

Capacity Building Initiatives as a Predictor for Sustainability of Projects: A Study of Public Borehole Water Project in Kitui County-Kenya

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Abstract

This study focuses on capacity building initiatives influences sustainability of public boreholes water projects. The following was the objective; to assess the extent to which learning from capacity building initiatives, influences the sustainability of public borehole water projects in Kitui County-Kenya. The study tested one null hypothesis to establish whether the association among the study variables was significant. The target population was 366234 project beneficiaries, 396 chairpersons and 8 undertakers. A sample was drawn from this population using a formula adding to 383 project beneficiaries and 167 chairpersons. Purposive sampling was employed to select 8 undertakers in charge of public boreholes in each Sub counties. With $R^2=0.52$, $r=0.721$, $F(2,506) = 39.01$ at $p=0.000$, the hypothesis that there is no significant relationship between capacity building initiatives and sustainability of public borehole water projects in Kitui County-Kenya is therefore rejected. The study findings are expected to evidently demonstrate how capacity building initiatives program should be undertaken in public borehole water projects to enhance project sustainability.

Keywords: capacity building initiatives, internal benchmarking, competitive benchmarking, strategic benchmarking, training in M&E

1. Introduction

All over the World, project management strategies are growing bit by bit yet in Sub-Saharan Africa, the majority of the water supply projects are not sustainable (Kaliba, 2002). UNICEF (2013) indicates that 758 million people globally have no access to safe drinking water. WHO/UNICEF (2013) further indicates that 89% of the global populations have access to safe drinking water. The coverage is high in developed states with 99% and 87% in developing countries. WHO/UNICEF (2013) indicates that Brazil has 84% improved water coverage in rural areas and India has 89 % improved water coverage in rural areas. Globally, access is lower in rural regions than in urban regions, and such disparities are predominantly large in Sub-Saharan Africa, where 49% of rural dwellers have access to safe drinking water, compared with 83% of urban dwellers (JMP et al., 2012). Therefore, the water crisis excessively affects rural Africans countries. However, local and global experiences continue to reveal that access to water in all these dimensions is an uphill task requiring planning and rigorous strategic actions at international and local levels (UNDP, 2006).

Rural water supply systems such as water point, piped water-point, and boreholes have been definitely considered as the most viable water systems for water supply (AFDB, 2012). The sustainability of any water supply system is mostly linked with functional status. Fitts & Sanders (2011) indicate that there are considerably many borehole projects in Africa, but it is projected that less than half of them are operational while the others are non-operational. The same study indicated that more than 80% of borehole hand pumps were totally non-operational just one year after installation. WHO (2011) also reported that more than 30% of borehole projects in developing countries may be broken down at any time. Lack of improved water supplies in the rural region of Sub-Saharan Africa has highly motivated non-governmental organizations, government and other entities to greatly invest in this sector (Harvey & Reed, 2004).

1.1 Learning from Capacity Building Initiatives

Capacity building initiatives in monitoring and evaluation are severely limited in many countries. In many non performing projects, whether initiated by private or public sector, the questions that arise include the following; human resource development, presence of seminars and workshops, quality of M&E training and significance of field visits focusing on M&E content (Cornwall et al., 2000). Capacity building initiatives has yielded success in developed and developing countries. The Overseas Development Institute Report (2011-2012) in Honduras indicated that capacity building initiatives in terms of M&E training enabled farmers to increase their production and sustained their production. The meeting held in Cote D'Ivoire attended by senior officials from African countries in collaboration with international organizations for assistance in development approved initiating capacity building program in monitoring and evaluation in African countries can bring about good governance and eventually advocated training in M&E. Another meeting held in Morocco resolved that African institution must do more to strengthen their capacity in monitoring and evaluation in order to improve skills and create awareness in the African continent on the need for M&E in project management (AFDB, 2012).

