INSTITUTIONAL INFLUENCE ON SUSTAINABILITY OF WORLD BANK FUNDED PROJECTS IN KENYA

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ABSTRACT

The World Bank has supported Kenya in financing development projects in transport, energy, water, urban development, health, public sector management and social protection since 1960. By November 2011, it had financed more than 175 projects with a total investment of over US$ 7,070 billion. Sustainability of the funded projects is of utmost importance if the impact of funding these projects is to be realized. Despite project feasibility studies being done prior to commencement of the projects, sustainability is still not guaranteed. This study investigated the influence of institutional factors on sustainability of World Bank funded projects in Kenya. The study adopted both cross-sectional and explanatory research designs. The targeted projects were all projects funded between the years 2000 and 2012, the period was considered appropriate because, typically, international development projects last from three to ten years. The study targeted 65 respondents of which 51 successfully filled and returned the questionnaires. The respondents comprised of project managers of the implementing organization and officials from the National Treasury in charge of monitoring the donor funded projects in Kenya. Data was collected by use of structured and semi structured questionnaire then analyzed using both descriptive and inferential statistics. Principal component analysis was carried out using factor analysis method to establish the most critical factors among the ones identified, and Logit regression analysis was used to determine the influence of various institutional factors on sustainability of World Bank funded projects in Kenya. Prior to Logit regression analysis, multi collinearity test was carried out to determine whether the identified variables were correlated. Content analysis was done for open ended questions. The results of the study established that the coefficients of stakeholder involvement and obligation were significant and thus these factors increase the likelihood of project sustainability if taken into consideration. It was recommended that the World Bank should ensure that the project documents capture sustainability as one of its key criteria for approval for project funding. The government of Kenya through the National Treasury should ensure that a plan to include all stakeholders and clarify their obligations in project sustainability is in place before releasing the funding for the project.

INTRODUCTION

Background of the study

Development projects, especially those financed by international development aid, play a vital role in the socio-economic development of developing countries (Khang and Moe, 2012). According to the United Nations Development Program (2004), the 49 least developed countries in the world received US $ 55.15 billion in Official Development Assistance (ODA) in 2004 which is equivalent to 8.9 percent of their total gross domestic product. Khang and Moe (2012) noted that the success of the financed projects determines the socio-economic progress in the recipient countries.

Development projects provide socio-economic assistance to developing countries, and in most cases the deliverables are not tangible. The intangibility of the project objectives and deliverables raises special challenges in managing and evaluating their performance. There is need to adapt new tools and concepts to define, monitor and measure the extent to which development project achieve their envisioned objectives (Khang and Moe, 2012).
Each year, the World Bank lends between US$15 to US$20 billion for projects in more than 100 countries in the world. The World Bank has supported Kenya since the financial year 1960/61 with total World Bank commitments to Kenya being about $4.2 billion between 1960 and the year 2011 (World Bank, 2004).

Project success has traditionally been measured by the extent to which it meets customer specifications and timely completion within budget. Little attention has been focused on sustainability of project benefits.

World Bank funded projects have a project life spanning over many years, involving large capital outlay, generating unbalanced cash outlay and generally involving complex contractual agreements. The situation is more compounded by the ever increasing environmental instability which is caused by such issues as, changing economic and financial situations, unstable political environment and changing regulatory framework. There is need therefore to understand what determines sustainability of projects.

World Bank has funded many projects in Kenya with varying degree of success. Generally, project performance is measured by the extent to which it is completed on time and meeting the user requirements within the stipulated time (Schmidt, 2009). Several project has been funded by world bank includes; Arid Lands Resource Management Project funded between 1996 and 2003 was delayed by two years, The Free Primary Education Support Project, Energy Sector Reform Project which was implemented in 1998, The Northern Corridor Transport Improvement Project and the Kenya Agricultural Productivity Project (KAPP) phase I among many others. These projects have not all performed as per the expectations despite the urge amounts of funding that has gone into these projects.

Despite the enormous investment by the World Bank in financing projects in developing countries, a number of challenges are encountered. A study by Independent Evaluation Group (IEG) of the World Bank found out that in 2010 alone, 39 percent of all World Bank projects were unsuccessful, and in Africa alone, the failure rate was over 50 percent (Ika, 2012). Bad governance, resource curse, conflicts, lack of project management capacity, poor project design, politics, geographical location, and corruption were some of the challenges that development projects faced (Gow and Morris, 1988; Ika and Hodgson, 2011).

