, this contributes to success of the project. He discovered that because they are applied in practice throughout project execution, cost management and purchasing are the knowledge areas that at very least influence a project's success. Finally, he claimed that because risk, time, scope is frequently related to planning phases, they have the strongest link with the project success.

Project Planning Variables

In the area of managing projects, the terms of efficiency are normally used but infrequently defined. The term efficiency in quality management, is referring for doing things right, means that everything must be done in the most suitable way, given the available resources and the term effectiveness is referring to do the right things, means choosing and focusing on production of output when the is a demand (Lampel ,2001).

According to O'Donnell (2019), a planning has to be precise and effective for how well an organization is performing. This research focuses on four steps that have to be taken in order to make planning effective.

iii. Theoretical Framework

A theoretical framework is summary of important theories which serve as a manual for developing the arguments for your own work (Vinz, 2015). We start new projects, new initiatives, new programs, and new products and services. We also create plans for improvement, transformation and doing things differently. We also debate, create, and then put into actions short, medium, and

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long term strategies for where we want to go as an organization and what we want to accomplish (Phast, 2017). The project team needs to be led by an implementation strategy that outlines the step-by-step project delivery in order to enhance the likelihood of success (Vikitoriya, February 2022). This means that the planning is highly needed for successful implementation of every project.

Review of the Project Planning

Planning is an essential part for a project's success and ability to run smoothly. The procedure is going as a project is being delivered. Planning has been cited as one of the essential project management procedures in a number of empirical researches that determine a project's success. All project managers could create an effective project plan and adhere on it for the project to be successful (Idoro, 2012). It is said that if you don't plan well, you are planning to fail, (Benjamin Franklin, 1790). This implies that a good planning leads to successful implementation of planned activity while poor planning leads to failure of planned activity. According to SCVO (2021) an advance planning is valuable in many aspects of life and this is especially true within the reality of business continuity and Project management.

Dariusz (2020) argued that the project planning assists the projects managers during the implementation stage as it gives them the ability to anticipate resources requirements and expenditures to develop more affordable schedules with definite deadlines to communicate with project stakeholders in clear and reliable manner, to provide dependable data to measure risk and opportunity, to provide good data for controlling and monitoring, to minimize material waste, and to provide a solid foundation for facilitating negotiations and coordinating the team. Without a strong commitment and understanding from the project manager and other stakeholders as to how to manage planning and scheduling most effectively, the advantages cannot be realized. In manufacturing projects, planning involves supply chain planning, production scheduling, materials requirements planning, production lead time and capacity planning aspects, (Quincy, 2021).

The future of production industries lies on production planning and as a results of insufficient capacity evaluation, timing of production, bureaucracies on the inside, idle time, and other extra requirements for production, absence or bad planning have resulted in delivery deadlines that have been broken, is typically result in legal penalties (Obaleye, Oludare, Ezema & Adeboye, 2021). The created plans also assist in the management of workers and outside vendors, ensuring that the project is finished on time, under budget, and in accordance with schedule. The project managers should collaborate with the project's intended beneficiaries in order to establish quantifiable project schedule, cost and quality measurements to gouge project satisfaction and successful completion as well as for monitoring and evaluation needs.

Creemers, Reyck and Leus (2015) said that project planning aids in project foresight and future preparation, define goals and develop a vision, recognizing problems which need to be fixed, weighting options, determine whether a project is feasible, making the best use of resources, inspiring personnel and community, allocating resources and responsibilities and ultimately producing the best results. In order to make it easier to create a work breakdown structure, the team for project should plan on project scope. Develop a work breakdown defines tasks and subtasks for the project, establish a schedule for project activities, budget, describe a cost that will be incurred

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when the project is completed, prepare for procurement, plan for probable hazards, and take into account optional contingency (Pellerin & Perrier, 2019). Therefore, planning was operationalized in this study through the consideration of scope, time and budget.

Review of Project Performance

Theoretically, determining if an endeavor will be successful is really intuitive and challenging, (Kazhibekova & Jusufovic, 2010). Consequently, the implementation of project might be defined as the manner in which the project has achieved goals of a certain effort. In any case, it frequently considers project performance when categorizing projects. According to Barrows and Neely (2012), the problems controlling the project itself (time, cost and execution) and problem managing the client should be its two main focuses (use, fulfilment, viability). The hypothesis of project performance should occasionally be a bit confusing because different writers of literature have used these words in different ways.

The success of project management is commonly referenced in discussions of project performance. In a semantic sense, project success can be measured after the task is completed (Turner, 2012). Bhavikatti (2012) have entirely separated project success from venture the board success (assessed alongside the extensive and old-style methods of time duration, expenditure and value). Several experts relate the concept of task performance to the proficiency and viability ratios (Afande, 2013). Ratios of proficiency include duration, budget and specifics; efficiency ratios refer to meeting job objectives, customer satisfaction, and the project perceived worth. Additionally, it should be highlighted that different applications of important concepts or arguments depend on the timing of estimation and the criteria that are being used. Project performance metrics that are arbitrated to refer to venture's level of success (Cooke-Davies, 2012).

