East African Scholars Journal of Education, Humanities and Literature

OPEN ACCESS

Abbreviated Key Title: East African Scholars J Edu Humanit Lit
ISSN: 2617-443X (Print) & ISSN: 2617-7250 (Online)
Published By East African Scholars Publisher, Kenya

Volume-2 | Issue-5| May- 2020 | DOI: 10.36349/EASJEHL.2020.v03i05.006

Research Article

School Infrastructure Policy Implementation and Performance of School Construction Projects in Post Conflict Environment

Mr. Stephen J. Kamau*[1], Professor Charles M. Rambo[2], Dr. John Mbugua[2]

[1]Kirinyaga University, Kenya School of Business and Economics, P.O. Box 15062-00100, Kenya.
[2]University of Nairobi, Kenya School of Open and Distance Learning, P.O. Box 30197-00100, Nairobi, Kenya.

Article History
Received: 21.04.2020
Accepted:28.05.2020
Published: 29.05.2020

Journal homepage:
https://www.easpublisher.com/easjhcs

Quick Response Code

Abstract: The study sought to determine how the implementation of school infrastructure policy influence the performance of construction projects in primary schools in a post-war environment. The study used empirical data to show that policy implementation on its own is ineffective to realise the policy goals without working through a mediating variable such as changes in practice. The study took a correlational design and was done as a cross-sectional survey targeting a population of 920 headteachers and 86 District Education Officers (DEOs). Purposive and stratified random sampling with replacement was used to sample 257 head teachers and 22 DEOs for the study. Headteachers participated in the study by filling questionnaires while DEOs were interviewed. The study focused on school construction projects done between 2014 and 2018. The findings indicated that policy implementation had little direct linking to the realization of policy goals. School infrastructure policy implementation had an insignificant influence on the performance of construction projects leading to the recommendation that a mediating variable may be needed to bring out the influence. Schools perceived the infrastructure policy positively but were hampered in its implementation by a shortage of funds. Lack of access to the entire policy by various headteachers and failure to train the headteachers on the policy were both impacting the policy's implementation at the school level negatively. The study was limited to the 13 regions of Somaliland. Whereas much is known about policy and construction projects in general, this study focused on school infrastructure policy implementation and how it influences the performance of construction projects in a post-war environment in a poor country, an area with scanty current literature.

Keywords: Policy, School Infrastructure Policy, Policy Implementation, Performance, Construction Projects, Projects, Somaliland, Primary Schools, School Projects.

Copyright @ 2020: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

School Infrastructure policy is one of the numerous regulations that make up an education policy. It regulates the establishment of physical infrastructure and investments in physical facilities in schools. The policy covers aspects of school infrastructure among them, financial capitation, facilities design standards, minimum facility requirements, support infrastructure regulations, guidelines for partnerships with the community and other stakeholders among others, and vary from country to country. Even within a country, the policy may vary from state to state due to different legal-political jurisdictions and different macro environments. School infrastructure policy also entails establishments that supervise, monitor and evaluate the schools (Organization for Economic Co-Operation and Development, 2013).

Policy has two aspects: Policy Interpretation (PI) and Policy Administration (PA) (Brown *et al.*, 2006). Policy interpretation entails policy substance interpretation and policy resource interpretation. Substance interpretation refers to how parties understand the policy content and may vary from one party to the other as parties adopt varied understandings of the policy. Even when the policy substance is well expressed and clearly stated and much effort has gone to eliminate ambiguities in the policy, implementers and stakeholders often have differing policy interpretations owing to different levels of education, varied exposure to the policy, individual determination to acquaint with the policy content, individual interest, level and frequency of contact with the policy, among others. Policy resource interpretation defines the capacity, resources and other requirements necessary in the implementation of the policy (Brown *et al.*, 2006).

