

EXTENT OF APPLICATION OF COST BENEFIT ANALYSIS MODEL BY SECONDARY SCHOOL PRINCIPALS IN AGBANI EDUCATION ZONE

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Abstract

The main purpose of this study was to ascertain the extent of application of cost benefit analysis by secondary school's principals in Agbani Education zone. Design adopted for the study was descriptive survey design. Two research questions and Two hypotheses guided the study. This study was carried out in Agbani Education zone. The population for the study consisted of all the 63 secondary school principals in Agbani Education zone as at the time of the study. Due to the manageable size of the population for this study, the entire population, 63 secondary school principals was used as sample for the study. The instrument used for data collection was a questionnaire on Application of Cost Benefit Analysis by Secondary School Principals in Agbani Education Zone (QACBAP). It is a 61-item structured questionnaire. The instrument was constructed by the researcher and validated by three research experts. The questionnaire yielded an overall reliability coefficient of .69 obtained through Cronbach's alpha method. Copies of the questionnaire were administered to the respondents by the researcher and five briefed research assistants. Direct delivery and retrieval system was used. Mean and standard deviation were used to answer the research questions while z-test was used to test the hypotheses at 0.05 significant level. Major findings of the study revealed that principals' in urban and rural secondary schools in Agbani Education zone assessed the social benefits and appraised desirability of projects in their schools to a Great Extent. Consequently, it was recommended among other things, that the good understanding and

skills on Cost Benefit Analysis Model should form a measurable aspect of screening for principals before appointment.

Introduction

Undoubtedly, the functions of secondary school principals can be enhanced through the application of innovative strategies, one of which is Cost Benefit Analysis (CBA). Cost Benefit Analysis, according to Becker (2016) is one of the techniques for deciding which organizational project or infrastructure to embark on in the fiscal year. Every project decided on, was included in the capital budget in the fiscal year in which it would commence. CBA, sometimes called “Benefit Cost Analysis” (BCA), is a systematic approach to estimating the strengths and weaknesses of alternatives in project execution. It is used to determine options that provide the best approach to achieve benefits or cost savings. The CBA is also defined as a systematic process for calculating and comparing benefits and costs of a decision, policy (with particular reference to organizational policy) or (in general) project, (Ahmed, 2016). The prime basis for use of CBA by organizations is to appraise the desirability of a given policy which parastatals have to implement. It is an analysis of the expected balance of benefits and cost, including an account of foregone alternatives and the status quo (the existing infrastructure). CBA is supportive for predicting whether the benefits of a policy by any organization outweighs its costs and by how much, relative to other alternatives, so that one can rank alternative policies in terms of cost-benefit ratio (Gbenga and Dayo, 2016). At the end, accurate cost-benefit analysis identifies choices that increase public utility from a utilitarian perspective, (McMahon, 2015).

McMahon held that cost benefit analysis is a useful tool in the hands of administrators of educational organizations such as secondary school principals. McMahon identified two applications of cost benefit analysis suitable for secondary school setting. They include; assessment of the social benefits of projects and appraisal of the desirability of projects. McMahon described social benefit as a consequence or effect of decisions or interventions which lead to development of the people and the society. Social benefits are the sum total of gains accruing to the society and people meeting to connecting with each other for pleasure, (Putin, 2018). To assess the social benefits of projects in secondary schools, McMahon (2015) suggested that the principals should assess the socio-economic benefits of projects, assess the socio-cultural benefits of projects, consider effects of projects on teachers, consider effects of projects on students, consider effects of projects on school administrators, consider effects of projects on other critical stakeholders of the school, encourage civic activism in project selection, consider gender equity in project selection, consider project users with special needs and consider potentials of projects to enhance unity in diversity among users. From the foregoing, it is obvious that assessment of the social benefit of school projects is very vital. However, there is still no definitive conclusion on the extent to which secondary school principals apply these all important index of Cost Benefit Analysis in

carrying out their managerial duties especially in Enugu state. This gap justifies the researcher's choice to embark on the present study.