Relationship between Project Planning and Performance

According to Faludi (1973), the planning theory is a procedural paradigm based on the “form/ styles/ approaches” of planning while the formal or established methods of doing anything are described by the procedural theory. The planning procedures are divided into supporting and core processes and procedures. These include scope planning, scope definition, definition of activities, estimating cost, developing the project plans produced by these procedures serves as an input to the processes that actually execute the projects. PMBOK (2017), project planning is the process of elaborating a plan of project, which acts as a formal, authorized document that specifies project control and execution procedures. The main two goals of the project plan are to facilitate communication among project stakeholders and to keep track of planning assumptions and decisions. Shenhar (2001) noted that effective planning is typical of high and ultra-high technology projects. Therefore, this implies that without proper planning for project, there is a high risk of project failure as Serrador, P. (2012) said that investing time in planning activities can lower risk and boost project performance. In another way, no or ineffective planning results in project fail. Thomas, et al. (2008) inserted in Serrador, P. (2012) work claimed that a bad project strategy cannot be overcome by a good team, and that project which begun in a wrong direction might collapse spectacularly. This means that a good project planning plays a vital role to ensure the high project performance and every manager should make sure that the project-planning phase is done

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successfully as it leads the project stockholders to where they want to be and how they will reach there.

Project planning in Manufacturing Sector

Manufacturing sector is one of the investment opportunities identified in Rwanda where the different incentives of customs duties are applied to raw materials, intermediate products and finished products (RDB, 2022). According to NISR index of industrial production report (May 2022), the Index of Industrial Production (IIP) shows that industrial output (formal sector) decreased by 0.6 % compared to May 2021, against an increase of 12.2 % on annual average basis. Activities performed as follows: Mining and quarrying increased by 43.6 %, Manufacturing decreased by 7.3 %, Electricity increased by 12.6 %; and Water and waste management increased by 14.5 %.

This means that the manufacturing sector needs more emphasis to get it increased so that it makes a contribution to the nation's economic growth. To get the manufacturing projects passable, there is a need of planning as a way of creating a roadmap for the project implementation as Ahmed A. (2018) said that the planning begins after dreams, goals, and ideas are born and that it is essential in every part of life. The planning stage of project management may not be the most pleasurable, but it is the most important stage for lowering risk and failure rates (Moira Alexander, 2018). According to Watt A. (2014), the planning stage of a project is crucial because it communicates to all parties involved where you are going and how to get there.

These show that the indicators of successful implementation of the said project were not reached out as Caeleigh M. (2021) said that the project could be considered a failure for the when the project didn't meet its objectives, it does not get the deliverable wanted and work was not completed on time as argued by Caeleigh M. (2021). Therefore, the study will examine if the project planning can affect how a manufacturing project is implemented in terms of performance through the case of manufacturing institutional cooking stoves project conducted by IPRC East Engineering Company ltd.

iv. Conceptual Framework

The conceptual framework in this study captures the practice of the connection between dependent variables and independent variable, specifically cooking stove project planning performance with a case of Manufacturing of institutional cooking stoves for National school feeding programme at IPRC East Engineering Company ltd. It presents independent variables, which is, Project planning in relation to a dependent variable, which is performance of manufacturing cooking stoves projects as highlighted in the figure 1:

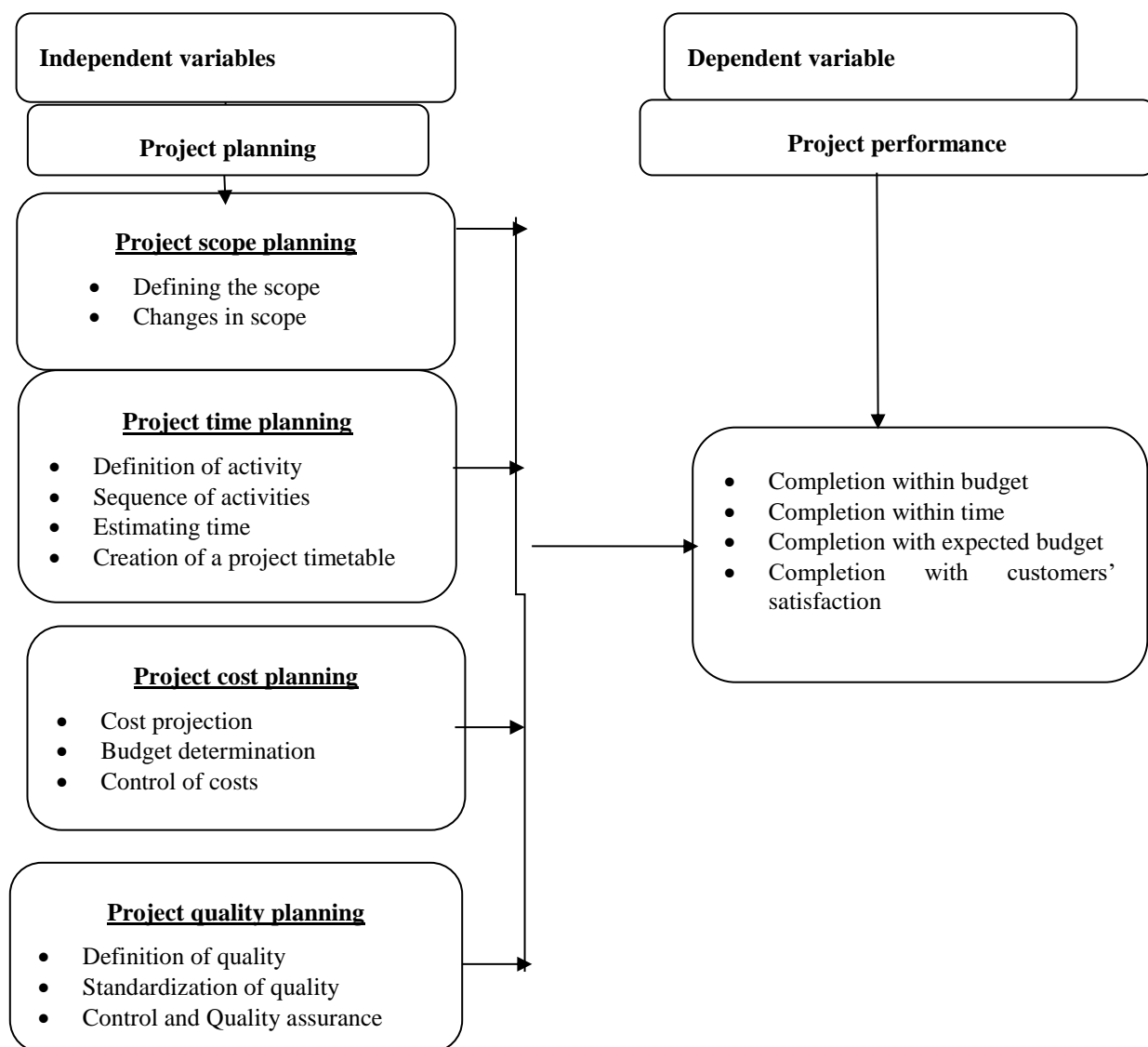


Figure 1: Conceptual Framework

Source: Researcher 2023

v. Research Materials and Methods

Target population

According to IPRC EEC LTD report (2021), The population of this study was two hundred ninety-seven (297) people including eight (8) management team of project, fifty-four (54) technicians, one distributor and two hundred thirty-four (234) project beneficiaries.

Sample Design

The sample design is typically the clear strategy of gathering sample from a particular population. A sample for this study was obtained from each category of population characteristics. This means that sample was from project management team, manufacturing technicians, distributor and project school beneficiaries.

Sample Size

The study's sample size was 30% of the entire population as Mugenga & Mugenda, (2003) explained that when collecting data for a research project, a sample of 30% is adequate to represent the study's target population. This implies that a sample size consisted of 89 participants as displayed in the table below:

Table 1: Sample Size

| No | Key players for project /population category | Number of population size | Sampling percentage | Sample size |
|--------------|--|---------------------------|---------------------|-------------|
| 1 | Project management team | 8 | 30% | 3 |
| 3 | Manufacturing technicians | 54 | 30% | 16 |
| 4 | Cooking stoves beneficiary school's headmaster | 234 | 30% | 70 |
| Total | | 297 | 30% | 89 |

Source: Researcher, 2023

Sampling Techniques

According Mugenda & Mugenda 2003 inserted in the book of Kipkorir K. (2014), when collecting data for a research study, a sample of 30% is adequate to represent the target population. As a result, the study's sample of this study was selected by using of the formula below:

$$N = 30\% * P \quad \text{Where } n = \text{sample size} \quad P = \text{Target population}$$

Apart from that, a purposive sampling technique was used in order to find the sample that is suited to the study needs. This is because each constituent of population has to be represented. Besides that, the sample was based on the individuals who are able to read and write so that they were able to read the questions on questionnaire and interpret them well before responding.

Techniques for Collecting Data

Data collection techniques are methodical ways to reliably gather data from a variety of sources in order to provide answers or insights, such as analyzing an outcome or testing a hypothesis. This suggests that gathering high quality that can be examined to support decisions and give proof is the primary motivation behind data collecting. Therefore, this part consists of data collection instruments, its administration procedures and reliability.

Data Collection Tools

The structured questionnaire was used to collect study’s data. Using questionnaire was distributed among eighty-nine (89) respondents including three (3) project management staff, sixteen (16) manufacturing technicians, and seventy (70) project beneficiaries (managers’ beneficiary schools). The questionnaire included closed questions and it had two sections where by the section one covered the questions related to identification of the respondent while the section 2 contained the questions about the research including project planning versus project implementation process, effects of planning to successful implementation of project and the contributions of proper planning to project performance. The questionnaire allowed the respondents to provide the information about impacts of project management components, especially project planning variables to the project performance of manufacturing institutional cooking stoves at IPRC East Engineering Company ltd.

Administration of Data Collection Tools

Under study, the questionnaires were used as a tool for data collection. The questionnaires were mostly effective because they offer a quick effective, and affordable approach to get a huge amount of data from a sizeable sample, and because it is a useful method for gauging the attitudes, preferences and behaviors of the subjects. This suggests that they can make it possible for the data collector to get both quantitative and qualitative data which results in more comprehensive findings. They were prepared in advance and distributed to each participant and the questions were explained to them before being asked to make them understand the questions in the same manner. After responding, the questionnaires were gathered from the respondents and be analyzed.

vi. Results

Presentation of findings

This part goes with presenting and discussing the research results related to how the research respondents considered the project planning and performance MICS project. The research informants have expressed their agreement through the use of SD=Strongly Disagree (1), D=Disagree (2), N=Neutral (3), A=Agree (4), and SA=Strongly Agree (5).

Assessment of Cooking stoves Project Performance

This is focusing on scope performance, budget performance, schedule performance and quality performance.

