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AN ANALYSIS OF THE CAUSES OF FAILURE OF GOVERNMENT PROJECTS IN RWANDA: A CASE OF ONE LAPTOP PER CHILD IN MUSANZE DISTRICT

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ABSTRACT

Technology and globalization is fundamentally changing the role of the nation-state, making governments both larger and smaller. Rwanda, a small, landlocked country in central Africa, has the fastest-growing OLPC project in Africa, planning to double as stipulated in its Vision 2020. The general objective of this study was to investigate the causes of failures of One Laptop Per Child as one of the Rwandan Government projects in Musanze district from 2018 to 2020 and find out the challenges of One laptop Per Child implementation. The specific objectives of this research were: To examine the effect of Poor management of the project on the failure of One Laptop Per Child project in Rwanda; To establish the effect of Inadequate quality of the product on the failure of One Laptop Per Child project in Rwanda and To evaluate the effect of Inadequate distribution on the failure of One Laptop Per Child project in Rwanda. stakeholder theory and Resource-Based View (RBV) Theory was used in this research. This study adopted a convergent or parallel or concurrent mixed methods design. After using Yamane formula of sample determination and got the above results and the researcher was obliged to use a sample of 164 informants including 42 head teachers, 122 teachers from the public primary schools of Musanze District. Random sampling method was employed when selecting respondents. This study used questionnaire, interview in collecting primary data and document analysis in collecting secondary data. The researcher evaluated the mean by using these equivalences. The model that was used in this study is Khi-square test distribution, this facilitated to verify the possible relationship between two categorical variables. From this the researcher find the following: According to table no. 16, the information given above reveals that beta = 0.811, p values were 0.000, and t was 9.911. To summarize, the researcher maintained the positive hypothesis and found that Poor management of the project affects the failure of One Laptop Per child project since the p value was less than 0.05.The information presented above reveals that beta = 0.706, p values were 0.000, and t was 5.148 while analyzing table no.17. Overall, the researcher maintained the positive hypothesis and found that inadequate quality of the product influences the failure of One laptop per child project in Rwanda since the p value was less than 0.05. According to table no. 18, the information given reveals beta = 0.631, p values of 0.000, and t of 9.630. To summarize, the researcher maintained the positive hypothesis and found that inadequate distribution influences the failure of One Laptop Per Child since the p value was less than 0.05. The Pearson Chi-Square resulted with a value 46.028, the p value was 0.000 indicated that the two variables had a relationship since the asympt. Sig. values was less than 0.05. poor management of the project does, in fact, lead to failure of One Laptop Per Child project, as evidenced by the p value in the results. As a result, the researcher confirmed that one variable affect another and this relationship was significant and understandable. The researcher conclude by recommending the following: In fact, there is lack of risk assessment in most of

public institutions including schools. Since every project involve risks, the government need to consider employing professionals who knows much more about risk assessment while conducting any project that will affect the general public. Together with poor communication and lack of planning in government institutions, hiring these professional will enable government to track the progress of its projects and project the durability of the project. Government will need to increase the level of monitoring its projects so as to minimize the risk of corruption while distributing its services. Once the project involve corruption, there is a higher risk of failing and could not produce the desired results. Government need to sensitize people about the use of collaborating with authorities to distribute common interests and participate in promoting general wellbeing of the people. By doing this, the government will be able to distribute equally the services that must be accessible by every citizen as well.

INTRODUCTION TO THE STUDY

Long before conceptualizing the One Laptop Per Child (OLPC) project, Negroponte (1995) set forth a philosophy which saw the digital revolution as being problematic, yet inevitable. According to him, technology and globalization will fundamentally change the role of the nation-state, making governments both larger and smaller. The digital age, as a force of nature, is no longer a project of the future. It is almost genetic in its nature, in that each generation will become more digital than the preceding one. Negroponte sees technology as having social and political issues but is ultimately optimistic about coordinated efforts by technologists to create solutions for the least developing countries (UN DESA, 2013).

This can be seen in the mission statement of OLPC that stipulate a laptop for primary school children in the developing countries. It was based on Negroponte's previous projects with other researchers at MIT, which supplied schools with computers. A laptop which was created not to be big, heavy, fragile, ugly, dangerous, or dull. It is from this concept that the XO computer, kid-sized, has rounded edges and contains no hazardous materials and contains no moving parts which can be damaged in transport or use.

Rwanda, a small, landlocked country in central Africa, has the fastest-growing OLPC project in Africa, planning to double as stipulated in its Vision 2020, a document published by the Government of Rwanda in July of 2000, outlined plans for the nation to move from the humanitarian assistance phase associated with the 1994 genocide into one of sustainable development to become a middle-income country by the year 2020. A pillar of the nation's plans to accomplish this task is to move from an agricultural to a knowledge and technology-based economy. The country's situation made it difficult for the citizens of the nation to access basic infrastructure electricity, water and social services including primary health care and education.