**Statement of the Problem**

The World Bank funds well designed and approved projects which are expected to result in benefits to the intended users or produce the desired goals for unforeseeable future. Incorporating sustainability into project design would result in a win-win situation for both project beneficiaries, financiers and other stakeholders. Projects in Kenya have continued to perform poorly in terms of sustainability (World Bank, 2004). Moreover, projects in Kenya have been poorly rated on sustainability by the Operations Evaluation Department (OED) of the World Bank as compared to other East African countries. Kenya attained an overall rating of 49 percent on sustainability of projects funded during the period 1999 to 2002 as compared to Uganda’s and Tanzania’s rating of 59.5 percent and 70.1 percent respectively. Beyond East Africa, Ghana was had a rating of 64.7 percent in the same period (World Bank, 2003). This shows that among the three East African countries rated by OED, Kenya was rated the poorest in project sustainability.

The studies were done in countries which are more advanced than Kenya and also given that there are no two countries with similar environmental conditions, it was important to investigate how the aforementioned factors influence sustainability of World Bank funded projects in Kenya.

**The Objectives of the Study**

The objective of this study was to investigate the influence of institutional factors on the sustainability of World Bank funded projects in Kenya.

**Hypotheses**

$H_{01}$: Institutional factors do not influence the sustainability of World Bank funded projects.

**Theoretical Literature Review**

Several management theories have been proposed by many studies each applying to a different research situation (Fredman and Neuman; Laszlo and Kripper, 1998; Anderson, Carter, and Lowe, 1999; Liang, You, and Liu, 2010; Hanisch and Wald 2012). Among the theories are; systems theory, contingency theory and resource based theory. This study is anchored on contingency theory where every project is considered unique and its sustainability is affected by different actors depending on the country’s contextual situation. Given that projects are temporary endeavors created for a particular purpose, and that the World Bank funds projects in many countries, the sustainability of these many projects is assumed to be determined by country specific situation. Contingency theory, therefore was found to be more relevant the study.

According to Zhou et al. (2013), project sustainability can only be measured by using a composite value. The composite measures of sustainability have been used in other studies, for example by USAID (1994), Sarriot et al. (2004), Hack et al. (2007), Bell and Morse (2008); and Rowe (2006). In line with the above studies, this study computed a composite value and used it to measure sustainability.

Some of the methods of analysis used by other studies are univariate analysis, (Sarriot et al., 2004), and logit regression model (Purna and Amushree, 2010; Rowe, 2006). Mubila et al. (2000) used probit and ordinary least square methods. This study adopted the logit model to assess the contribution of independent variables towards sustainability of World Bank funded projects in Kenya. Project sustainability was measured by checking the continual flow of benefits to the intended users, the extent to which the facilities are operational, existence of evidence of project outcome, institutional support and the project design.

The role of governments in the sustainability of projects is therefore critical. The ability to manage the factors associated with institutions/ government is equally important. Evidence from a wide range of literature and project documentation suggested that in community managed projects, many factors affect post-project sustainability; among these factors are institutional (Shediac-Rizkallah and Bone, 1998; Bakalian, 2009).
The researcher broke down the Institutional factors into clarity of obligation of the stakeholders, objectives of the project, stakeholder participation and incorporation of sustainability in the structure of the implementing organization.

RESEARCH METHODOLOGY

The two main philosophical frameworks that guide any scientific research are positivism and interpretivism (Collins and Hussey, 2009; Jackson, 2009). This research adopted positivism framework where data was collected and analysed to gain an understanding of the issues underlying the study. This study used a mixed research design; specifically, cross-sectional and explanatory research designs were used.

Empirical Model

The empirical model that was used in this study was the logit regression model. Where the dependent variable was binary, a logit or probit regression model can be used (Gujarati and Sangeetha, 2007). Due to the similarity between logit and probit, many studies choose the logit model because of its comparative mathematical simplicity. This study therefore used logit model. Several studies, such as Makau, Wawire and Ofafa (2010), Purna and Anushree (2010), adopted logit model where binary outcome was expected. Makau, Wawire and Ofafa (2010) used logit to estimate the adoption of ICT by small and medium enterprises; Purna and Anushree (2010) used a Logit model to assess the performance and sustainability of self-help groups’ projects in India. Logistic regression is used to estimate the probability that a particular outcome will occur and where the dependent variable is nominal (Keller, 2008). Hence this study used logit model, which is expressed as:

\[ L_i = \ln \left( \frac{P_i}{1-P_i} \right) = \alpha + \beta_1 X_{i1} + \ldots + \beta_k X_{ik} \]