Table 2: Assessment of Project Performance

| Assessment of cooking stove project performance | Mean | Std. Deviation |
|---|------|----------------|
| Scope performance was achieved | 4.93 | .252 |
| Cost performance was achieved | 4.85 | .414 |
| Schedule performance was achieved | 4.85 | .441 |
| Quality performance was achieved | 4.98 | .149 |
| Overall Mean | 4.90 | |

Source: Primary data, 2023

The findings from Table 2 show a mean of 4.93 with a standard deviation of 0.252 explain that a large number of research informants confirmed that scope performance was achieved to a strongly agreement, a mean of 4.85 and a standard deviation of 0.414 shows that a large number of research informants reported that cost performance was achieved to a strongly disagree. The mean of 4.85 and a standard deviation of 0.414 also implies that a large number of the present research concluded that schedule performance was achieved to a strongly agreement and finally an average of 4.98 and a standard deviation of 0.149 implies that a large number of research informants proven that the quality performance was achieved as confirmed at a strongly agreement. Therefore, the overall mean of 4.90 indicates that a significant portion of research participants believed that project performance was met with strong agreement

Project Scope Planning versus Project Performance

The results indicated that scope planning was assessed through the scope definition, schedule of activities, budget planning, project inputs and designing project beneficiaries how they affect project performance of MICS.

Table 3: Project Scope Planning

| Statement regarding project scope planning | Mean | Std. Deviation |
|---|------|----------------|
| The SMART scope definition leads to the project performance | 4.90 | .339 |
| A schedule of activities leads to performance of project | 4.87 | .431 |
| The project budget planning leads to project performance | 4.91 | .358 |
| The project inputs planning in terms of personnel, timeframe, communication, materials acquisition and quality promotes project performance | 4.96 | .208 |
| Designing project stakeholders leads to project performance | 4.98 | .149 |
| Overall Mean | 4.92 | |

Source: Primary data, 2023

The findings in the Table 3 explains that the mean of 4.90 and a normative deviation of 0.339 show that a large number of research informants agreed that the smart scope definition leads to the project performance to a strongly agreement, the mean of 4.87 with a normative deviation of 0.431 express that a large number of research informants concluded that the schedule of activities leads to project performance to a strongly agreement. The mean of 4.91 and a standard deviation of 0.358 shows that a large number of research informants confirmed that the project budget planning leads to project performance to a strongly agreement, the mean of 4.96 and a normative deviation of 0.208 indicate that a large number of respondents concluded that the determining project inputs in terms of personnel, time frame, communication, materials acquisition and quality enhances the success of project to a strongly agreement.

Finally, the average of 4.98 and a normative deviation of 0.149 indicate that a big number of respondents highlighted designing project stakeholders leads to project performance to a strongly agreement. Therefore, since the overall average is 4.92, it implies that a large number of informants confirmed project scope planning has positive and significant contribution on performance of Manufacturing Institutional Cooking Stove for National School Feeding project.

Table 4: Correlation Analysis between Project Scope Planning and Project Performance

| | | Scope performance | Cost performance | Schedule performance | Quality performance |
|----------------|---------------------|-------------------|------------------|----------------------|---------------------|
| Scope planning | Pearson Correlation | .851** | .866** | .890** | .630** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| | N | 89 | 89 | 89 | 89 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data, 2023

The results from the Table 4 indicate that there is a considerable, positive correlation between scope planning and scope performance ($r=0.851$ and $sig=0.000$), between scope planning and cost performance ($r=0.866$ and $sig=0.000$), between scope planning and schedule performance ($r=0.890$ and $sig=0.000$) and between scope planning and quality performance ($r=0.630$ and $sig=0.000$) at a level of 0.01. Therefore, this indicates that scope planning has a positive, strong and significant effect in performance of Manufacturing Institutional Cooking Stove for National School Feeding project.

Project Schedule Planning versus Project Performance

This goes with the assessment of project schedule planning elements such as activity resource estimation, activity duration estimation, defining project outputs, delivery of activities on time and defining of time of project activities and how they affect project performance within MICS.

Table 5: Project Schedule Planning

| Statement regarding to project schedule planning | Mean | Std. Deviation |
|--|------|----------------|
| Activity resource estimation defines project schedule | 4.35 | .546 |
| Activity duration estimation promotes schedule performance | 4.85 | .386 |
| Defining project outputs schedule enhance project performance | 4.98 | .149 |
| Delivery of activities on time promotes project performance | 4.69 | .535 |
| Defining time of project activities implementation promotes timely performance | 4.43 | .582 |
| Overall Mean | 4.66 | |

Source: primary data, 2023

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The results presented in the Table 5 shown that an average of 4.35 and a standard deviation of 0.546 expresses a large number of research informants confirmed that activity resource estimation defines project performance to a strongly agreement, an average of 4.85 and a standard deviation of 0.386 explain that a large number of research informants concluded that activity duration estimation promotes project performance to a strongly agreement. The mean of 4.98 and a standard deviation of 0.149 express that a large number of research informants confirmed that defining a project outputs schedule enhance project performance to a strongly agreement, an average of 4.69 and a standard deviation of 0.535 express that a big number of informants revealed that delivery of activities on time promotes project performance to a strongly agreement while a mean of 4.43 and a standard deviation of 0.582 shows that a high number of research informants highlighted that defining time of project activities implementation promotes timely performance to a strongly agreement. Hence, the overall average of 4.66 shows that a large number of research informants agreed strongly that schedule planning had the positive and significant contribution towards the performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 6: Correlation analysis between schedule planning and project performance

| | | Scope performanc e | Cost performanc e | Schedule performanc e | Quality performance |
|-------------------|---------------------|--------------------------|-------------------------|-----------------------------|------------------------|
| schedule planning | Pearson Correlation | .715** | .931** | .875** | .535** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| | N | 89 | 89 | 89 | 89 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data, 2023