Policy administration is the 'how' of the policy. It specifies how the policy is implemented, is administered, functions, and the parties involved in the policy administration process. For school infrastructure

***Corresponding Author:** Mr. Stephen J. Kamau

policy, policy administration may cover the aspects of schools' infrastructure policy administration system, school infrastructure inspections practices, policy certainty, accountability of the regulator, the impartiality of the regulator, and regulator limpidity among others. Policy administration may differ from region to region due to the policy administration system set in place. In cases where different bodies implement the policy in different geographical locations within a country, administration of the policy will experience different implementation methodologies, practices, severity in enforcement, and results. The variations in the policy administration widen where the overall policy owner or regulator lacks the resources and capacity to closely supervise the policy administrators or to audit their work. In cases where the overall regulator lacks the power to punish failures and policy offences of the policy administrators, the policy administration process is at the whims of the administrators and suffers distortion, corruption and other damages and the policy goals may not be realized.

School construction projects often tend to be infrastructural in nature, either establishing new infrastructure or maintaining and repairing currently existing infrastructure. Measuring performance of infrastructure projects is necessary and a blend of subjective and objective measures can be used as proposed by Proposed by Chan and Chan (2004), among them: output realization, disparities from the original project plans, finishing within the schedule, finishing within budget, realization of standards, realization of scope, attaining functionality; contentment of the customer, implementers, users, engineers, and the management with the project.

The study was done in Somaliland and sought to measure the influence of school infrastructure policy implementation on performance of construction projects mounted in Somaliland's public primary schools between 2014 and 2018. Somaliland had experienced armed conflict during the Somalia war which saw school infrastructure extensively destroyed. Since their declaration of independence from Somalia in 1991, it took many years to restore peace and normalcy in the state and for the reconstruction process to begin.

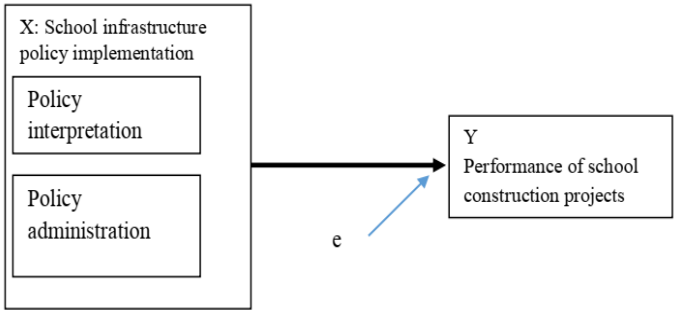
LITERATURE REVIEW

School infrastructure policy is not only meant to standardize infrastructure practices in schools but also to result to school infrastructures that are fit-for-purpose, conducive for learning and other school activities and that are adequate and safe for the learners. The policy aims to improve the learning experiences of the learners by setting standards for school physical facilities. One study found that when a school infrastructure policy is well communicated, clearly understood and sustainable, significant increases in school infrastructure facilities can result (Kuzich, Taylor and Taylor, 2015). Infrastructure decisions are long-term and hence the school infrastructure policy should be both stable and sustainable for the school administrators to use otherwise, if the policy suffers frequent changes it will be challenging for schools to comply and the result could be suppressing infrastructure development in schools. One study found that changes in school siting policy made at the state level with the goal of making school infrastructure siting more flexible at the schools' level did not impact school infrastructure siting practices and expansion since the state changes were not matched by changes in the district policies and the schools' policies (McDonald *et al*., 2014). This highlights the dilemma of how to enforce policy relaxation changes. Ordinarily regulators go all out to enforce policy review changes that tighten the policy or are perceived by the regulated parties to have a negative impact on them and their operations. Much publicity and public education is done in order to realize compliance. But when the policy is relaxed and some provisions are removed aimed at realizing a positive impact on the regulated and their operations, the regulators do not enforce such changes, sometimes they are not even announced or effectively communicated, there is no public education and often such changes are done quietly.

Over time school infrastructure policies get outdated and require review. If the policy is not reviewed when the need arises its continued implementation may exert a negative effect on school infrastructure project performance. One study found that industrial policy reviews improved industrial performance and where there were no policy reviews industrial performance eventually declined (Nagaraj, 2003). Policy reforms that investors perceived to be positive increased industrial performance as investors gained more confidence while policy reviews that were perceived as suppressive reduced performance as investor confidence waned and they kept off. Anticipated policy changes can have the same effect as actual policy changes.