Where:
- \( L_i \) is the logit, as \( Z \) varies from \(-\infty \) to \(+\infty \) and \( P \) ranges from 0 to 1, the logit ranges from \(-\infty \) to \(+\infty \).
- \( \ln \) is the natural logarithm.
- \( P_i \) is The probability that a given project is sustainable.
- \( 1 - P_i \) is Probability of the project being unsustainable.
- \( \alpha \) is Constant
- \( Y_i \) is Observed response so that a particular project is sustainable. \( Y_i = 1 \) if sustainable, and \( Y_i = 0 \) if otherwise.
- \( X_{ij} \) is Vector of the determinants that affect the sustainability of project.
- \( \beta_i \) is Vector of the coefficients of determinant that describe how changes in the independent variables influence sustainability of project.

Sustainable \((L_i) = f(\text{Ins }_i)\)  

Where: \( \text{Ins }_i \) = Institutional factors

The following Logit model was used to estimate the sustainability of World Bank funded projects in Kenya:

\[ \text{Sustainable } (L) = \mu + \beta_1 \text{lob} + \beta_2 \text{isp} + \beta_3 \text{ipo} + \beta_4 \text{iporg} + \mu \]

Where:

- **Institutional Factors**
  - lob = Clarity of obligation of stakeholders
  - isp = Stakeholder participation
  - ipo = Integration of project objectives
  - iporg = Project organization

Target Population

The target population of the study was all projects in Kenya funded by the World Bank and completed between 2000 and 2012. The choice of the period is supported by Ika et al. (2011) who argued that international development projects typically last from three to five years, but the funding can be up to ten years and sustainability can only be assessed after project completion. The study targeted the 62 projects that were completed during the said period. The study adopted Cronbach alpha as a measure of internal consistency. It obtained an overall alpha of 0.837 which meant that the research instrument was reliable.

Data Analysis

Descriptive statistics were used to analyse the influence of each of the independent variables on the sustainability of World Bank funded projects in Kenya. Logit regression model was used to determine the probability of each of dependent variable and its contribution to sustainability as recommended by Purna and Anushree (2010). Principal component analysis was performed for each of the composite variable and their eigen values calculated. Only factors that had their eigen values greater the one as suggested by Beavers et al. (2013) and Costello and Osborne, (2013) were retained.

Prior to the use of logit model, multicollinearity test was performed to check whether variables were collinear. This study used Variable Inflation Factors and tolerance values to test multicollinearity as suggested by Menard (2002), Makau, Wawire and Ofafa, (2013).

EMPIRICAL RESULTS AND DISCUSSIONS

Response Rate

After the reliability test was undertaken and the instrument was found to be reliable it was then used to collect data. The research achieved a response rate of 86.4 percent, which was found to be adequate (Saunders et al. 2007; Bryman & Bell, 2007; Bryman & Bell, 2007).

Effects of Institutional Factors on Project Sustainability

The study focused on determining the influence of institutional factors on the sustainability of World Bank funded projects in Kenya. The study collected information on the effect of institutional factors on project sustainability, and the responses were as presented in table 1.
Institutional Influence on Sustainability of World Bank Funded Projects in Kenya

Table 1 Effects of Institutional Factors on Project Sustainability

<table>
<thead>
<tr>
<th>Institutional Factors</th>
<th>Responses</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement of stakeholders in planning for sustainability</td>
<td>Yes</td>
<td>42</td>
<td>82.4</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>9</td>
<td>17.6</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Extent of stakeholder involvement in planning for sustainability</td>
<td>Very small extent</td>
<td>6</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>Small extent</td>
<td>2</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>Neutral</td>
<td>7</td>
<td>13.7</td>
</tr>
<tr>
<td></td>
<td>Large extent</td>
<td>28</td>
<td>54.9</td>
</tr>
<tr>
<td></td>
<td>Very large extent</td>
<td>8</td>
<td>15.7</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Influence of stakeholders participation on project sustainability</td>
<td>Very small extent</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Small extent</td>
<td>3</td>
<td>5.9</td>
</tr>
<tr>
<td></td>
<td>Neutral</td>
<td>7</td>
<td>13.7</td>
</tr>
<tr>
<td></td>
<td>Large extent</td>
<td>28</td>
<td>54.9</td>
</tr>
<tr>
<td></td>
<td>Very large extent</td>
<td>10</td>
<td>19.6</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Extent of project objectives mainstreaming into existing project outcomes</td>
<td>Very small extent</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Small extent</td>
<td>2</td>
<td>3.9</td>
</tr>
<tr>
<td></td>
<td>Neutral</td>
<td>4</td>
<td>7.8</td>
</tr>
<tr>
<td></td>
<td>Large extent</td>
<td>27</td>
<td>52.9</td>
</tr>
<tr>
<td></td>
<td>Very large extent</td>
<td>18</td>
<td>35.3</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Source of data: Survey 2013