Community empowerment and community participation are strengthened through capacity building program (Jovan, 2012). According to Sajiwandani (1998), Platteau (2004), Tonts and Haslam-McKenzie (2005), to achieve community empowerment and community participation, capacity building programs must be strengthened to manage local community projects. McLaughlin et al. (1997) argued that delivery of capacity building to the community can take the form of provision of abilities or skills through strengthening relationships between organizations, training, engaging community members to form new or join existing organizations and changing organization practice or policies which are realized through monitoring and evaluation capacity building. Benchmarking is a way of monitoring and evaluation of different projects in different regions. It entails comparison between its own and the most organization that would possibly contribute *to the execution of best practice or methodology solutions, new technologies and the quality of products, increase of productivity, cost savings, innovation, creativity and competitiveness on the market which leads to satisfying the needs of clients. Through capacity building initiatives, best practices, new technologies and creativity are realized* (Jovan, 2012).

Learning through internal benchmarking involves monitoring and evaluation process in which projects stakeholders or project manager's monitors and evaluates its own operations or business in order to determine the best style or practice for carrying out a particular assignment or duty. The main aim of conducting an internal benchmarking is to establish best practice or methodology available to get task or a certain assignment done with the least resources and effort. In addition, internal benchmarking entails looking inwards as a way of attempting to learn from their own projects. The organization tries to compare similar practice within the organization. For instance, the financial management department can be compared to operation and maintenance department in a given public borehole water project. Internal benchmarking is the benchmarking process across the corporation leading to improved competence hence building the capacity of the participant. Further, internal benchmarking focuses on continuous improvement which leads to increased knowledge and skills. The basic idea of internal benchmarking is to gain knowledge and skills in all processes throughout the organization (Jovan, 2012).

Learning through competitive monitoring/benchmarking involves monitoring and evaluation of all the competitor's tactics or moves, particularly the product prices or market. With this, an industry or business can adjust their product prices along with the competition and market in order to maintain or gain new clients. Competitive monitoring is an approach for the organization that needs to maintain an edge. It's a way of establishing the best strategies, processes, and techniques for realizing organization goals through a set of metrics. The approach is valuable to an organization because it allows project managers to monitor closely the performance of competitors. Through identifying gaps in processes as well as examining how other competitors are accomplishing their objectives, the organization can maintain an advantage and stay on top of significant moves (Vorhies & Morgan, 2005).

2. Literature Review

2.1 Sustainability of Public Borehole Water Projects

This concept of sustainability is an idea that external agents can intercede to initiate a project or process, which will go on indefinitely once project implementers withdraw financial support and other support. Sustainability is central to much development practice and policy, and this is the exact meaning of sustainability most often used in the literature on rural water systems (Chown, 2014). The concept of "sustainable development" discovered after the World Commission on Environment and Development's Landmark report. Sustainability later was adopted by those providing sanitation and water services to ensure service and management are cost effective and to guarantee the availability of financial resources (Black, 1985). In the context of rural water supply,

sustainability is defined as the water resources that are not over exploited but naturally replenished, water facilities are maintained regularly in a condition which guarantees consistent and adequate supply, the benefits of the water supply continue to be realized over all prolonged period of time by the users, and the service delivery process demonstrates a cost effective use of resources (Harvey & Reed, 2003). In the context of water projects, Pollnac and Porneroy (2005) defined sustainable water projects as a project with minimal external support in the long term; financing of regular O&M costs by beneficiaries and a continued flow of water over a long period.

From the reviewed literature, the research adopted project sustainability that was based on four indicators of sustainable borehole water projects that comprises maintenance, functionality, community ownership and affordability. The four indicators implied that the borehole water projects facilities was functional and water can be accessed easily by all the consumers. This indicates that the facilities were always in good working condition in order to deliver a satisfying quality, color, and quantity of water to all the consumers (Carter, 2009).

2.2 Capacity Building Initiatives

The period 1950s to 1960s is well-known for the capacity building movement strictly focusing on enhancing the self-help and technological capacities of local communities in rural areas for development projects. In the 1970s, following a sequence of reports on global development, the emphasis was set on building capacity for technological skills in rural areas, and also in the managerial sectors of developing countries (Smillie, 2001). Shahid and Mallick (2013) defined capacity building as a methodical as well as an integrated approach to develop and continually improve institutional and individual competencies and abilities necessary for achieving secure, safe and sustainable projects. Capacity building initiatives involves equipping project stakeholders with monitoring and evaluation skills and data to enable them to perform their activities effectively and sustainably. This view is confirmed by CLEAR (2012) when indicated that for any sustainable developments, there is a need for effective capacity building program to sustain and support M&E information for educating project stakeholders.