The findings from the Table 6 show a positive, strong and favorable relationship between schedule planning with scope performance ($r=0.715$ and $\text{sig}=0.000$), for schedule planning and cost performance ($r=0.931$ and $\text{sig}=0.000$), between schedule planning and schedule performance ($r=0.875$ and $\text{sig}=0.000$) and between schedule planning and quality performance ($r=0.535$ and $\text{sig}=0.000$) at 0.01 significant level. Therefore, the schedule planning has a n important and significant influences to the performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Project budget Planning versus Project Performance

These issues put emphasis on the existence of budget estimation, budget allocation, periodic budget monitoring and the usage of budget and how these elements affect project performance.

Table 7: Project Budget Planning

| Statement regarding to project cost performance | Mean | Std. Deviation |
|---|------|----------------|
| The existence of budget estimation was a key factor to the successful implementation of MICS project | 4.93 | .294 |
| The budget allocation was flexible enough to the successful implementation process of the project | 4.94 | .232 |
| Periodic budget monitoring which is used to compare spending to the budget enhances project performance | 4.99 | .106 |
| The project budget was used as planned | 1.43 | .541 |
| Overall mean | 4.07 | |

Source: Primary data, 2023

The Table 7 illustrates that an mean of 4.93 and a normative deviation of 0.294 express that a large number of informants confirmed that the existence of budget estimation was a key factor to the successful implementation of MICS project to a strongly agreement to a strongly agreement, the average of 4.94 and a standard deviation of 0.232 indicate that a large number of research informants highlighted that the budget allocation was flexible enough to the successful implementation process of the project to a strongly agreement. The average of 4.99 and normative deviation of 0.106 demonstrate that the majority of informants respondents revealed that periodical budget monitoring which is used to compare spending to the budget enhances project performance to a strongly agreement whereas the mean of 1.43 and a normative deviation of 0.541 expressed that little number of research informants concluded the project budget was used as planned to a disagreement.

Therefore, the total average of 4.07 confirmed that a large number of informants agreed strongly that the cost planning played a significant role on performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 8: Correlation Analysis between Budget Planning and Project Performance

| | | Scope performance | Cost performance | Schedule performance | Quality performance |
|-----------------|---------------------|-------------------|------------------|----------------------|---------------------|
| Budget planning | Pearson Correlation | .858** | .759** | .801** | .744** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| | N | 89 | 89 | 89 | 89 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data, 2023

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The results from the Table 8 explain that there is a beneficial impact and significant contribution of budget planning to scope performance ($r=0.859$ and $sig=0.000$), between budget planning and cost performance ($r=0.759$ and $sig=0.000$), between budget planning and schedule performance ($r=0.801$ and $sig=0.000$) and between budget planning and quality performance ($r=0.744$ and $sig=0.000$) at 0.01 significant level. Therefore, this demonstrates that budget planning has a crucial and significant contribution to the performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Project quality Planning versus Project Performance

The quality planning components include informing the project beneficiaries, achieving the expected project results and assessment where the project has responded the customers' needs.

Table 9: Project quality planning

| Statements regarding to project quality planning | Mean | Std. Deviation |
|--|------|----------------|
| Project beneficiaries were involved in the project implementation of MICS | 4.85 | .414 |
| Project beneficiaries knew well the project objectives and goals before the implementation | 4.88 | .331 |
| The project achieved results met the expected results to the beneficiaries | 4.99 | .106 |
| MICS responded customers' needs | 4.94 | .232 |
| The good quality plan leads to the quality service to beneficiaries | 4.96 | .208 |
| Overall mean | 4.92 | |

Source: Primary data, 2023

The Table 9 illustrates the mean of 4.85 and normative deviation of 0.414 show that the research respondents highlighted that project beneficiaries were involved in the project implementation of MICS to a strongly agreement, an average of 4.88 and standard deviation of 0.331 show that the research informants confirmed that the project beneficiaries knew well the project objectives and goals before the implementation of the project to a strongly agreement. The average of 4.99 and a standard deviation of 0.106 proven that the research respondents revealed that the project achieved results met the expected results to beneficiaries to a strongly agreement. The average scores of 4.94 and a standard deviation of 0.232 explained that the research informants agreed that MICS responded the customers' needs to a strongly agreement and the mean of 4.96 and a standard deviation of 0.208 show that the informants emphasized on the good quality leads to the quality service to beneficiaries to a strongly agreement. Therefore, since the overall mean is 4.92, it implies that the majority of research respondents concluded that quality planning has contributed significantly to the performance of Manufacturing Institutional Cooking Stove for National School Feeding project.