In June 2005, the World Bank received a request from the government of Rwanda to fund what became known as the e Rwanda project that focused on the core activities in which included developing government networks, eGovernment platform and eGovernment applications, strengthening public service delivery to the citizens, and increasing ICT skills and awareness. However, most personal computers and related equipment were donated. Maintenance and support of the equipment was difficult because many different operating system models existed in the same workspace. Also, there were no standards for system interoperability or application development (Government of Rwanda, 2020).

ii

Aligned with Vision 2020, a five-year implementation plan called National Information and Communication Infrastructure (NICI) plans was established for ICT development in Rwanda and executed between 2000 and 2005. At the end of the NICI, the Government of Rwanda noted several shortcomings, including a lack of infrastructure to support the envisioned activities, a lack of human resources to lead and implement the activities, and a general lack of ICT awareness and understanding.

It is in this perspective that OLPC was framed as an educational opportunity for the children by providing each child with a rugged, low-cost, low-power, connected laptop with content and software designed for collaborative, joyful, self-empowered learning (Mission Statement OLPC, 2009). However, the history of the program was fraught with challenges, setbacks, and limitations. Reflecting on the XO laptop was manufactured and deployed in the developing countries, a variety of criticism was levelled at the project, directed both at the hardware itself and the strategies of distributing laptops to children.

Rwanda's long-term vision includes access for all to the web. From 2007, thousands of laptops were donated to Rwanda. This launched a program that today has provided a great number of laptops to children and teachers across the country. Furthermore, the government had recognized the use of ICT in public sector as a means to improve government transparency, efficiency, operations effectiveness, and public service delivery to citizens. From this perspective in alignment with Vision 2020 and NICI II, the eRwanda project supported the World Bank's Rwanda Country Assistance Strategy (CAS) themes, the 2002 CAS was prepared and supported broadly for four themes by known as developing eGovernment applications and connecting government institutions to one another through a government wide network, providing ICT training for government officials and citizens so that they could use their benefits, rolling out telecentres in ICT to strengthen public information service delivery to rural people and raise awareness on the new ICT services made available (Richard, 2014, & World Bank, 2011).

In addition, the Government of Rwanda established two new government agencies responsible for the ICT sector: in 2001, the Rwanda Utilities Regulatory Agency (RURA), a multisector regulator, was established to regulate the country's electricity, gas, transport, water, and telecommunication markets; and in 2004, the Rwanda Information Technology Authority (RITA), which operated under the Ministry of Infrastructure (MINIFRA), was established to coordinate ICT related investments and national ICT projects in Rwanda (World Bank, 2011).

1.1 Statement of the Problem

One laptop per child is one of the government projects which is reflected as one of important tools in the promotion of quality education by improving learners' academic performance in all schools. Therefore, one of the key roles of education is to help a country achieve its mission and vision. For example, as stated in the mission statement of the Government of Rwanda, the global goal of the Government of Rwanda is to reduce poverty and in turn to improve the well-being of its population. Then, the role of education in this is to combat ignorance and illiteracy and to provide human resources useful for the socio-economic development of Rwanda through the education system (MINEDUC, 2010). Thus, education constitutes a corner stone for the achievement of Rwandan government mission.

The government of Rwanda invested a lot of money in OLPC in order to help them develop and achieve their goals that are determined through their planning. One of the goals of secondary school is to boost learners' academic performance by investing some money into the actions aiming at improving students' academic performance (MINEDUC, 2010).

iii

It was once touted as one of the projects that would set Rwanda on track to become a continental ICT hub but 10 years down the road the One Laptop per Child (OLPC) project raises questions regarding its success and sustainability. With no tangible results to show, the Auditor-General is raising a red flag that if the implementation of the project which was aimed at equipping primary school going children with computers, is not looked into; its objectives might not be achieved. Over the past two years, questions have emerged on the impact of the over 250,000 OX laptops distributed in schools around the country. While presenting the 2015 annual report, the Auditor-General Obadiah Biraro singled out the OLPC as one of the projects government has heavily invested in but a big number of computers remain unused and are gathering dust on school shelves. "We visited about 20 schools and found about 1,425 worth about Rwf203 million which are not working. They are in storage and we classify these as idle assets. There is no value for money," Mr Biraro told MPs. According to the AG's report, there have been persistent weaknesses in the implementation of the programme which once put Rwanda on the global map among the countries raising computer-literate children (The East African, Rwanda Education Board on the spot over school laptop project, 2016).

Indeed, one wonders why learners perform badly in some schools although the government spent a lot of money so as to boost learners' academic performance. Likewise, one wonders why some children fail to implement and realize their computer-based potentials successfully and whether this affects their performance at large as intended in by present research analysing the causes of failure of One Laptop Per Child in Musanze district.

1.2 Purpose of the study
Rwanda, like other African countries, is making effort to harness the potential of information communication and technologies, especially in the educational sector. But there are some barriers that are evolving in this good planning. This is why I choose to conduct my research on the causes of failure of One Laptop Per Child project in order to highlight the challenges that the project may face that made it to its failure.

1.3 Objectives of the study
1.3.1 General Objective
The general objective of this study was to investigate the causes of failures of One Laptop Per Child as one of the Rwandan Government projects in Musanze district from 2018 to 2020 and find out the challenges of One laptop Per Child implementation.