A study of the determinants of effective monitoring and evaluation systems in non-governmental organizations conducted by the Wanjiru (2013) revealed that M&E training contributed to the success of the M&E system and greatly enhanced the staff's competence. The target population of the study was 200 NGOs, who mainly implemented projects successfully. The study findings revealed that the M&E training as the best strategy to improve effectiveness in the M&E system as it provides sufficient knowledge and skills to the project beneficiaries and project managers. The study concluded that to ensure sustainable projects, capacity building policy should be introduced across the NGO sector as well as the professional association of M&E.

Strengthening monitoring and evaluation and building sustainable health information systems in resource limited countries, a study conducted by Mpofu et al. (2014) indicated that training in M&E of the new cadre of health worker enhanced health worker competence to monitor and evaluate all projects within the districts; Enhanced data quality; increased utilization of health data for disease examination and planning purposes. The study used interviews and focus group to collect data from M&E district officers. The focus group discussions and interviews were recorded and later transcribed. The study revealed that the district M&E officers managed to build M&E capacity within the districts by providing mentoring and in-service training to all health workers based and civil society organizations. The capacity building efforts were focused on the importance of M&E, data quality and data analysis. Health workers received training on the existing data collection tools and data management and this strengthened project management leading to sustainable health services. In addition, the health workers were able to keep track of all projects implemented.

Learning from benchmarking involves monitoring and evaluation activities that allows participants to monitor and assess what others are doing, share ideas and technical skills which a very critical in project sustainability (Brown et al., 1989). A study on *Community Capacity Building: Creating a Better Future Together* conducted by Noya & Clarence (2009) revealed that benchmarking mainly focuses on facilitating all committees' members, including the most disadvantaged and the poorest, to develop competencies and skills so as to take greater organization and control of their own lives and possibly contributes toward inclusive local development through monitoring and assessing what others are doing. Benchmarking enables the community to be more cohesive, resilient and better placed to tackle social and economic challenges hence enhancing the sustainability of community projects. Benchmarking as a performance management method, a study conducted by Goncharuk et al. (2015) proved that a range of benchmarking lies in its kind or types, which permits or allows the improvement of different aspects of the organization due to different sources of information. Goncharuk et al. (2015) revealed that the main purpose of benchmarking is to ensure continuity as well as sustainable performance of an organization.

External and internal benchmarking is mainly used when organizations start their operations or activities with the internal, and finish it by employing external benchmarking. Nevertheless, this kind of benchmarking produces the best results if the collected data is used effectively. The main purpose of external and internal benchmarking in any organization is to ensure that their performance is improved and sustained (Brown et al., 1989). The strategic benchmarking is another kind of benchmarking which involves the successful approach already formed and defined by the competitive organization. The strategic benchmarking guides the organization towards attaining successful results by comparing its’ practices with other organizations as well as their strategies. Additionally, strategic benchmarking is mainly used to align organizational strategies that can no longer used due to the changes in consumers’ demands and technology (Jovan, 2012). For sustainable development projects, strategic benchmarking is very critical particularly in developing projects stakeholders’ competencies and skills (Goncharuk et al., 2015).

2.3 Conceptual Framework

The conceptual framework identifies the influence of capacity building initiatives learning strategy on sustainability of public borehole water projects. The dependent variable in this study is sustainability of public borehole water projects. The indicators that used to measure sustainability of public borehole water projects were: training in M&E, learning from internal benchmarking, learning from competitive benchmarking, learning from strategic benchmarking, implementation of benchmarking lessons and utilization of capacity building lessons.