Table 10: Correlation Analysis between quality Planning and Project Performance

| | | Scope performance | Cost performance | Schedule performance | Quality performance |
|------------------|---------------------|-------------------|------------------|----------------------|---------------------|
| Quality planning | Pearson Correlation | .396** | .480** | .451** | .703** |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 |
| | N | 89 | 89 | 89 | 89 |

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Primary data, 2023

The results presented in the Table 10 expressed that there is considerable and strong correlation between quality planning and scope performance ($r=0.396$ and $\text{sig}=0.000$), between quality planning and cost performance ($r=0.480$ and $\text{sig}=0.000$), between quality planning and schedule performance ($r=0.451$ and $\text{sig}=0.000$) and between quality planning and quality performance ($r=0.703$ and $\text{sig}=0.000$) at 0.01 significant level. Therefore, this demonstrates that quality planning plays considerable, moderate and significant contribution to the performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 11: Analysis of variance (ANOVA) of project planning and scope performance

| Model | Sum of Squares | df | Mean Square | F | Sig. |
|------------|----------------|----|-------------|---------|-------------------|
| Regression | 4.929 | 4 | 1.232 | 155.258 | .000 ^a |
| Residual | .667 | 84 | .008 | | |
| Total | 5.596 | 88 | | | |

- a. Predictors: (Constant), scope planning, budget planning, schedule planning, quality planning
- b. Dependent Variable: Scope performance

Source: primary data, 2023

The results from the Table 11 show the sum of square on regression of 4.929, on residual of 0.667 and the total of 5.596, the degree of freedom is 4 for regression, 84 for the residual and 88 for the total, the mean square of 1.232 for regression and 0.008 for residual, the F value of 155.258 and significance level of 0.000 which is under 0.05. Therefore, since the calculated significant level is $0.000 < 0.05$, it implies that project planning had a positive and considerable contribution to scope performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 12: Coefficients of project planning and scope performance

| Model | Unstandardized Coefficients | | Standardized Coefficients | | Sig. |
|-------------------|-----------------------------|------------|---------------------------|--------|-------|
| | B | Std. Error | Beta | t | |
| (Constant) | 5.000 | .498 | | 10.038 | .000 |
| Scope planning | .333 | .068 | .448 | 4.899 | .000 |
| Schedule planning | 1.660 | .046 | .000 | .000 | 1.000 |
| Budget planning | .667 | .068 | .777 | 9.798 | .000 |
| Quality planning | -1.000 | .126 | -.420 | -7.912 | .000 |

a. Dependent Variable: Scope performance

Source: Primary data, 2023

According to Table 12 ‘s findings, there is a favorable, moderate and significant correlation between scope planning and scope performance (b=0.333 and sig=0.000), between schedule planning and scope performance (b=1.660 and sig=0.000), and positive, strong and significant relationship between budget planning and scope performance (b=0.667 and sig=1.000) and between quality planning and scope performance (b=-1.000 and sig=0.000). The formula for regression analysis used was the following:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Y= project performance

β_0 = Constant

β_1 - β_4 = Model of coefficients

X₁=Scope planning

X₂= budget planning

X₃= schedule planning

X₄= quality planning

ε =Random error assumed as normally distributed

The regression model of $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ becomes scope performance which is equal to 5.000 plus 0.333 times scope planning plus 1.660 times schedule planning plus 0.667 times budget planning plus -1.000 times quality planning. Therefore, the project planning had a favorable impact to scope performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 13: Model summary of project planning and cost performance

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .949 ^a | .901 | .896 | .134 |

a. Predictors: (Constant), scope planning, budget planning, schedule planning, quality planning

Source: Primary data, 2023

The outcomes from the Table 13 demonstrate a regression coefficient of 0.949, regression coefficients square of 0.901, adjusted regression square of 0.896 and a standard error of the estate of 0.134. Therefore, the measure of change in predictors of project planning such as scope planning, budget planning, schedule planning and quality planning affects 90.1% of progress of cost performance.

Table 14: Coefficients of project planning and cost performance

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 1.250 | .747 | | 1.673 | .098 |
| Scope planning | .250 | .102 | .204 | 2.449 | .016 |
| Schedule planning | .750 | .069 | .699 | 10.944 | .000 |
| Budget planning | .250 | .102 | .177 | 2.449 | .016 |
| Quality planning | -.500 | .190 | -.128 | -2.637 | .010 |

a. Dependent Variable: Cost performance

Source: Primary data, 2023

The findings from the Table 14 expresses that there is a correlation between scope planning and cost performance (b=0.250 and sig=0.016), between schedule planning and cost performance (b=0.750 and sig=0.000), between budget planning and cost performance (b=0.250 and sig=0.016) and between quality planning and cost performance (b=-0.500 and sig=0.010). The regression model of $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ becomes cost performance which is equal to 1.250 plus 0.250 times scope planning plus 0.750 times schedule planning plus 0.250 times budget planning plus -0.500 times quality planning. Therefore, this implies that project planning is an important factor on cost performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 15: Model Summary of Project Planning and Schedule Performance

| Mode | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|------|-------------------|----------|-------------------|----------------------------|
| 1 | .940 ^a | .883 | .877 | .154 |

a. Predictors: (Constant), scope planning, budget planning, schedule planning, quality planning

Source: Primary data, 2023

The findings from Table 15 illustrate the regression coefficient of 0.940, regression coefficients square of 0.883, adjusted regression square of 0.877 and a standard error of the estate of 0.154. Therefore, this implies that a unit of change in predictors of planning for project scope, budget, schedule and quality affects 88.3% of progress of schedule performance.