1.3.2 Specific objectives
This study was guided by the following specific objectives:

1. To examine the effect of Poor management of the project on the failure of One Laptop Per Child project in Rwanda.
2. To establish the effect of Inadequate quality of the product on the failure of One Laptop Per Child project in Rwanda.
3. To evaluate the effect of Inadequate distribution on the failure of One Laptop Per Child project in Rwanda.

1.4 Research questions
This study was guided by the following research questions:

1. To what extend does Poor management of the project effect the failure of One Laptop Per Child project in Rwanda?
2. How does Inadequate quality contribute on the failure of One Laptop Per Child project in Rwanda?

iv

3. What is the contribution of Inadequate distribution on the failure of One Laptop Per Child project in Rwanda?

LITERATURE REVIEW

2.1 Concept of Variables
A variable represents a measurable attribute that changes or varies across the experiment whether comparing results between multiple groups, multiple people or even when using a single person in an experiment conducted over time.

2.1.1. One Laptop Per Child Project
One Laptop Per Child is a non-profit foundation established in 2005 where the project unveiled an idea so innovative that it had the potential of improving the lives of millions of people in developing countries around the world and stimulate grassroots initiatives to enhance and sustain over time the effectiveness of laptops as learning tools for children living in lesser-developed countries. This mission grew out of the experience and priorities of the foundation's chairman, Professor Nicholas Negroponte. In 1982 he had collaborated with a colleague, Seymour Papert, and with the French government to introduce Apple II computers and the programming language in Senegal.

2.1.2. Failure of Project Management
Reflecting on the one laptop per child project management was conceived in a way that some developing countries are indeed deploying OLPC laptops, others have cancelled planned deployments or are waiting on the results of pilot projects before deciding whether to acquire them in numbers. Meanwhile, the OLPC organization struggles with key staff defections, budget cuts, and ideological disillusionment, as it appears to some that the educational mission has given way to just getting laptops out the door. Later, the OLPC plan was to rely on governments to buy its machines, provide distribution and support, train teachers to use and maintain them, and even sponsor development of local-language software.

This component provided financial and technical support for the government to establish the project Management unit to facilitate the implementation of the project activities, and to strengthen monitoring and evaluation capacity for better project management. In addition to the operational costs for the project, e-Rwanda supported the project staff training.

2.2. Theoretical Review
The philosophy of OLPC is based on theorists such as Seymour Papert (1991), who argued that technology can provide new ways of learning through learner-centred experimentation. Borrowing from Piaget's constructivism (Wadsworth, 1996), Papert developed a theory, which he termed constructionism, where students use open-ended tools, most notably computers or construction kits, to drive their learning. Papert further differentiates his model from what he calls instructivism, where students are taught how scientists do science rather than performing it themselves. In this respect, the theory behind OLPC is not far removed from the ethos of Sugata Mitra, who placed lone outdoor internet kiosks in India in order to promote teacher-less self-learning among local children (Mitra & Rana, 2001). However, according to James (2010), a completely teacher less world is a difficult environment to imagine, particularly in Africa, where the dominant goal has been to recruit and train more teachers, not to reduce their role in education.

2.2.1. Stakeholder Theory

In this study and others that have been reviewed in this section, stakeholder theory is approached from a project management perspective. In the past, stakeholder theory was rarely used in project management research. However, growing research into the subject matter in recent years as a result of writers becoming more aware of the various stakeholders associated with projects has seen extant research being carried out using stakeholder theory. In fact, in the past decade, research into project management and project failure has been conducted using stakeholder theory (e.g. Saebo et al., 2011; Axelsson et al., 2012). In line with these prior studies, this study therefore adopts stakeholder theory as the principal underlying theory. Specifically, this study uses stakeholder theory to analyze the various stakeholders associated with Rwandan government projects. Like most government projects, the Rwandan government's projects have a strong stakeholder base and as such this theory captures all stakeholders in under this study. However, other theories were considered before the choice of stakeholder theory was made.

2.2.2. Resource-Based View Theory

The next theory considered is Resource-Based View (RBV) Theory. RBV is a strategic management theory that is widely used by managers in project management (Almarrim & Gardiner, 2014). It argues that resources are rare; however, they are the main drivers of competitive advantage, especially in project management capabilities (Almarrim & Gardiner, 2014).

RBV argues further that firms have a competitive advantage over other firms and this is dependent upon the resources that those firms have, which are rare, inimitable and non-sustainable, and as such ability to have these can influence a firm's competitive advantage (Wu, 2010; Killen et al., 2012; Almarrim & Gardiner, 2014; Ghapanchi et al., 2014). Thus, competitive advantage and firm performance are strongly influenced by the firm's resources: there is a strong link between resources and a firm's performance and competitive advantage (Ghapanchi et al., 2014). In other words, resources that are available to firms are scarce, especially a firm's resources in the form of capabilities, and as such the ability to have sustained resources and capabilities gives the firm a competitive advantage and good performance. In a nutshell, RBV holds the view that resources are inevitable if a firm wants to have a competitive advantage or good performance. In project management, performing organisations develop certain capabilities (human resources) which are difficult to imitate and this is directly associated with performance; this gives them competitive advantage (Almarrim & Gardiner, 2014). These resources are both tangible and intangible (Killen et al., 2012; Almarrim & Gardiner, 2014).