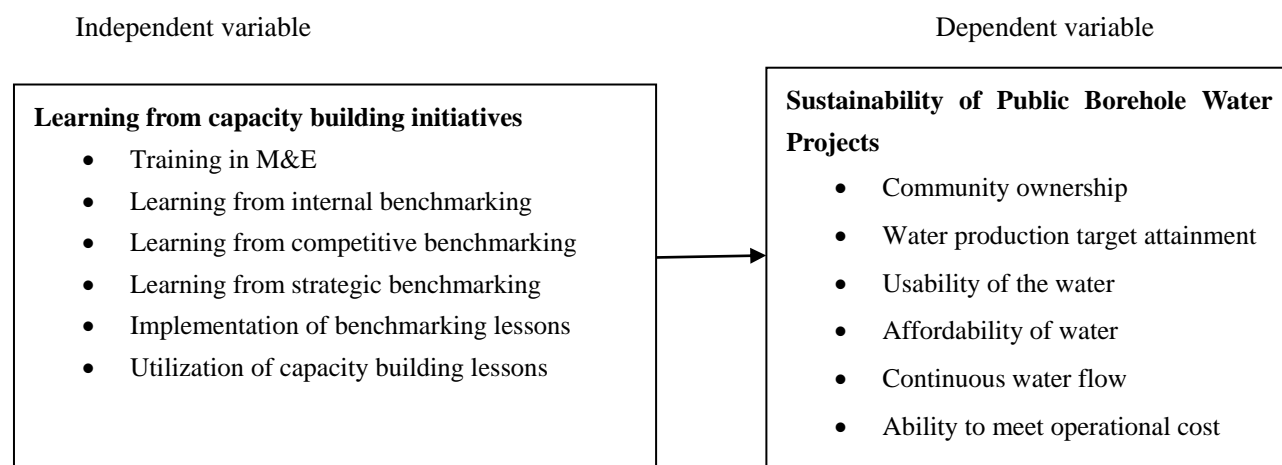


Figure 1. Conceptual Framework on the Relationship between Capacity Building Initiatives Strategy and Sustainability of Public Borehole Water Projects.

3. Research Methodology

3.1 Research Design

Mixed methodology design was employed in this study as it takes the advantage of both the quantitative and qualitative paradigms (Bryman, 1996). The descriptive survey design was integrated in this study in order to describe the phenomena as it exists in the population without manipulating the variables (Mertens & Wilson, 2012). The phenomena that exist in the population as per this study were capacity building initiatives and sustainability of public borehole water projects. In this study, the respondents were asked to provide their views or opinions concerning the magnitude of these variables as they exist in the population under study. According to Mutura, Mwangi, Nyairo and Wambugu (2015), the descriptive survey design is associated with establishing the relationship between variables. As a result, this descriptive survey design enabled the researcher to find out the relationship amongst the independent variable (Capacity building initiatives) and dependent variable (Sustainability of Public Borehole Water Projects).

3.2 Research Instruments

The study used multi-method approach which involves use of different research instruments such as questionnaires and interview guide (Decrop, 1999). The questionnaires were used for collecting quantitative data and interview guides for collecting qualitative data. The combination of questionnaires and interview guide were necessary for further cross-checking of the results in order to increase reliability as well as assess their internal consistency.

3.3 Sampling Technique and Sample Size

The study employed simple random sampling as well as purposive sampling method to select suitable respondents for the study. Simple random sampling was employed in order to pick the required numbers from each of the public borehole water projects. Purposive sampling was used to select undertakers because all of them were knowledgeable on the technical aspect of the public borehole water projects (Mugenda, 2008). The target population for this study comprised: project beneficiaries, undertakers and chairpersons of each public boreholes water projects.

3.4 Data Processing and Analysis

The data collected was coded by assigning numerals to the answers provided by the respondents and arranged in a logical order. For the purposes of preliminary data analysis technique, the researcher read through the data collected in order to obtain a sense of the data as well as emerging themes. The data was entered into the Statistical Package for Social Sciences (SPSS) program version 20.0. Arithmetic mean and standard deviation were used to describe the variable of the study. Thus sustainability of public borehole water projects and capacity building initiatives were subjected to these statistical techniques in order to describe their occurrence in the populace (Bierman, Bonini, & Hausman, 1991). The Pearson product moment correlation coefficient and stepwise regression were employed purposely to describe the relationship between the independent variable and dependent variables. For easy interpretation of the results for the hypothesis, the strong correlation, (r) will range between + 0.5 to +1.0; for moderate correlation, (r) will range between + 0.3 to +0.49 and for weak correlation, (r) will range between +0.10 to +0.29 (Shirley et al., 2005). Pearson’s Product Moment Correlation (r) and Stepwise Regression (R²) values were carefully considered while interpreting the results and a confidence level of 95% was required in the tests of hypothesis (Kinyanjui, 2014).