Desirability of a project involves determining whether the intended outcomes (i.e. the changes that the project will make to people's lives, such as improved awareness, better health or changed behaviours) are suitable and worth to be desired, (McMahon, 2015). Schults (2016) opined that the employment potentiality of a project is an important consideration while determining the desirability of a project. The project which is labor intensive and has higher employment potential is preferred over the project having lower opportunities to generate employment. Schults argued that in secondary school system, constructing a laboratory, library or clinic may result to employing laboratory attendants, librarians or some health workers respectively. As a consequence, such projects (laboratory, library or clinics) maybe more desirable than constructing additional classroom when the desire of the stakeholders is to create employment.

Furthermore, Ahmed (2016) suggested that capital output ratio should be an important factor in determining the desirability of a project. According to Ahmed, the project which gives a higher output per unit of capital employed should be given preference over a project which gives lower output per unit of capital employed. Another factor to consider in appraisal of desirability of projects is Value Added Criterion. The value added criterion is similar to the capital output ratio except that the estimated value added by a project is considered in place of the total value of the output, (Todaro and Smith, 2016). Also important for appraisal of the desirability of project is the impact of the project on the foreign exchange reserves of the country. This criterion affects mainly the government. Gbenga and Dayo (2016) hinted that since there is scarcity and constraint of foreign exchange in Nigeria, the project which has higher potential of net benefits in foreign exchange is given preference over other projects. As a result, a secondary school principal who fails to consider this criterion while choosing a project may lose the support of the government who incidentally is the main financier of projects in public secondary schools.

To appraise the desirability of projects in secondary schools, McMahon (2015) suggested that the principals should appraise the social desirability, economic desirability, cultural desirability, desirability by students, desirability by teachers, desirability by school administrators, desirability by parents, desirability by host community, desirability by the government, desirability by school management board, desirability by donors and other project financiers. Regrettably, there are conflicting findings on the extent to which secondary school principals appraise the desirability of projects in their schools especially in Enugu sate. This calls for more investigations, thus, justifying the researcher's choice to embark on the present study.

No doubt, these goals of secondary education are laudable. However, they cannot be achieved without innovative and pragmatic leadership. It is therefore expected that in managing secondary schools, strategies such as Cost Benefit Analysis will be very useful. However, the extent to which CBA is applied by principals in the management of secondary schools is a subject of debate. This study is a deliberate attempt to explore the extent of application of CBA by principals in management of secondary school in Enugu State. In Enugu state, Secondary Education is presently managed by the Post Primary Schools Management Board (PPSMB). The board is organized into six Education Zones. Enugu state is among the states of the Nigerian federation crying fowl over non availability of sufficient funds to sponsor Education and other vital sectors. Hence, secondary education in Enugu state is presently grossly underfunded. Principals are consequently expected to innovate and apply pragmatic management techniques in order to make meaningful impact.

Another variable of interest to the researcher in this study is influence of school location on the extent to which principals apply Cost Benefit Analysis to management of secondary schools in Agbani Education zone. Researchers such as Gbenga And Dayo (2016), Ahmed, (2016) Becker (2016) and Wordhall (2017) vary in their findings and opinions as to whether or not school location influences the extent to which principals apply Cost Benefit Analysis to management of secondary schools. Gbenga and Dayo, (2016) reported that urban schools' principals apply Cost Benefit Analysis to a great extent while their counterparts in rural schools apply Cost Benefit Analysis to a low extent in management of secondary schools. Ahmed, (2016) found in another study that principals in rural schools apply Cost Benefit Analysis more than principals in urban schools in the area of his study. Becker (2016) and Wordhall (2017) in their separate studies found that school location did not have significant influence on the extent to which secondary school principals apply Cost Benefit Analysis in the management of their schools. School location in the context of this study would be categorized into two viz; urban and rural. Undoubtedly, urbanization and rural development still pose great challenges to the government of the third world countries such as Nigeria. In the urban areas, barely all the basic infrastructures are inadequate in supply, hence, the struggle for and consequent over stretching of the available few. Therefore, in the school system, the story has remained that of over-crowded classrooms, insufficient and obsolete equipment, absenteeism occasioned by the use of school children for street trading even during the school hours, truancy on the part of the teachers as they hassle to survive the high cost of living, etc.