The study sought to test the following model:

Figure-1: Conceptual model



METHODOLOGY

A cross-sectional study design was used. The study's target population was 1002 respondents made up of 920 public primary school head teachers from the 920 public primary schools in Somaliland and 82 District Education Officers (DEOs) from the 82 administration districts of Somaliland. A sample of 257 head teachers and 22 DEOs was determined at 95% level of confidence using the large population sampling formula (n=z2 (P)(Q)/ α2) with the Cochran finite population correction. The sample was drawn using purposive sampling to sample 735 head teachers and 56 DEOs and Proportionate stratified random sampling with replacement to draw 257 head teachers and 22 DEOs from the purposively sampled sample. The head teachers participated through filling questionnaire's while DEOs were interviewed. The questionnaire had 25, 5-point Likert scale items and open-ended items.

Pilot testing of the questionnaire was done on 28 head teachers. Cronbach alpha coefficient was applied and showed the questionnaire to be reliable (α = 0.969 for PI, α = 878 for PA and α = 0.826 for Y). The validity of the questionnaire was ensured through empirical literature review, pilot testing and peer review. Quantitative data were analyzed using descriptive statistics, correlation analysis and regression analysis. Interview data were analyzed through thematic analysis.

The following hypothesis was tested:

$H_{O:}$ School infrastructure policy implementation (X) has no significant influence on the performance of construction projects (Y).

DATA, FINDINGS AND DISCUSSIONS

The response was 247 (96.1%) for head teachers and 20 (90.9%) for DEOs. The data was subjected to normality, multicollinearity, homogeneity of variance and independence of error term tests to determine its suitability for parametric analysis. The Kolmogorov-Smirnov test showed the data for: Policy Interpretation [$D(247) = 0.053$, $P = 0.095$], policy administration [$D(247) = 0.057$, $P = 0.052$] ,and performance of construction projects [$D(247) = 0.046$, $P = 0.2$] to be from a normal distribution. The tolerance value (TV) and VIF were: TV= 0.657, VIF =1.523 for Policy Interpretation and TV = 0.782, VIF = 1.279 for policy administration which shows no multicollinearity. The Levene statistic was $F(29,212) = 1.087$, $P = 0.355$ for Policy Interpretation and $F(29,212) = 0.907$, $P = 0.608$ for policy administration indicating the variances in Y were constant for different values of independent variables. The Durbin Watson statistic was $D = 2.070$, which shows that the error terms were independent. It was determined that parametric test could be applied to analyze the data.

Table 1. Grouped Data on the Study Variables

Variable	Response category	Frequency	Percent	Mean	Standard Deviation
Performance of construction projects	Disagree/low (10<26)	68	27.5	29.60	7.12
	Not sure (26<34)	109	44.2		
	Agree/high (34≤50)	70	28.3		
	Total	**247**	**100.0**		
School infrastructure policy interpretation	Disagree/low (10<26)	64	25.9	30.64	8.67
	Not sure (26<34)	91	36.9		
	Agree/high (34 ≤50)	92	37.2		
	Total	**247**	**100**		
School infrastructure policy administration	Disagree/low (10<26)	54	21.9	32.41	8.85
	Not sure (26<34)	85	34.4		
	Agree/high (34 ≤50)	108	43.7		
	Total	**247**	**100**		

The quantitative data was grouped into "disagree", "not sure" and "agree" clusters. All negative items were reverse scored. The data is presented in Table 1.

Respondents were lukewarm on the performance of construction projects with 68 (27.5%) indicating law performance, 70 (28.3%) indicating high performance and 109 (44.2%) indifferent. The mean score of 29.60 indicates the respondents were lukewarm on whether performance of construction projects was low or high. The standard deviation of 7.12 shows the response for this variable were more compact and consistent as compared to the other variables. This shows that some head teachers had had their construction projects performing well, others had a poor performance of their projects while others could not rate their projects as having performed well or not. On policy interpretation, 64(25.9%) head teachers indicated they had experienced policy interpretation issues concerning the school infrastructure policy while 92(37.2%) had not experienced and 91(36.9%) were not sure. Further analysis revealed that the head teachers