According to Agarwal (1998), the following regression and correlation models guided the data analysis:

β_0 – Constant Term

$\beta_1, \beta_2, \beta_3, \dots \beta_n$ – Coefficients Path

y – Dependent Variable

$X_1, X_2, X_3, \dots X_n$ – Independent Variables

ε – Error Term

3.5 Correlation Models for Research Objectives (H₀)

For research objective, the hypothesis was formulated and corresponding correlation model was developed because the relationship to be tested is linear.

Hypothesis: H₀: There is no significant relationship between learning from capacity building initiatives and sustainability of public boreholes water projects.

Sustainability of public boreholes water projects = f (learning from capacity building initiatives)

$$y = \beta_0 + \beta_1 X_1 + \varepsilon$$

3.6 Test of Hypothesis

The test of the hypothesis was conducted in order to arrive at an empirical conclusion. Tables 1 represent the research objective, research hypothesis, type of analysis as well as the interpretation of the results summary.

Table 1. Summary of Statistical Test of Hypothesis

Research Objective	Hypothesis	Type of Analysis	Interpretation of the Result
1. To examine the extent to which learning from capacity building initiatives influence sustainability of public borehole water projects in Kitui County-Kenya	H ₀₁ : There is no significant relationship between learning from capacity building initiatives and sustainability of public boreholes water projects.	Pearson’s Correlation Regression	-For p < 0.05, H ₀ was rejected; and H ₁ accepted -For the strength of the relationships, the (r) values will be considered as follows: Strong correlation;+ 0.5 < r < + 1.0 Moderate correlation;+ 0.30 < r < + 0.49 Weak correlation;+ 0.10 < r < + 0.29;

4. Data Analysis

The composite mean was 2.91 with a standard deviation of 2.53. This implies that the respondents were more neutral than the learning from capacity building initiatives strategy influences the sustainability of public borehole water projects. The correlation results revealed that, there is a significant positive relation between capacity building initiatives and Sustainability of Public borehole water Projects ($r=0.721$, $p=0.000$). The multiple regression were $F(2,506) = 39.01$ $p < 0.000$ and $R^2 = 0.52$. This implies that there is a very strong association between capacity building initiatives and sustainability of Public borehole water Projects. From the multiple regression analysis, the study established that part of the variations in sustainability of public borehole water projects is influenced by capacity building initiatives while the other variations are determined by other factors. From the regression analysis, the study revealed that, there is a significant relationship between capacity building initiatives and sustainability of public borehole water projects in Kitui County-Kenya. The hypothesis that there is no significant relationship between capacity building initiatives and sustainability of public borehole water projects in Kitui County-Kenya is therefore rejected.

5. Conclusion

The study used both correlation and regression to establish the relationship between capacity building initiatives and sustainability of public borehole water projects. The correlation results revealed that, there is a significant positive relation between capacity building initiatives and Sustainability of Public borehole water Projects ($r=0.721$, $p=0.000$). The multiple regression were $F(2,506) = 39.01$ $p < 0.000$ and $R^2 = 0.04$. This implies that there is a very strong association between Capacity building initiatives strategy and Sustainability of Public borehole water Projects. From the multiple regression analysis, the study established that part of the variations in sustainability of public borehole water projects is influenced by Capacity building initiative while the other variations are determined by other factors. From the regression analysis, the study established that, there is a significant relationship between capacity building initiatives and sustainability of public borehole water projects in Kitui County-Kenya. This shows that there is need to strengthen learning through capacity building initiatives strategy. This study therefore concluded that capacity building initiatives should be taken seriously in all public borehole water projects.

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