The emergence of urban congestion has worsened things and created more unmanageable social problems. The problems of urbanization are many and they constitute a big threat to school administration and management as well as teaching and learning. This is because learning must take place in a very conducive environment. Also, innovative management is required so as to provide a conducive environment

amidst scarce resources and other inhibiting factors. On the other hand, the situation in the rural areas is not in any way better. Although the rural locations may never be known for over-population, they have definitely suffered neglect and abandonment. Hence, schools in the rural areas are marked by dilapidated buildings, where they even exist at all and lack of necessary equipment to enhance teaching and learning. Many rural schools have been deserted by teachers who usually seek transfers to urban areas. All these largely tell on the school administrators (principals) who are expected by other staff, student and parents to provide a friendly and enabling teaching/learning environment at all times. Thus, a study of this nature is most timely as it also seeks to investigate whether or not school location will influence secondary school principals' application of Cost Benefit Analysis to school management

Purpose of the Study

The main purpose of this study was to ascertain the extent of application of cost benefit analysis by secondary school principals in Enugu State. In specific terms, the study sought to;

- i. examine the extent to which principals assess the social benefits of projects in secondary schools in Enugu State
- ii. investigate the extent to which principals appraise the desirability of projects in secondary schools in Enugu State

Research Questions

The following research questions were formulated to guide the study;

1. What is the extent to which principals assess the social benefits of projects in secondary schools in Agbani Education zone?
2. To what extent do principals appraise the desirability of projects in secondary schools in Agbani Education zone?

Hypotheses

The following hypotheses were tested at 0.05 level of significance;

1. There is no significant difference between the extent to which principals assess the social benefits of projects in urban and rural secondary schools in Agbani Education zone.
2. There is no significant difference between the extent to which principals appraise the desirability of projects in urban and rural secondary schools in Agbani Education zone.

Methodology

Design adopted for the study was descriptive survey design. Two research questions and Two hypotheses guided the study. This study was carried out in Agbani Education zone. The population for the study consisted of all the 63 secondary school principals in

Agbani Education zone as at the time of the study. Due to the manageable size of the population for this study, the entire population, 63 secondary school principals was used as sample for the study. The instrument used for data collection was a questionnaire on Application of Cost Benefit Analysis by Secondary School Principals in Agbani Education Zone (QACBAP). It is a 61-item structured questionnaire. The instrument was constructed by the researcher and validated by three research experts. The questionnaire yielded an overall reliability coefficient of .69 obtained through Cronbach’s alpha method. Copies of the questionnaire were administered to the respondents by the researcher and five briefed research assistants. Direct delivery and retrieval system was used. Mean and standard deviation were used to answer the research questions while z-test was used to test the hypotheses at 0.05 significant level.

Results

Research Question 1

To what extent do principals assess the social benefits of projects in secondary schools in Agbani Education zone?

Table 1: mean and standard deviation scores on research question 1 items

S/ N		Urban			Rural			Overall		
		Me an	SD	Re mar k	Me an	SD	Re mar k	Mea n	SD	Re mar k
1	Assess the socio-economic benefits of projects	2.69	0.19	GE	2.93	0.25	GE	2.80	0.13	GE
2	Assess the socio-cultural benefits of projects	2.93	0.15	GE	2.18	0.13	GE	2.79	0.13	GE
3	Consider effects of projects on teachers	3.21	0.13	GE	3.16	0.13	GE	3.11	0.12	GE
4	Consider effects of projects on students	3.14	0.14	GE	3.22	0.12	GE	3.08	0.25	GE
5	Consider effects of projects on school administrators	2.93	0.19	GE	2.75	0.25	GE	2.82	0.13	GE
6	Consider effects of projects on other critical stakeholders of the school	2.96	0.15	GE	3.15	0.13	GE	3.04	0.13	GE
7	Consider effects of projects on other critical host communities of the school	2.69	0.13	GE	2.93	0.13	GE	2.80	0.12	GE