Inferential statistics

In order to establish the effect of independent variables on the dependent variable, data was collected on each of the identified independent variable and thereafter, regression analysis was done. However, before carrying out the regression analysis, it was necessary to carry out factor analysis and multicollinearity tests. Factor analysis was done to identify the variables that explained the most variance while multicollinearity test was carried out to establish if there was any correlation among the identified variables which could affect the interpretation of the results (Pett et al., 2003). Variable inflation factors and tolerance values were used to test if multicollinearity existed.

Factor Analysis Results

In order to determine the underlying variables that explain a pattern of correlation among the dependent variables factor analysis was done and the results presented in Table 2.

Table 2 Factor Analysis Results

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Percent of Cumulative Variance</th>
<th>Percent of cumulative variance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Percent of cumulative Variance</td>
<td>Total</td>
<td>Percent of cumulative variance</td>
</tr>
<tr>
<td></td>
<td>Unrotated Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rotated Factors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Component 1</td>
<td>47.46</td>
<td>47.46</td>
<td>1.90</td>
<td>47.46</td>
</tr>
<tr>
<td></td>
<td>Component 2</td>
<td>30.12</td>
<td>77.58</td>
<td>1.20</td>
<td>77.58</td>
</tr>
<tr>
<td></td>
<td>Component 3</td>
<td>14.92</td>
<td>92.50</td>
<td>1.12</td>
<td>92.50</td>
</tr>
<tr>
<td></td>
<td>Component 4</td>
<td>7.50</td>
<td>100.00</td>
<td>1.04</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Extraction Method: Principal Component Analysis.
Source of data: Survey 2013

The variables that were considered under institutional factors were clarity of obligation on sustainability, involvement of stakeholders in planning, design and implementation of the projects, mainstreaming of project outcome on existing project and incorporating sustainability into project design. Using factor analysis extraction method, two of the above variables were extracted that is stakeholder involvement and clarity of obligation on sustainability, which had Eigen values of 1.90 and 1.21 respectively, with a cumulative variance of 77.58 percent. The rest were omitted because their extraction sum of

the square loading was less than the recommended threshold of one. The two variables were therefore used to compute the composite factor for institutional factors.

Multicollinearity Test Results

Collinearity test was necessary to determine whether the identified independent variables were correlated. Using tolerance and variance inflation factors as suggested by Menard (2002) and Makau, Wawire, and Ofafa (2010), the collinearity test was performed and the tolerance and variance inflation factors for each of the variable is as shown in Table 3.

Table 3 Multicollinearity Test Results

<table>
<thead>
<tr>
<th>Factor</th>
<th>Variable</th>
<th>Collinearity statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>Institutional factors</td>
<td>Stakeholders participation</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td>Clarity of obligation on sustainability</td>
<td>0.65</td>
</tr>
</tbody>
</table>

Source of data: Survey 2013

As shown in the Table 3, under institutional factors, stakeholder involvement and clarity on the obligation of each player on sustainability were found to have tolerance values of 0.93 and 0.65 respectively, indicating that multicollinearity was not a problem. The VIF for the two variables were found to be 1.08 and 1.53 respectively.

Regression Results and Interpretation

Logit model was used to analyse the importance of each of the variable and the extent to which it affects the sustainability of World Bank funded projects. Using the results of factor analysis, and upon establishing that multicollinearity was not a problem in the regression analysis, composite variables were computed for each of the key variables for the study. The composite variables were then regressed using the logit model to determine the contribution of each of the independent variable on the dependent variable. The results of the logit regression is as shown in Table 4.

