



**EFFECT OF PROJECT PLANNING ON SUCCESS OF POST-HARVEST HANDLING
AND STORAGE PROJECT IN GATSIBO DISTRICT, RWANDA**

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ABSTRACT

Agriculture constitutes an integral part of the economies of all African countries, as it contributes towards the achievement of major priorities in the continent which include among others the eradication of poverty and hunger, boosting intra-Africa trade and investments and sustainable resource and environmental management. Rwanda's agriculture like many other African countries, is largely dependent on smallholder farmers. The PHHS project, which lasted for four years, collaborated with private agriculture enterprises and processors to lower post-harvest losses through investment in postharvest infrastructure and process improvement, including crop conditioning, storage and processing. This research sought to assess the effect of project planning on success of post-harvest handling and storage project in

Gatsibo District. The study adopted both descriptive and correlational research designs. Questionnaires were issued to 315 respondents. This study stemmed on Agency Theory, Theory of Change and Stakeholder Engagement Theory. Descriptive and inferential statistics were used to analyze data. The findings revealed that there is positive and significant effect of project deliverables on project success of PHHS in Gatsibo District, ($\beta = 0.410$; $p\text{-value} < 5\%$), hence the first hypothesis was rejected. The study findings indicated that there is positive and insignificant effect of project scope on project success of PHHS in Gatsibo District ($\beta = 0.206$; $p\text{-value} > 5\%$), hence the second hypothesis was accepted. Thirdly, it was discovered that there is positive and significant effect of project resources on project

success of PHHS in Gatsibo District ($\beta = 0.425$; p -value $< 5\%$), hence the third hypothesis was rejected. Finally, it was shown that there is positive and significant effect of project communication on project success of PHHS in Gatsibo District ($\beta = 0.558$; p -value $< 5\%$). The study recommended that; public funded projects should not end at the life cycle of the project but should be sustained to ensure a long-term impact on the beneficiaries. Strong sustainable structures should be established for all the four components of the PHHS project in Gatsibo district which are storage facilities, market linkages, technology transfer strategy and Policies. Also, local leaders, that is Executive leaders, should be part of similar projects since these are same people that will always be in the communities even after the closure of the projects.

1.0 Background to the Study

The concept of project planning has its roots to the time when modern project management was invented in the late 19th Century. Though, major improvements in project planning were

seen at that time which particularly improved the project scheduling, allocation of different resources and management of project tasks and deliverables with addition of work breakdown structure (Young, 2003). In addition, the Gantt chart which was invented by Henry Gantt in early 20th Century became a key element in the interface of all modern project planning software like Primavera Project Management and Microsoft Project. Even communication got its pace during this era due to advanced telecommunication framework which made planning and success of projects more effective. Before the emergence of project planning or its history, organizations run on the basis of relationships, connections and trust that build over years (Agbemabiese, 2021).

In the United States (U.S), the first large project that required planning was the transcontinental railroad, which began construction in the early 1870s. Suddenly, business leaders were confronted with the difficult issue of managing the manual labor of thousands of employees and the manufacturing and assembly of unprecedented quantities of raw

material. It's not until the 1950s that organizations started to apply systematic project management tools and techniques to complex projects (Farías and Pimenta, 2019). The U.S. Navy greatly contributed to the formulation and documentation of principles of modern project management methodologies and techniques. This contributed to better methods of planning and success of upcoming projects.

In Sub Saharan Africa, an evaluation of a World Bank project, found out that during a ten-year period, activities carried out in an irrigation project funded in four countries that include Ethiopia, Kenya, Somalia and South Sudan shifted from a top-down government approach.