2.3. Empirical review

This session is all about the findings from different studies about One Laptop Per Child project all over the world. This section also reviews the literature related to causes of failure of OLPC project in different dimensions (Tabb, & Linda Smith, 2008). In the same perspective, this session, presents differences and similarities in the findings of the studies as well as the researcher's view on the findings. Furthermore, the content of this section is based on the objectives of the study as clearly stated in the first chapter.

2.3.1. Inadequate quality of the product and Failure of one laptop per child project

Bolton and Drew (1991) defined customers' service quality as the difference between the actual service performance and their expectations. Similarly, Oliver (1980) characterized perceived service quality as the degree and direction of discrepancy between customers' perceptions and expectations.

Service quality has widely been discussed since 20th century and its idea is still relevant to help today organizations in creating differentiation and gaining competitive advantage in an era of borderless world and globalization (Ali et al. 2016). In a quality management literature, service quality is often seen as a multi-dimensional construct.

2.3.2. Poor management of the project and Failure of one laptop per child project

Undeniably, a sound knowledge and application of project management significantly improve project success rates. However, government projects suffer from failure as a result of poor project management practices. For example, a study conducted by Olateju et al. (2011) on project management practice in the Nigerian public sector showed a lack of core knowledge of project management tools such as Gantt charts among project professionals.

According to literature, project planning, control and monitoring is extremely important in order to execute successful projects (Adebayo et al., 2018). Lack of skillful planning, estimation and scheduling in the implementation of projects has been established to cause significant failure in projects across countries.

2.3.3. Inadequate distribution and Failure of one laptop per child project

As a result, the OLPC foundation failed to achieve its expected sale of 150 million laptops by the end of 2007. By 2009, only a few hundred thousand laptops had been shipped to the developing nations. Today, the OLPC initiative is often cited by critics as a failure (World Bank, 2011). However, instead of dismissing the laptops as disappointments, it is important to examine the cause of their decline. This understanding can prevent impediments in the future when trying to implement some other form of information and communication technology in developing nations. Careful analysis about the culture and necessities of the children needs to be done in the countries before shipping the laptops. Laptops need to be customized to local traditions and customs, so that they are appropriate in their new context.

RESEARCH METHODOLOGY

3.1 Research Design

As it had been highlighted by Burns and Grove (2003:195) define a research design as a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings. Parahoo (1997) describes a research design as a plan that describes how, when and where data are to be collected and analyzed. Polit et al (cited in Osano, 2013) define a research design as the researcher's overall for answering the research question.

This study adopted a convergent or parallel or concurrent mixed methods design. According to Creswell (2012), this research design consists of simultaneously collecting both quantitative and qualitative data, merge the data, and use the results to understand a research problem. The author states that a basic rationale for this design is that one data collection form supplies strengths to offset the weaknesses of the other form, and that a more complete understanding of a research problem results from collecting both quantitative and qualitative data.

3.2. Sampling design

Ngechu (2004) highlights the importance of choosing a representative sample by use of a sampling frame. From the sampling frame, the required number of subjects, respondents, elements or firms is selected in order to make a sample. This section of the research presents the population of research, sample size determination and sampling technique.

3.2.1. Research Population

A population is the complete collection of all the elements that are of interest in a particular investigation. The present study was carried out in public primary schools of Musanze district of whom the project was designed for. The target population of this research was made up of public primary school headmasters and teachers from Musanze District. Indeed, Musanze District has got 42 public primary schools with which this study intends to work with as the population of this research. Therefore, Slovin's formula helped the researcher to get the sample size of the total population as described in the following paragraphs.

3.2.2. Sample Size

Kothari (2004) defined a sample size as a small group of cases drawn from and used to represent the large group or whole population under investigation.

Concerning the sample, this study used a sample of 42 Headmasters and 1500 teachers from Musanze District in Public Institutions. This sample was determined using Yamane formula of sample calculation cited by Mark Kasunic (2005). The formula assumes a 95% confidence level and the maximum variance (p = 0.5).

The formula is $N = \frac{n}{1+n(0.05)^2}$

Where: n   is the Population size, N   is the Sample size, e   specifies the desired level of precision, where precision e = 1- precision, p = 0.95

In this study, n is equal to 1,542, e (margin of error) =1-0.95 = 0.05

n=1,542/1+1,542 (0.05)²= **164**

3.2.3. Sampling technique

Kothari (2004), defines sample technique as a definite plan for obtaining a sample from a given population. In other words, it refers to the technique or the procedure the researcher would adopt in selecting items for the sample. According De Vaus (2002), sampling is the process of selecting a number of individuals for a study in such a way that the individuals represent the larger group from which they were selected. Conclusion about population is drawn from the sample using inferential statistics which enables to determine a population's characteristics by directly observing only a portion of the population.

In this study, random sampling method was employed. As recommended by Salant &Dillman, (1994), the researchers picked a subgroup from a larger group and then used this subgroup as a basis for making inferences about the larger group. The sample was drawn from a population that was composed by primary head teachers, teachers from Musanze district.