who had encountered policy interpretation issues were mainly from rural schools. The mean score of 30.64 and standard deviation of 8.67 show the average response was in the "not sure" category and the responses for policy interpretation were more dispersed when compared to the dependent variable. On policy administration, the response was favorable when compared to the other variables with a mean of 32.41 but had the highest dispersion of responses with a standard deviation of 8.85. Of the head teachers surveyed, 108 (43.7%) indicated the school infrastructure policy was administered well, 54 (21.9%) indicated that the policy administration was wanting while 85 (34.4%) head teachers were indifferent. This shows that more head teachers were favorable on the manner in which the school infrastructure policy was being administered by the Ministry of Education and Higher Studies (MoEHS).

Head teachers had a positive attitude towards the policy and many indicated that the policy was good for the schools. The study found that the policy was being implemented in schools even though MoEHS, short of resources, had not been actively enforcing the policy. This shows that when the regulated parties like a policy, they comply voluntarily requiring little enforcement. The head teachers had not been trained on the school infrastructure policy, many head teachers reported not having access to the entire policy which was scattered as clauses in different policy documents. These findings were confirmed by DEOs in the interviews.

Regression Analysis

Multiple regression analysis was applied with policy interpretation and policy administration as the explanatory variables and performance of construction projects as the dependent variable. The results are in Table 2 and Table 3.

Table 2. Multiple Regression Model

					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df 1	df 2	Sig. F Change
1	0.089	0.008	0.000	7.12457	0.008	0.983	2	244	0.376

Note: Predictors: Policy interpretation and Policy administration; n =247, α = 0.05

R^2 was 0.008 implying that school infrastructure policy implementation (operationalized as Policy interpretation and Policy administration) explained only 0.8% of the changes in the performance of construction projects. This leads to the inference that school infrastructure policy implementation alone does not directly predict the performance of construction projects in a significant way. This finding supports the policy theory that policies work by altering management and operational practices (OECD, 2013; Haddad and Demsky, 1995) hence the need for an intervening variable in the relationship. The findings also show that schools that supported the school infrastructure policy but did not undertake construction projects did not experience changes in the performance of their construction projects. Policy is therefore effective to the extent to which it is implemented and policy on its own has little capacity to realize its goals. Policy goals are realized when the parties to the policy seek to regulate, implementation and compliance with the policy and its provisions.

Table 3. Regression Coefficients.

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for b**		**Correlations**		
Model	b	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
Constant	29.201	2.068		14.123	0.000	25.128	33.274			
PI	0.069	0.055	0.084	1.257	0.210	-0.039	0.178	0.064	0.080	0.080
PG	-0.053	0.054	-0.066	-0.984	0.326	-0.160	0.053	-0.040	-0.063	-0.063

Note: Dependent Variable: Performance of Construction Projects.
PI: policy interpretation, PG: policy administration. n =247, α = 0.05

The constant (29.201) is statistically significant (P<0.001). The *b* value for policy interpretation (0.069, p=0.210) shows a small positive influence that policy interpretation exerts on the performance of construction projects but is not significant. The *b* value for policy administration (-0.053, p=0326) indicates a small negative insignificant influence on the performance of construction projects.

From the data the following model (1) is drawn:

$$Y = 29.201 + 0.069X_{1a} - 0.053\ X_{1b} + e;\ e=0.109 \quad (1)$$

Where:

X_{1a} – Policy interpretation (independent variable)
X_{1b} – Policy administration (independent variable)
Y - Performance of construction projects (dependent variable)
e- The disturbance term

These findings lead to the inference that where no school projects are undertaken and therefore project management practices are not being practiced (is not in the model) implementation of the school infrastructure policy yields no change in project performance. The total effect of school infrastructure policy implementation on the performance of construction projects is insignificant which shows that little relationship is there between the two variables in the absence of a mediating variable. This finding adds backing to the policy theory that policy does not directly affect performance but works through altering operational and management practices which result in variations in performance (Tiongson, 2005; Coglianese, 2012).