The Government of Rwanda together with the IFAD in pursuing a comprehensive poverty reduction program which includes development and implementation of various sustainable development projects (EDPRS II), enhanced the PHHS project primarily to reduce post-harvest losses and therefore increase value addition through processing of priority

Intensification Program Crops (CIP). Post-harvest losses are acknowledged as one of Rwanda's largest sources of agricultural production inefficiency and the most significant causes of poverty. Therefore, are the best-no-regrets opportunities for effectively improving crop productivity and resilience in more uncertain climatic and economic conditions. The project took an integrated public-private approach to reducing post-harvest losses and improving food security. Reducing post-harvest losses was expected to generate additional income and off-farm employment in activities such as product storing, processing, packaging and marketing (EDPRS II, 2013-2018).

Statement of the Problem

A success orientated project in the public sector means that achievement matter, as well as integrity and planning; and that managers or agencies should pursue defined standards of the project as planned at the start. Successful projects are those that meet the set goals, are delivered and maintained on schedule, within planned budget and deliver the

expected business value. Projects are generally conducted to meet specific objectives (Kafle, 2020). A project can only be successful if the success criteria were defined from the start. The worst type of failure occurs when the project fails to meet the development objectives. Organizations that are able to meet the criteria of success are characterized by the use and application of a consistent, repeatable and predictable methodology that supports the planning and implementation of development projects

Despite all the efforts of the Government of Rwanda, a number of challenges continue to exist in the agribusiness sector. For instance, in September 2009, the Government of Rwanda in partnership with USAID established Post-Harvest Handling and Storage (PHHS) project. According to MINAGRI (2018), with a budget of 8.3USD, the PHHS project's duration was 4 years, from September 2009 to August 2013, and its major goal was sought to increase food security in Rwanda by connecting farmers of staple crops with markets for their surplus supply. The PHHS project,

which lasted for four years, collaborated with private agriculture enterprises and processors to lower post-harvest losses through investment in postharvest infrastructure and process improvement, including crop conditioning, storage and processing. The PHHS project worked in partnership with private sector firms and Rwanda's Ministry of Agriculture.

However, almost 10 years since PHHS project was completed, various issues have been encountered across the country. According to MINAGRI (2023), on 19th February 2023, a maize drying shelter in Rukumberi sector, Ngoma District collapsed under unclear circumstances. It was reported that 20 people were injured following the incident. In addition, the tragedy in Ngoma District happened after a strong wind pushed another drying shelter onto the ground, killing 11 and seriously injuring nearly 40 others. The fatality took place in Gasagara Cell, Rusororo sector, Gasabo district, Kigali (MINAGRI, 2023). The collapse of PHHS constructed facilities could be related to poor project planning in areas like quality planning, resource planning and communication planning but to

mention a few. Further, there are other project planning deficiencies for the PHHS project especially with project deliverables, project scope, and project resources. In line with the above, according to Transparency International (2021), poor project planning has been the root cause of 62% of the failed projects in Rwanda. A project's success relies heavily on defining in detail the scope, each member's role, defining deliverables and the time frame and engaging stakeholders and beneficiaries of the project. Lack of concrete planning exposes a project to unprecedented risks and issues.

Specific Objectives

The specific objectives were the following:

- i. To evaluate the effect of project deliverables on the success of post-harvest handling and storage project in Gatsibo District;
- ii. To examine the effect of project scope on success of post-harvest handling and storage project in Gatsibo District;
- ii. To establish the effect of project resources on the success of post-harvest handling and storage project in Gatsibo District;

iv. To assess the effect of project communication on the success of post-harvest handling and storage project in Gatsibo District.

Research Hypotheses

H₀₁: There is no significant effect of project deliverables on the success of post-harvest handling and storage project in Gatsibo District;

H₀₂: There is no significant effect of project scope on the success of post-harvest handling and storage project in Gatsibo District;

H₀₃: There is no significant effect of project resources on the success of post-harvest handling and storage project in Gatsibo District;

H₀₄: There is no significant effect of project communication on the success of post-harvest handling and storage project in Gatsibo District.

Theoretical Review

This study stemmed primarily on three theories: Agency Theory, Theory of Change and Stakeholder Theory. These theories enhance understanding of behavioral aspects for effective and

effect of project planning and success of PHHS project and the public funded projects in general.