3.3. Data collection procedures

Kabir (2018) defines data collection as the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes. The author notes that the goal for all data collection is to capture quality evidence that then translates to rich data analysis and allows the building of a convincing and credible answer to questions that have been posed. According to Abawi (2017), accurate and systematic data collection is critical to conducting scientific research. The author notes further that data collection allows us to collect information that we want to collect about our study participants.

viii

3.4. Validity of the Research Instrument

Validity refers to the appropriateness of the instruments while reliability refers to its consistency in measuring whatever it is intended to measure. The researcher needs to describe how he intends to establish the validity of the research instrument before using them. In testing the questionnaire's validity, the researcher was aiming to find out whether she could "draw meaningful and useful inferences from scores on the instrument" (Creswell 2003).

3.5. Reliability of the Research Instrument

Cohen, Manion and Morison (2000) mentioned that for a research instrument to be reliable, it must demonstrate that if it was carried out on a similar group of respondents in a similar context then similar results would be found. The reliability test for the research instrument in this research was conducted using Cronbach's alpha test. According to this test, a research instrument is said to be reliable if the alpha test is 0.7 or more.

3.6. Data analysis

It has been stated that data analysis is the process of bringing order, structure and meaning to the mass of collected data. They add that the purpose of this process is to reduce data to an intelligible and interpretable form so that the research problems can be studied and draw conclusions (De Vos et al. ,2002). Since the research design was mainly quantitative, the primary data collected was analyzed quantitatively by use of various ways, namely tables and graphs, was used to present the results of primary data. Qualitative data was analyzed using thematic analysis.

3.7. Ethical Considerations

The researcher, in order to ensure confidentiality of the information provided by the respondents and to ascertain the practice of ethics in this study, implemented the following steps: The researcher requested for data collection authorization from University of Kigali. The letter was presented to the managers of the sampled public primary schools in order to be allowed to collect data from the respective respondents. All the collected data was used for academic purposes only. The respondents' names were kept anonymous in the questionnaires and in the thesis to respect their privacy. Thus, only codes were used instead of the names of the schools. The researcher followed the informed-consent rules in order to ensure that individuals voluntarily participate in the research with full knowledge of relevant risks and benefits. In doing so, the researcher informed the participants about the purpose of the research, expected duration and procedures. The participants were given the rights to decline and to withdraw from the research any time they fill uncomfortable with being involved in the study. The confidentiality and privacy of the respondents was respected. The researcher gave the respondents freedom to choose how much information about themselves they reveal and under what circumstances; the participants were given information about how their data would be used.

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0. Introduction

In the fourth chapter, which comprised both qualitative and quantitative data, the findings were presented and assessed. The information in this chapter is based on a survey of 164 participants, with the findings given in tables. The general purpose of this study was to investigate the causes of failures of One Laptop Per Child as one of the Rwandan Government projects in Musanze district from 2018 to 2020 and find out the challenges of One Laptop Per Child implementation. Specifically, this study aimed at examining the effect of poor management of the project on the

ix

failure of One Laptop per child project in Rwanda; establishing the effect of Inadequate quality of the product on the failure of One Laptop Per Child project in Rwanda; and evaluating the effect of Inadequate distribution on the failure of One Laptop Per Child project in Rwanda. Gender, age, and educational achievement were used to split the respondents into groups.

4.1. Descriptive statistics test

I was able to determine the mean between components using descriptive statistics. It is possible to assess the symmetry and, in particular, the absence of symmetry. Descriptive statistics, according to Conjointly (2021), are primarily used to summarize certain fundamental properties of data. For example, they allow the researcher to build a foundation of almost quantitative data. However, they were unable to allow the study to make a conclusion based on the entire dataset but could use regressions to take specific conclusions.

Table 1. Skewness and Kurtosis test of Poor management of the project

	Descriptive Statistics					
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Not curtailing Scope Statement caused OLPC project failure	164	2.00	5.00	3.9817	.03402	.43571
Not breaking down Deliverables caused OLPC project failure	164	2.00	5.00	3.9451	.05946	.76144
Incomplete tasks caused OLPC project failure	164	2.00	5.00	4.0305	.05765	.73829
Poor Monitoring and Risk Management caused OLPC project failure	164	2.00	5.00	4.0000	.04738	.60671
Strong technical dependency on the OLPC organization due to lack of IT competence in rural areas.	164	2.00	5.00	3.8780	.05657	.72451
Insufficient plans for the future expansion to reach out the remaining children	164	2.00	5.00	3.9634	.05324	.68184
The shortage of teacher training on OLPC strained their daily usage of the machines	164	2.00	5.00	4.0000	.06356	.81399

Source: Field data, (2021)

The descriptive statistics for Poor management of the project are shown in table no.1. Starting with the mean, the range shown is between 3.87 and 4.03, with the lowest value of the mean being 3.87 for the factor "Strong technical dependency on the OLPC organization due to lack of IT competence in rural areas." and the highest value being 4.03 for the factor "Incomplete tasks caused OLPC project failure." This indicates that the factors affecting project management have strong reliance.