Table 4 Regression Results Variables in the Equation

<table>
<thead>
<tr>
<th>Factor</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Sig.</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder involvement</td>
<td>2.002</td>
<td>1.110</td>
<td>3.252</td>
<td>.011</td>
<td>7.403</td>
</tr>
<tr>
<td>Sustainability obligation</td>
<td>.538</td>
<td>.476</td>
<td>1.275</td>
<td>.049</td>
<td>1.712</td>
</tr>
<tr>
<td>Constant</td>
<td>-4.497</td>
<td>2.413</td>
<td>3.473</td>
<td>.062</td>
<td>.011</td>
</tr>
</tbody>
</table>

Description Value

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>51</td>
</tr>
<tr>
<td>-2 Log likelihood</td>
<td>55.370</td>
</tr>
<tr>
<td>Cox &amp; Snell R Square</td>
<td>0.498</td>
</tr>
<tr>
<td>Nagelkerke R Square</td>
<td>0.671</td>
</tr>
<tr>
<td>Hosmer and Lemeshow Chi-square</td>
<td>5.128 , $p$ value= 0.744, (8 d.f)</td>
</tr>
</tbody>
</table>

Source: Survey data (2013)

The -2 log likelihood of 55.370 shows that the model fits the research data. Nagelkerke R-Square of 0.671 indicates that 67.1 percent of variations in the sustainability variable (Dependent Variable) were explained by the institutional composite factor.

The Hosmer and Lemeshow goodness-of-fit test with the $p$ -value was 0.744 implied that the model was a good fit. The desirable outcome of non-significance indicates that the model prediction does not significantly vary from the observed.
CONCLUSION AND POLICY IMPLICATIONS

Summary

The coefficient of institutional factors was found to be significant and thus these factors contributed to the sustainability of World Bank Funded Projects in Kenya. The two factors that were considered under the institutional factors and their coefficients found to be significant were involvement and clarity of obligation of stakeholders on sustainability.

Conclusion

Sustainability of projects is crucial in the economic development of any country. Project success should not only be viewed from the traditional three success criteria of cost, time and quality but also from the perspective of sustainability. Institutional factors that were found to affect sustainability were involvement of stakeholders and clarity of responsibilities.

From the literature reviewed, it was established that Kenya had an overall sustainability rating of 49 percent on World Bank funded projects, which is low as compared to other east African countries which had a higher sustainability rating. To improve Kenya’s rating on sustainability, the government needs to focus on the training of beneficiaries on sustainability so that they can take full control of the project when the financial support has come to an end. In addition, involvement of stakeholders, incorporation of sustainability into project design, and provision of support beyond the project completion is critical in ensuring that World Bank projects are sustainable. The government also needs to address the institutional set up and ensure that sustainability is taken into consideration.

Contribution to Knowledge

Though sustainability has been a concern world over, most of the studies have been focused on the environmental, social and economic sustainability of societies. None has focused on the sustainability of World Bank funded projects in Kenya. While most studies focused on the determinants of project success, none has specifically focused on the sustainability of projects in Kenya. The study therefore has shed light on the determinants of sustainability of project benefits of World Bank funded projects in Kenya, which the previous studies did not.

Policy Implications

The National Treasury should ensure that the role of stakeholders on sustainability is clearly spelled out in project description document before funds are released to project implementers. This will ensure that the project outcome is satisfactory to all the stakeholders, thus increasing the chances of project sustainability. This is because the findings of this study showed that the clarity of stakeholder’s roles affects project sustainability. According to the findings of this study, stakeholder involvement during implementation is necessary for project sustainability. The involvement will make the stakeholders own the project outcome and thus enhances the success of projects sustainability. Hence, the World Bank should use stakeholder involvement as one of the criteria for assessing project viability during project approval. This will ensure that the government puts into consideration the role of stakeholders on project implementation and eventually sustainability.

Hypothesis ; Institutional factors do not influence the sustainability of World Bank funded project

The coefficient of institutional factors was significant and positive implying that the involvement of stakeholders in planning and design of project and clarifying their responsibilities as regards to sustainability increases the chances of project being sustainable. This result supports the alternate hypothesis that institutional factors affect the sustainability of World Bank Funded Projects in Kenya. The null hypothesis was thus rejected. These findings are consistent with those of Ishan et al. (1995) who asserted that stakeholder participation affects project performance and sustainability.

References


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