8	Encourage civic activism in project selection	2.93	0.14	GE	2.18	0.12	GE	2.79	0.25	GE
9	Consider gender equity in project selection	3.11	0.14	GE	3.25	0.06	GE	3.05	0.12	GE
10	Consider project users with special needs	2.73	0.06	GE	3.16	0.15	GE	3.01	0.28	GE
11	Consider potentials of projects to enhance unity in diversity among users	3.06	0.14	GE	3.22	0.12	GE	3.15	0.25	GE
GRAND		2.94	0.14	GE	2.92	0.14	GE	2.94	0.17	GE

From table 1 the grand means for urban and rural were 2.94 and 2.92 respectively while the overall grand mean was 2.94. This result indicated that principals in urban and rural secondary schools in Agbani Education zone assessed the social benefits of projects in their schools to a Great Extent. Also, the standard deviation value for the overall (0.17) is small, indicating that there were little or no extreme values. Hence, the mean values so obtained represented the actual views of the respondents.

Research Question 2

To what extent do principals appraise the desirability of projects in secondary schools in Enugu State?

Table 2: mean and standard deviation scores on research question 2 items

S/N		Urban			Rural			Overall		
		Mean	SD	Remark	Mean	SD	Remark	Mean	SD	Remark
12	Social desirability of projects in your school	3.55	0.21	GE	3.59	0.13	GE	3.58	0.35	VGE
13	Economic desirability of projects in your school	3.62	0.04	GE	3.57	0.95	GE	3.59	0.14	VGE
14	Cultural desirability of projects in your school	3.54	0.34	GE	3.61	0.93	GE	3.62	0.09	VGE
15	Desirability of projects in your school by students	2.93	0.13	GE	2.75	0.91	GE	2.82	0.15	VGE
16	Desirability of projects in your school by teachers	2.93	0.25	GE	2.18	0.04	GE	2.79	0.98	VGE
17	Desirability of projects in your school by school administrators	3.06	0.23	GE	3.22	0.44	GE	3.15	0.85	VGE
18	Desirability of projects in your school by parents	2.69	0.11	GE	2.93	0.35	GE	2.80	0.99	VGE
19	Desirability of projects in	2.93	0.25	GE	2.18	0.3	GE	2.79	0.26	VG

	your school by host community					5				E
20	Desirability of projects in your school by the government	3.21	0.05	GE	3.16	0.14	GE	3.11	0.95	VG E
21	Desirability of projects in your school by school management board	3.14	0.29	GE	3.22	0.09	GE	3.08	0.14	VG E
22	Desirability of projects in your school by donors and other project financiers	3.61	0.11	GE	3.58	0.43	GE	3.62	0.75	VG E
GRAND		3.20	0.18	GE	3.09	0.43	GE	3.20	0.51	GE

From table 2 the grand means for urban and rural were 3.20 and 3.09 respectively while the overall grand mean was 3.20. This result indicated that principals in urban and rural secondary schools in Agbani Education zone appraised the desirability of projects in their schools to a Great Extent. Also, the standard deviation value for the overall (0.51) is small, indicating that there were little or no extreme values. Hence, the mean values so obtained represented the actual ratings of the respondents.

Hypothesis 1

There is no significant difference between the extent to which principals assess the social benefits of projects in urban and rural secondary schools in Agbani Education zone.

Table 3: z-test analyses for hypothesis 1

Group	n	\bar{x}	SD	z-calculated	z-critical	Remark
Urban		2.94	0.14	0.62	1.96	Not significant (Do not reject hypothesis)
Rural		2.92	0.14			

From table 3, z-calculated (0.62) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (urban and rural) do not differ significantly. Consequently, hypothesis one is not rejected as stated, implying that there was no significant difference between the extent to which principals assess the social benefits of projects in urban and rural secondary schools in Agbani Education zone

Hypothesis 2

There is no significant difference between the extent to which principals appraise the desirability of projects in urban and rural secondary schools in Agbani Education zone.

Table 4: z-test analyses for hypothesis 2

Group	n	\bar{x}	SD	z- calculated	z-critical	Remark
Urban		3.20	0.18	0.81	1.96	Not significant (Do not reject hypothesis)
Rural		3.09	0.43			

From table 4, z-calculated (0.81) is less than z-critical (1.96). Hence, at .05 significant level, the mean ratings of the two groups (urban and rural) do not differ significantly. Consequently, hypothesis two is not rejected as stated, indicating that there was no significant difference between the extent to which principals appraise the desirability of projects in urban and rural secondary schools in Agbani Education zone.