Table 2. Skewness and Kurtosis test of Inadequate quality of the product

	Descriptive Statistics					
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Lack of supervision/monitoring caused OLPC project failure	164	2.00	5.00	4.0183	.06266	.80239
Failing to identify customer needs caused OLPC project failure	164	2.00	5.00	4.1829	.05350	.68513
Inadequate/poor planning caused OLPC project failure	164	2.00	5.00	4.1341	.05299	.67854
Lack of Attitude towards change caused OLPC project failure	164	3.00	5.00	4.1585	.05039	.64531

x

				Mean		Std. Deviation
The package of the OLPC is not effective in improving both the academic and non-academic outcomes of underprivileged children.	164	1.00	5.00	4.1280	.07035	.90096
The XO software has undergone a number of updates	164	3.00	5.00	4.1341	.06087	.77953
OLPC programs is not an exciting learning opportunity for children	164	2.00	5.00	4.0976	.05686	.72822

Source: Field data, (2021)

The summary on descriptive statistics for the inadequate quality was shown in table no.2. Starting with the mean, the range shown is between 4.01 and 4.18., with the lowest value of the mean being 4.09 for the factor "OLPC programs is not an exciting learning opportunity for children" and the highest value being 4.18 for the factor "Failing to identify customer needs caused OLPC project failure" This indicates that the factors of inadequate quality are strong and have reliance between them.

Table 3. Skewness and Kurtosis test of Inadequate distribution

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Lack of resource planning caused OLPC project failure	164	2.00	5.00	4.1951	.05530	.70822
Lack of infrastructure caused OLPC project failure	164	3.00	5.00	4.0244	.04812	.61625
Stakeholders' characteristics is one of the major cause of OLPC project failure	164	2.00	5.00	4.0793	.05605	.71774
Unit Value of the Product is the main cause OLPC project failure	164	1.00	5.00	4.3659	.05994	.76763
Standardised or Customised Product can be the main cause OLPC project failure	164	3.00	5.00	4.1646	.05351	.68532
Perishability (Depreciation) was the main cause of OLPC project failure	164	3.00	5.00	4.1829	.04758	.60930
The insufficient number of OLPC to the total number of kids made it difficult for distribution	164	3.00	5.00	4.1463	.05622	.71995

Source: Field data, (2021)

The table displayed the summary on descriptive statistics for the Inadequate distribution in table no.3. Starting with the mean, the range shown is between 3.4 and 43., with the lowest value of the mean being 4.02 for the factor "Lack of infrastructure caused OLPC project failure" and the highest value being 4.36 for the factor "Unit Value of the Product is the main cause OLPC project failure" This indicates that the factors of inadequate distribution are strong and have reliance between them.

Table 4. Skewness and Kurtosis test of Effect of failure of one laptop per child project

Descriptive Statistics						
	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Lack of continuity is one of the major factor of failure of OLPC Project	164	1.00	5.00	4.3232	.07877	1.00877
The lack of OLPC maintenance stressed its poor functionality	164	3.00	5.00	3.7073	.06053	.77520
Delays in payments was the key factor of failure of OLPC Project	164	2.00	5.00	3.8841	.05828	.74636
Technology- based services can be the key factor of failure or success of OLPC Project	164	2.00	5.00	4.0244	.05799	.74266
Children's accessibility is the main element of failure or success of OLPC Project	164	3.00	5.00	3.8659	.05772	.73913
Corruption is the key factor of failure of OLPC Project	164	1.00	5.00	4.0793	.06296	.80630

xi

	N					
Lack of Effective Leadership is the factor of failure of OLPC Project	164	1.00	5.00	4.1220	.07015	.89840
The Poorly Understood of project Case is the factor of failure of OLPC Project	164	3.00	5.00	4.2134	.05385	.68967

Source: Field data, (2021)

The table displayed the overview on descriptive statistics for failure of one laptop per child project in table no.4. When looking at the mean, the range was determined to be between 3.4 and 4.3. The lowest value of the mean being 3.7 for the factor "The lack of OLPC maintenance stressed its poor functionality" and the highest value being 4.3 for the factor "Lack of continuity is one of the major factor of failure of OLPC Project". Overall, this implies that the factors of failure of one laptop per child project are strong and have reliance between them.

4.2. Chi-square test

Table 5 Chi-square test of Poor management of the project on the failure of One Laptop Per Child project

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46.028[a]	9	.000
Likelihood Ratio	50.783	9	.000
Linear-by-Linear Association	13.950	1	.000
N of Valid Cases	164		
a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .05.			

Source: Field data, (2021)

The Chi-Square tests for the extent to which poor management of the project contributes to the failure of One Laptop per Child project was demonstrated in table no.23. The test yielded results for both the degree of freedom and the asympt. sig (2-sided), which may be regarded as the amount of p that can aid in determining the existing link between these variables. The Pearson Chi-Square resulted with a value 46.028. As a general rule, a p value of less than or equal to 0.05 indicates that there is sufficient evidence to lead the researcher to believe that the distribution is not as predicted. With this in mind, the p value was 0.000 indicated that the two variables had a relationship since the asympt. Sig. values was less than 0.05. poor management of the project does, in fact, lead to failure of One Laptop Per Child project, as evidenced by the p value in the results. As a result, the researcher confirmed that one variable affect another and this relationship was significant and understandable.

Table 6 Chi-square test of Inadequate quality of the product on the failure of One Laptop Per Child project

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	68.747[a]	6	.000
Likelihood Ratio	81.667	6	.000
Linear-by-Linear Association	27.184	1	.000
N of Valid Cases	164		
a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is .98.			