Table 18: Analysis of Variance (ANOVA) of project planning and schedule performance

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|---------|-------------------|
| 1 | Regression | 15.101 | 4 | 3.775 | 158.562 | .000 ^a |
| | Residual | 2.000 | 84 | .024 | | |
| | Total | 17.101 | 88 | | | |

a. Predictors: (Constant), scope planning, budget planning, schedule planning, quality planning

b. Dependent factor: Schedule performance

Source: Primary data, 2023

The results in the Table 16 indicate the sum of square on regression of 15.101, on residual of 2.000 and the total of 17.101, the degree of freedom is 4 for regression, 84 for the residual and 88 for the total, the mean square of 3.775 for regression and 0.024 for residual, the F value of 158.562 and significance level of 0.000 which is under 0.05. Therefore, it seems that the project planning has a positive and substantial impact because the degree of significance was $0.000 < 0.05$, it expressed that project planning plays a positive and significant contribution on schedule performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 16: Coefficients of project and schedule performance

| Model | Unstandardized Coefficients | | Standardized Coefficients | | Sig. |
|-------------------|-----------------------------|------------|---------------------------|--------|------|
| | B | Std. Error | Beta | T | |
| 1 (Constant) | 2.500 | .863 | | 2.898 | .005 |
| Scope planning | .500 | .118 | .384 | 4.243 | .000 |
| Schedule planning | .500 | .079 | .438 | 6.319 | .000 |
| Budget planning | .500 | .118 | .333 | 4.243 | .000 |
| Quality planning | -1.000 | .219 | -.240 | -4.568 | .000 |

a. Dependent Variable: Schedule performance

Source: Primary data, 2023

The outcomes in the Table 16 expresses that there is a favorable and correlation between scope planning and schedule performance ($b=0.500$ and $sig=0.000$), between schedule planning and schedule performance ($b=0.500$ and $sig=0.000$), between budget planning and schedule performance ($b=0.500$ and $sig=0.000$) and between quality planning and schedule performance ($b=-1.000$ and $sig=0.000$). The regression model of $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ becomes schedule performance which is equal to 2.500 plus 0.500 times scope planning plus

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0.500 times schedule planning plus 0.500 times budget planning plus -1.000 times quality planning. Therefore, this confirms that project planning has a considerable effect to schedule performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 17: Model summary of project planning and quality planning

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .785 ^a | .616 | .598 | .094 |

a. Predictors: (Constant), scope planning, budget planning, schedule planning, quality planning

Source: Primary data, 2023

The findings from the Table 17 demonstrate a regression coefficient of 0.785, regression coefficients square of 0.616, adjusted regression square of 0.598 and a standard error of the estate of 0.094. Therefore, the measure of change in predictors of project planning such as scope, budget, schedule and quality affect 61.6% of progress of quality performance.

Table 18: Analysis of Variance (ANOVA) of Project Planning and quality Performance

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|-------------------|
| 1 | Regression | 1.205 | 4 | .301 | 33.742 | .000 ^a |
| | Residual | .750 | 84 | .009 | | |
| | Total | 1.955 | 88 | | | |

a. Predictors: (Constant), scope planning, budget planning, schedule planning, quality planning

b. Dependent Variable: Quality performance

Source: Primary data, 2023

The results from Table 18 indicate the sum of square on regression of 1.205, on residual of 0.750 and the total of 1.955, the degree of freedom is 4 for regression, 84 for the residual and 88 for the total, the mean square of 0.301 for regression and 0.009 for residual, the F value of 33.742 and significant level of 0.000 which is under 0.05. Therefore, there is a strong level significance as the calculated significance of 0.000 is less than 0.005 ($0.000 < 0.05$), it expresses that project planning has a substantial and considerable contribution on quality performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Table 19: Coefficients of Project Planning and quality Performance

| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|-------|-------------------|-----------------------------|------------|---------------------------|-------|-------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.250 | .528 | | 2.366 | .020 |
| | Scope planning | 7.170 | .072 | .000 | .000 | 1.000 |
| | Schedule planning | -7.092 | .048 | .000 | .000 | 1.000 |
| | Budget planning | .250 | .072 | .493 | 3.464 | .001 |
| | Quality planning | .500 | .134 | .356 | 3.730 | .000 |

a. Dependent Variable: Quality performance

Source: Primary data, 2023

The findings from Table 19 expresses that there is a favorable impact of scope planning to quality performance as (b=7.170 and sig=1.000), between schedule planning and quality performance as (b=-7092 and sig=1.000), and between budget planning and quality performance (b=0.250 and sig=0.001) and between quality planning and quality performance (b=0.500 and sig=0.000). The regression model of $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$ becomes quality performance which is equal to 1.500 plus 7.170 times scope planning plus -7.092 times schedule planning plus 0.250 times budget planning plus 0.500 times quality planning. Therefore, this implies that project planning has a significant effect on quality performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

vii. Discussion

The analysis of research findings was carried out using of descriptive methods including tabulation, mean, standard deviation and correlation. The research ended by verifying the research hypotheses and found that all of them are accepted. Thus, the research findings concluded that there was a good project planning leading to performance of manufacturing institutional cooking stoves project.