Agency Theory

Agency theory was developed by Jensen and Meckling in 1976. They suggested a theory of how the governance of a company is based on the conflicts of interest between the company's owners (shareholders), its managers and major providers of financial support. Agency theory is concerned with resolving problems that can exist in agency relationships; that is, between principals such as customers and agents of the principals (for example, public institutions and management).

Theory of Change

Theory of Change (ToC) was popularized by Carol Hirschon Weiss, an American scholar in her study in 1995. The theory is an approach to developing, implementing and evaluating projects of development, and has been applied across a wide range of programmatic contexts. Beginning in the 1990s with research conducted by the Aspen Institute Roundtable, who presented ToC as an approach to evaluating community development programs, the strategy evolved rather organically.

Stakeholder Engagement Theory

The theory has its origin in management literature to

great depression in USA. According to Freeman (1984) he traced by mentioning the word Stakeholder as back to research conducted by Stanford Research Institute (SRI) which define stakeholder as “those group without whose support the organization would cease to exist.” He also expands this notion by including any group or individual that can affect or affected by the achievement of the corporation purpose.

Research Design

This study adopted both descriptive and correlational research designs. In this case, the descriptive research design provided a clear demonstration on the impact between the variables under study whereas the correlational research design was adopted literally because the study has two quantitative variables from the same group of subjects and thus, the design particularly determined the correlation between planning and success of PHHS project in Gatsibo District.

Study Population

This study total population 1229 comprising 13 officials from the Ministry of Agriculture and Animal Resources

Sample Size

The total sample size was 315 respondents. In this study's table 3.2 as presented below indicates respondents' category, population size and the sample

size determined

Sampling Techniques

In this research, both convenience and universal sampling techniques were adopted. According to Krlinger (2017), convenience sampling is a non-probability sampling method where the units are chosen for consideration in the sample because they are easiest for researcher to access. Data Collection Instruments

Questionnaire

The study collected primary data mainly with the help of questionnaire whereby a self-administered questionnaire was developed and pre-tested prior to the full survey for achieving the objectives of the current study.

Piloting study

In carrying a pilot study, the researcher's intention was to evaluate research instruments' validity and reliability. These were tested as described in the below sections.

Data Processing

After collecting data, the researcher embarked on processing, analyzing and

interpreting the research data.

Data Analysis

The research data were analyzed using both descriptive statistics and inferential statistics.

Findings

The first hypothesis of this study stated that there is no significant effect of project deliverables on the success of post-harvest handling and storage project in Gatsibo District. As per the findings presented in table 4.14, there is positive and significant effect of project deliverables on project success of PHHS Project in Gatsibo District. Given ($\beta = 0.410$; t-test = 2.108; p-value ($0.013 < 5\%$), hence the first hypothesis was rejected. Project deliverables has significant effect on PHHS project success. This implies that a unit increase in project deliverables would lead to an increase in project success by a factor of 0.410.

The second hypothesis stated that there is no significant effect of project scope on success of post-harvest handling and storage project in Gatsibo District. The study findings showed

positive but insignificant effect of project scope on project success of PHHS Project in Gatsibo District. Given ($\beta = 0.206$; t-test = 1.779; p-value (0.067) > 5%), hence the second hypothesis was accepted.

Furthermore, the **third hypothesis** stated that there is no significant effect of project resources on success of post-harvest handling and storage project in Gatsibo District. From the presented findings, it was found that there is positive and significant effect of project resources on project success of PHHS Project in Gatsibo District ($\beta = 0.425$; t-test = 1.214; p-value (0.020) < 5%), hence the third hypothesis was rejected. Project resources has significant effect on PHHS project success. This implies that a unit increase in project resource will lead to an increase in project success by a factor of 0.425. Therefore, the researcher learnt that project resources significantly affected the success of PHHS Project in Gatsibo District. The study agrees with Ferreira and Souza (2018) in the study on effects of project resource planning practices on the performance of the Nigeria Omega Project in Lagos. Financial resource planning practices

have been identified to influence the performance of the project.