Source: Field data, (2021)

The statistics displayed in table no.24 revealed a Chi-Square test for the influence of inadequate quality of the product on the failure of One Laptop per Child project. The test revealed the degrees of freedom and asympt. sig (2-sided), which may be translated as the amount of p that can assist the researcher in determining the existing relationship between the variables. 68.747 is the Pearson Chi-Square. In fact, a p value of less than or equal to 0.05 indicates that there is enough evidence for the researcher to infer that the distribution is not as predicted and luckily the

p value was 0.000. inadequate quality, in fact, lead to failure of One Laptop Per child project, as evidenced by the p value in the results which was less than 0.05.

Table 7 Chi-square test of Inadequate distribution on the failure of One Laptop Per Child project

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	64.822[a]	4	.000
Likelihood Ratio	82.882	4	.000
Linear-by-Linear Association	38.618	1	.000
N of Valid Cases	164		
a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.83.			

Source: Field data, (2021)

The Chi-Square tests for the impacts of inadequate distribution on the failure of One Laptop per Child project were shown in table no.25. The test yielded results for both the degree of freedom and the asympt. sig (2-sided), which may be considered while the amount of p can aid in determining the existing link between the variables. 64.82 is the Pearson Chi-Square. As a general rule, a p value of less than or equal to 0.05 indicates that there is sufficient evidence to lead the researcher to believe that the distribution is not as predicted. The interpretation would be different if this were not the case. The p value was 0.000 indicated that the two variables had a relationship. To conclude, Inadequate distribution contribute to the failure of one laptop per child project, as evidenced by the p value in the table above.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Objectives Finding

5.1.1. Objective 1: Effect of Poor management of the project on the failure of One Laptop Per Child project

The first objective of the study assessed the effect of Poor management of the project on the failure of One Laptop Per Child project. In the table 1, the mean, the range shown is between 3.87 and 4.03, with the lowest value of the mean being 3.87 for the factor "Strong technical dependency on the OLPC organization due to lack of IT competence in rural areas." and the highest value being 4.03 for the factor "Incomplete tasks caused OLPC project failure."

5.1.2. Objective 2: Effect of Inadequate quality of the product on the failure of One Laptop Per Child project

The second objective assessed the effect of Inadequate quality of the product on the failure of One Laptop Per Child project. The table no.2. Starting with the mean, the range shown is between 4.01 and 4.18., with the lowest value of the mean being 4.09 for the factor "OLPC programs is not an exciting learning opportunity for children" and the highest value being 4.18 for the factor "Failing to identify customer needs caused OLPC project failure"

5.1.3. Objective 3: Effect of Inadequate distribution on the failure of One Laptop Per Child project

The third objective of this study aimed at assessing the effect of Inadequate distribution on the failure of One Laptop Per Child project. The table no.3. Starting with the mean, the range shown

xiii

is between 3.4 and 43., with the lowest value of the mean being 4.02 for the factor "Lack of infrastructure caused OLPC project failure" and the highest value being 4.36 for the factor "Unit Value of the Product is the main cause OLPC project failure" This indicates that the factors of inadequate distribution are strong and have reliance between them. ip between inadequate distribution and failure of One Laptop Per child project in Rwanda.

5.2. Conclusions

To conclude, inadequate distribution, inadequate quality, and poor management all together impact the rate at which government projects fail.

5.3. Recommendation

- Citizens' livelihoods depend on high-quality public services, and maintaining their availability is a key government duty. However, governments are not alone in this; decades of experience and research have proven that people and civil society play critical roles in improving and providing public services and attaining social results.
- In fact, there is lack of risk assessment in most of public institutions including schools. Since every project involve risks, the government need to consider employing professionals who knows much more about risk assessment while conducting any project that will affect the general public.
- While implementing different project, most of public services are most likely to involve corruption which often lead to poor management or even producing poor outputs to affect the entire population. Government will need to increase the level of monitoring its projects so as to minimize the risk of corruption while distributing its services. Once the project involve corruption, there is a higher risk of failing and could not produce the desired results.

- Government need to sensitize people about the use of collaborating with authorities to distribute common interests and participate in promoting general wellbeing of the people. By doing this, the government will be able to distribute equally the services that must be accessible by every citizen as well.

5.4. Area for further research

Future studies need to work on the following topics;

- To find out the impact of corruption among authorities in both private and public sectors in delaying and failing government projects.
- To assess the contribution of decentralization in promoting fairness and equal distribution of common resources and assist general welfare of Rwandans.
- To establish the influence of technology in boosting the rate at which government projects are completed on time and effectively.

5.5   REFERENCES

Books

Adebayo, O., Eniowo, O., and Ogunjobi, V., (2018). *Assessment of project monitoring and control techniques in Ondo State Agency for Road Maintenance and Construction (OSARMCO).* International Journal of Engineering and Management Research, 8 (5), 177.

Baark, E. and Heeks, R., 1998: *Evaluation of Donor-Funded Information Technology Transfer Projects in China: A Life-Cycle Approach.* Manchester: Institute for Development Policy and Management University of Manchester.

xiv

Baker, E. L., Gearhart, M., Herman, J. L., & Kulik, J. (1994). *Evaluating the apple classrooms of tomorrow*. Technology assessment in education and training, 5(6), 109-127.