Scope planning and Project Performance

Investigating how project scope planning affected the manufacturing institutional cooking stoves project's performance was the first goal of this research. According to the research findings from the field, the overall mean is 4.92, the average of 4.90 and a normative deviation of 0.339 show that the big number of research respondents confirmed that the smart scope definition leads to the successful implementation of the project to a strongly agreement, a mean of 4.87 and the normative deviation of 0.431 express that the big number of research informants concluded that the schedule of activities leads to project performance to a strongly agreement. The mean of 4.91 and a standard deviation of 0.358 shows that a big number of research respondents confirmed that the project budget planning leads to project performance to a strongly agreement, a mean of 4.96 and a standard deviation of 0.208 show that a big number of respondents concluded that the project inputs planning in terms of personnel, time frame, communication, materials acquisition and quality promotes project performance to a strongly agreement. Finally, the mean of 4.98 and a standard deviation of 0.149 show that a big number of respondents highlighted designing project

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stakeholders leads to project performance to a strongly agreement. Therefore, it implies that a big number of respondents confirmed project scope planning contributed with a fantastic important part on performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Time management and Project Performance

The second objective was to examine the influence of project scheduling planning on project performance of MICS. The findings confirmed that the overall mean is 4.66, the mean of 4.35 and a standard deviation of 0.546 expresses a big number of research respondents confirmed that activity resource estimation defines project performance to a strongly agreement, a mean of 4.85 and a standard deviation of 0.386 explain that a big number of research respondents concluded that activity duration estimation promotes project performance to a strongly agreement.

The mean of 4.98 and a standard deviation of 0.149 express that a big number of research respondents confirmed that defining a project outputs schedule enhance project performance to a strongly agreement, a mean of 4.69 and a standard deviation of 0.535 express that a big number of informants revealed that delivery of activities on time promotes project performance to a strongly agreement while a mean of 4.43 and a standard deviation of 0.582 show that a big number of research informants highlighted that defining time of project activities implementation promotes timely performance to a strongly agreement. Hence, the research findings concluded that shows that a big number of research respondents strongly agreed that schedule planning plays an important and favorable impact on the performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Cost planning and project performance

A third objective was assessing the influence of project cost planning to performance of manufacturing cooling stoves project. The findings highlighted that the budget estimation during the implementation of MICS project was linked to effective allocation of fund to different project tasks as confirmed by an average of 4.93 and a standard deviation of 0.294. The research findings concluded that a mean of 4.94 and a standard deviation of 0.232 imply that a big number of research informants highlighted that the budget allocation was flexible enough to the successful execution process of project at strongly agreement.

The mean of 4.99 and standard deviation of 0.106 show that a majority of research respondents revealed that periodical budget monitoring which is used to compare spending to the budget enhances project performance to a strongly agreement whereas a mean of 1.43 and a standard deviation of 0.541 expressed that little number of research respondents concluded the project budget was used as planned to a disagreement. Therefore, the overall mean of 4.07 confirmed that a big number of respondents strongly agreed that cost planning play a significant role on performance of Manufacturing Institutional Cooking Stove for National School Feeding programme.

Quality planning and project performance

Assessing the influence of quality planning on project performance of MICS was the fourth objective of this study. The good quality project planning led to the quality service to beneficiaries as confirmed with the overall mean of 4.92 which explains that the majority of research

respondents concluded that quality planning has a crucial and beneficial impacts on performance of Manufacturing Institutional Cooking Stove project for National School Feeding programme. The research demonstrated the mean of 4.85 and standard deviation of 0.414 showing that the research respondents highlighted that project beneficiaries were involved in the project implementation of MICS to a strongly agreement, the mean of 4.88 and standard deviation of 0.331 show that the research informants confirmed that the project beneficiaries knew well the project objectives and goals before the implementation of the project to a strongly agreement. The mean of 4.99 and a standard deviation of 0.106 proven that the research infomants revealed that the project achieved results met the expected results to beneficiaries to a strongly agreement.

The mean scores of 4.94 and a standard deviation of 0.232 explained that the informants concluded that MICS responded the customers' needs to a strongly agreement and the mean of 4.96 and a standard deviation of 0.208 show that the informants emphasized on the good quality leads to the quality service to beneficiaries to a strongly agreement. This means that the provided cooking stoves met the planned size, energy efficiency rate and low smoke production in the atmosphere.

viii. Conclusion

The findings on the first research objective concerned with how project scope planning influenced the performance of manufacturing institutional cooking stoves as indicated that there is a big number of research informants confirmed that the scope planning contributed on performance of MICS. Besides that, the descriptive results of the second aim of the research is concerned with the influence of project scheduling planning on the performance of manufacturing institutional cooking stoves which pointed out that there is a large number of research respondents who have highlighted that the project scheduling planning have played a significant role on the project performance. These descriptive findings were supported by the correlation results, which confirmed that there was a strong, positive and significant relationship between project scheduling planning and performance of manufacturing cooking stoves for national school feeding programme.

The descriptive findings of the third research objective concerned with the influence of project cost planning on the performance of manufacturing institutional cooking stoves revealed that there is a big number of research informants who confirmed that the project cost planning plays a big role on the performance of MICS.

The research findings reported that the good project planning leads to the successful performance of project and urged that the manufacturing institutional cooking stoves for National school feeding programme have been successfully performed as planned in terms of scope and the quality of deliverables which led to the satisfaction of beneficiaries. But the project did not meet its plans in terms of budget and timeframe as they were a delay for implementation of project activities and the budget surplus due to COVID-19 worldwide pandemic associated factors. This implies that the planning did not consider unknown happenings that can affect projects and how to address them. Therefore, every planning exercise should put into consideration the unknown happenings that can affect the project execution and put in place the strategies to address them.

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