Finally, the **last hypothesis** stated that, there is no significant effect of project communication on the success of post-harvest handling and storage project in Gatsibo District. From the findings, it was discovered that there is positive and significant effect of project communication on project success of PHHS Project in Gatsibo District ($\beta = 0.558$; t-test = 1.724; p-value (0.000) < 5%), hence the last hypothesis was rejected. Project communication has significant effect on PHHS project success. This implies that a unit increase in project communication would lead to an increase in project success of PHHS Project in Gatsibo District by a factor of 0.558. Therefore, the researcher learnt that project communication significantly affected the success of PHHS Project in Gatsibo District.

Conclusion

Firstly, it was discovered that a unit increase in project deliverables would lead to an increase in project success by a factor of 0.410, and therefore, the researcher learnt that project

deliverables significantly affected the success of PHHS Project in Gatsibo District. Despite such significance of project deliverables, the researcher discovered gaps in project planning related to project deliverables management within the project implementation. Secondly, it was revealed that a unit increase in project scope would lead to an increase in project success by a factor of 0.206, but the researcher learnt that project scope insignificantly affected the success of PHHS in Gatsibo District. Thirdly, it was found out that a unit increase in project resource will lead to an increase in project success by a factor of 0.425, and therefore, the researcher learnt that project resources significantly affected the success of PHHS in Gatsibo District. However, the researcher discovered gaps in project planning related to PHHS project resources management. Lastly, it was revealed that a unit increase in project

communication will lead to an increase in project success by a factor of 0.558, and therefore, the researcher learnt that project communication significantly affected the success of PHHS Project in Gatsibo District. However, despite the significance of project communication, this study discovered loopholes in project communication planning and management processes.

Recommendations

The study recommended that; public funded projects should not end at the life cycle of the project but should be sustained to ensure a long-term impact on the beneficiaries. Strong sustainable structures should be established for all the four components of the PHHS project in Gatsibo district which are storage facilities, market linkages, technology transfer strategy and Policies enacted. Also, local leaders, that is executive leaders, should be part of similar projects since these are same people that will always be in the communities even after the closure of the projects.

REFERENCES

Aashish, S. J. (2019). *Use of E- Technology in the Project Planning: A Comparative Study of Public Sector and Private Sector Banks*, 1st edition, New Delhi: Cyclone Publishers.

Abor K., (2018). *The Project Planning services and Customer Services Management*: London: Dreamland Publishers.

Adera, O. B. (2013). *Influence of organizational project maturity practices on performance of state corporations. A case of South Nyanza sugar company limited* (Doctoral dissertation, University of Nairobi).

Altonen K, et al., (2018). *The Project Planning services and Customer Services Management*: London: Dreamland Publishers.

Agbemabiese, M. (2021). *Project Planning services and the Federal Government: An Introduction*", Report from the Congressional Research Service. New Delhi: Cyclone Publishers.

Antvik, A.O, Sjöholm, K.F, (2010). Identification and Evaluation of Factors Influencing Variations on Building Projects. *International Journal of Project Management*.

Attril, L. (2016). *Modern Project Management and Performance in the Public Sector: Testing a Mediation Model.*" *International Journal of Human Resource Management*.

Barahona, L & Elizondo, M. (2020). *Project Planning in the Cashless policy*, New Delhi: MC grow. Hill publishing company.

Beuningen, K, Van J. & H. Schmeets (2018) *Financial Payment Modes Policy and Public Finance Systems*, 2nd edition, New Dheli: Prentice hall.

Bjork L. (2019). *Best Practices in electronic public finance management*. 1st edition, London: Routledge.

Bonnie Biafore (2023). *Digital agendas in the Public Projects: The Importance Of Comprehensive Approaches*. Springer Science Business Media.

Booyesen, M. (2019). *Investment Analysis and Integrated Financial Management*, New Delhi: MC grow. Hill publishing company.