Summary of Findings

Findings based on this study can be summarized thus;

1. Principals in urban and rural secondary schools in Agbani Education zone assessed the social benefits of projects in their schools to a Great Extent.
2. Principals in urban and rural secondary schools in Agbani Education zone appraised the desirability of projects in their schools to a Great Extent.

Discussion of Findings

Cost Benefit Analysis (CBA) involves the application of rationality to decision making, as opposed to relying entirely on intuition and “seat- of- the- pants” judgments. Considering education as an investment, all form of investment involve a sacrifice of present consumption in order to secure future benefit in the form of higher level of output or income in the future. Cost Benefit Analysis may be considered to be a sophisticated, quantitative technique for applying rational analysis to decision- making. It tries to answer the practical question of whether an educational programme is worthwhile from economic, social and cultural standpoints. Cost Benefit Analysis assesses the merits of school projects (investments) in terms of “how, when, and where,” they should be carried out. It also assesses the desirability and acceptability of the projects by relevant stakeholders. The purpose of the Cost Benefit Analysis is to provide the measure of the expected yield of the projects as a guide to rational allocation of resources. Through objective evaluation, Cost Benefit Analysis makes a comparison of the economic costs

and benefit of the educational programme or project. Cost Benefit Analysis is used to conduct a systematic comparison of the magnitude of the cost and benefit of school projects in order to assess their economic profitability, social benefits, desirability and extent of involvement of relevant stakeholders.

Consequently, through Cost Benefit Analysis, the school in general and secondary school in particular will attain her major objective of improving the society. This improvement results from meaningful development of recipients of the education. Of course, the recipients of education (students) can be meaningfully developed only when there exists an enabling environment. Arguably, school projects are meant to provide enabling environment but the projects must be economically profitable, socially beneficial and desirable (acceptable by relevant stakeholders). These and more can be determined through Cost Benefit Analysis which facilitates the process of rational decision making. Since Cost Benefit Analysis is a systematic approach to estimating the strengths and weaknesses of alternatives, it can therefore be used to determine options that provide the best approach to achieve benefits or cost savings. The theoretical basis for use of Cost Benefit Analysis by educational organizations is to appraise the desirability of a given project, objectively evaluate the cost and processes of implementation of the projects in order to assess both the economic profitability and social benefits of such projects to the society at large. Cost Benefit Analysis is therefore an analysis of the expected balance of benefits and cost, including an account of foregone alternatives and the *status quo*(the existing infrastructure).

The foregoing therefore, imply that secondary school principals who apply some Cost Benefit Analysis indices to a low extent (as found in this study) must be trained and charged to improve in their adoption or application of Cost Benefit Analysis. On the otherhand, secondary school principals who apply some Cost Benefit Analysis indices to a great extent (as found in this study) must be helped and encouraged to do it the more. Else, the chances of attaining the objectives of secondary education will be threatened. When the objectives of secondary education are not attained, the implications on the general public can be better imagined than experienced. This is because school dropouts will rise exponentially resulting to exponential increase in social vices and all sorts of crimes. Accurate cost-benefit analysis identifies choices that increase public utility from a utilitarian perspective. Cost Benefit Analysis is supportive for predicting whether benefits of a school project, outweighs its costs, and by how much relative to other alternatives. It thus imply that secondary school principals who apply Cost Benefit Analysis can rank alternative projects in terms of cost-benefit ratio. CBA can offer a well-articulated estimate of the best alternative.

Recommendations

Based on the findings, the researcher made the following recommendations:

1. Ministry of Education should reward principals for applying some indices of Cost Benefit Analysis Model in their schools through awards and commendations.
2. Ministry of Education should organize seminars, conferences and workshops for principals with emphasis on those indices of Cost Benefit Analysis Model which they apply to a low extent.
3. Good understanding and skills on Cost Benefit Analysis Model should form a measurable aspect of screening for principals before appointment.

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