Battro, A. M. (2013). *One Laptop Per Child: Comments on Jeffrey James's Critique*. Social Science Computer Review, 31(1), 133-135.

Cristia, J., Ibarrarán, P., Cueto, S., Santiago, A., & Severín, E. (2017). *Technology and child development: Evidence from the one laptop per child program*. American Economic Journal: Applied Economics, *9*(3), 295-320.

De Vaus, D. A. (2014). Surveys in Social Research. (6th ed). *UCL Press*: Australia.

Des Forges, A., (1999): *Leave None to Tell the Story: Genocide in Rwanda.* London: Human Rights Watch. Development website: http://www.gg.rhul.ac.uk/ict4d/workingpapers.html. Enough? Viewpoints from Classroom Teachers in Rwanda. Information

Dosumu, O., and Aigbavboa, C., (2017). *Impact of design errors on variation cost of selected building project in Nigeria*. Procedia engineering, 196, 847-856.

Fuchs, C., & Horak, E. (2008). *Africa and the digital divide*. Telematics and informatics, *25*(2), 99-116.

Gaved, M., Collins, T., Mulholland, P., Kerawalla, L., Jones, A., Scanlon, E., ... & Twiner, A. (2010). *Using netbooks to support mobile learners' investigations across activities and places*. Open Learning: The Journal of Open, Distance and e-Learning, 25(3), 187-200.

Government of Rwanda, (2006). *The NICI-2010 plan, Kigali*: The Rwanda Information Technology Authority, 2006.

Government of Rwanda, (2020) *Rwanda Vision 2020*, *Kigali*: Ministry of Finance and Economic Planning.

Government of Rwanda, (2007). *Economic Development & Poverty Reduction Strategy 2008-2012, Kigali*: Ministry of Finance and Economic Planning

Government of Rwanda, (2008): *National budget 2009-2010*, Ministry of Economy and Finance, Kigali

Guest, G., A. Bunce, & Johnson, L. (2006). *How Many Interviews Are Enough? An Experiment with Data Saturation and Variability.*" Field Methods 18 (1): 59–82.

Hourcade, J. P. (2008). *Interaction design and children*. Now Publishers Inc.

Kabubo-Mariara, J. (2007). *Poverty and policy in Kenya*: Proceedings of the national workshop held on 9th August 2006, Nairobi, Kenya.

Kahen, G., (1996). *Building a framework for successful information technology transfer to developing countries.* International Journal of Computer and Applications Technology.

Kasunic, M. (2005). *Designing an effective survey* (No. CMU/SEI-2005-HB-004). Carnegie-Mellon Univ Pittsburgh PA Software Engineering Inst.Webb 2002

Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.

Kozikowski, L. (2003). *Design That Matters: MIT Non-Profit Fights Global Illiteracy with SolidWorks-Designed Solutions*." Business Wire, Berkshire Hathaway.

Morgan, A. G. (2016). *Learning Consumption: Media, Literacy, and the Legacy of One Laptop per Child*. Information Society, vol. 32, no. 2, pp. 85–97.

Mozelius, P., Wikramanayake, G., & Rahuman, K. (2011). *One Year of One-to-one Computing in Sri Lanka-the Impact on Formal Learning in Primary School Education*. Bhatta, 2008

Negroponte, N. (1995). *Being Digital*. Excerpt. New York: Random House.

Olateju, O., Abdul-Azeez, I., and Alamutu, S., (2011). *Project Management Practice in Nigerian Public Sector-An Empirical Study*. Australian Journal of Business and Management Research, 1 (8), 1.

OLPC Learning Team. (2009). *School Sessions in Rwanda with OLPCorps, Part 1: Rwamagana B*." One Laptop per Child, blog.laptop.org/2009/07/06/olpcorps-in-rwanda/.

OLPC Mission, Part 1 (2008). *One Laptop per Child*. One Laptop per Child.

Parahoo, K., & McCaughan, E. M. (2001). *Research utilization among medical and surgical nurses: a comparison of their self-reports and perceptions of barriers and facilitators*. Journal of nursing management, *9*(1), 21-30. Hennessy et al. 2007; John 2005; Loveless 2003

Polkinghorne, D. E. (2005). *Language and meaning: Data collection in qualitative research*. Journal of counseling psychology, 52(2), 137-145.

Randerson, J. (2011). *Material Matters: Stories of Learning Technology Transfer*. Critical Arts: A South-North Journal of Cultural & Media Studies, vol. 25, no. 2, 2011, pp. 227–241.

Richard,B. (2014). *Green Machines and Constructionism: The Rhetoric and Reality of One Laptop Per Child in Sub-Saharan Africa*. InterActions: UCLA Journal of Education and Information Studies, 10(2). ISSN 1548-3320.

Steeves, H. L., & Kwami, J. (2017). *Interrogating gender divides in technology for education and development: The case of the One Laptop per Child project in Ghana*. Studies in Comparative International Development, 52(2), 174-192.

United Nations. (1948). *Universal Declaration of Human Rights*. Resolution

Uyo, B., (2019). *Probe Contractors over failed road*.