Testing of Hypothesis

The following hypothesis was tested (α = 5%):

H_O: School infrastructure policy implementation (X) has no significant influence on the performance of construction projects (Y). $H_O: b = 0$
H_A: School infrastructure policy implementation (X) has a significant influence on the performance of construction projects (Y). $H_A: b \neq 0$

In the model, the *b* values for both Policy interpretation (0.069, p=0.210) and Policy administration (-0.053, p=0326) are statistically insignificant leading to the rejection of the null hypothesis and acceptance of the alternative hypothesis. School infrastructure policy implementation has no significant influence on the performance of construction projects. This shows the need for a mediating variable to help explain the relationship.

In qualitative data, the study found that complying with school infrastructure policy often increased the costs of school infrastructure projects as experts had to be engaged and meeting the standards set out in the policy meant use of more resources. This in itself leads to a reduction in the number of projects mounted in the short term and medium term assuming the schools' financial resources remain the same and reduces performance of the projects Other studies with similar findings include (Kuzich, Taylor and Taylor, 2015; McDonald *et al*., 2014).

CONCLUSIONS AND RECOMMENDATIONS

Head teachers had a positive outlook on school infrastructure policy, they embraced it and believed it could improve school physical facilities. A positive attitude on the policy by the parties it seeks to regulate is necessary for the policy to be successful. Where the regulated parties have a negative attitude towards the policy, they deliberately violate the policy or out rightly ignore it and seek to frustrate it requiring the regulator to use much capacity and resources to enforce the policy. The school infrastructure policy administration system was found to be ineffective, yet the school still implemented the policy even though it was not being enforced because they believed it was good for the schools.

School infrastructure policy implementation had no statistically significant total effect on the performance of school construction projects and is therefore not a key predictor without a mediating variable. Like other regulatory policies, school infrastructure policy is viewed as a restriction and complying often means incurring more costs thus increasing the costs of mounting projects. Stricter enforcement of the school infrastructure policy tended to reduce the number of construction projects mounted in the schools in the short run in the urban areas where there was more enforcement of the policy as compared to rural areas. Low capitation to the schools by the government, lack of training of head teachers on the policy, ineffective policy administration system and lack of access to the policy by head teachers in remote regions were found to deter implementation of the school infrastructure policy. The school infrastructure policy existed not as one document but as scattered provisions in different MoEHS policy documents which significantly limited access to the entire policy by head teachers as not all of them had access to all the ministry's policy documents.

REFERENCES

1. Brown, A. C., Stern, J., Tenenbaum, B., & Gencer, D. (2006), "Handbook for evaluating infrastructure regulatory systems". Washington, D. C.: The World Bank.
2. Chan, A. P. C., & Chan, A. P. L. (2004), "Key performance indicators for measuring construction success". Benchmarking: *An International Journal*, *11*(2), pp. 2003-221.
3. Coglianese, C. (2012). "Measuring regulatory performance: Evaluating the impact of regulation and regulatory policy," Expert paper No. 1. Paris, France: OECD.
4. Haddad, W. D., & Demsky, T. (1995)," Education policy-planning process: An applied framework." UNESCO: International Institute for Educational Planning.

5. Kuzich, S., Taylor, E., & Taylor, P.C. (2015), "When policy and infrastructure provisions are exemplary but still insufficient: Paradoxes affecting education for sustainability in a custom-designed sustainability school". *Journal of Education for Sustainable Development, 2* (9), pp. 179–195.
6. McDonald, N. C., Salvesen, D. A., Kuhlman, H. R., & Combs, T. S. (2014), "The impact of changes in state minimum acreage policies on school siting practices". *Journal of Planning Education and Research, 2*(34), pp. 169–179.
7. Nagaraj, R. (2003), "Industrial policy and performance since 1980: Which way now?" Economic and Political Weekly, *35*(38), pp. 3707-3715.
8. Organization for Economic Co-operation and Development. (2013), "Educational policy outlook," Ireland. Author.
9. Tiongson, E. R. (2005), "Education Policy Reforms. In Paternostro, S., & Coudouel, A., (Eds.)". Analyzing the distributional impact of reforms. Washington DC: World Bank. pp.261-294