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BUDGETARY LEAKAGES AND ITS IMPACT ON VALUE DELIVERY IN SECONDARY SCHOOLS: A CASE STUDY OF NAKURU COUNTY, KENYA

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Abstract

This study investigated the phenomenon of resource leakage, particularly through budgetary variances, in secondary schools in Nakuru County, Kenya, and its impact on academic performance. The inconclusivity of research in determining the effect of leakage of financial resources informed this study as a problem that needed to be addressed. The problem was further compounded by recent parental complaints on schools overcharging despite government subsidy in Education. Drawing on Agency theory and Contract theory, the research aimed to understand the extent of resource mismanagement and its implications on value delivery. A survey design incorporating both quantitative and qualitative methods was employed, involving a sample of 33 secondary schools. Data analysis revealed significant deviations from allocated budgets, indicating deliberate leakage of resources. Surprisingly, despite expectations of a negative correlation, budgetary variances showed a positive association with KCSE performance, suggesting complex dynamics influenced by fee structures and parental involvement. The findings underscore the need for strengthened oversight mechanisms, improved accountability, and enhanced financial management practices in secondary schools to mitigate resource leakage effectively and ensure optimal value delivery. Further research is recommended to explore the underlying factors driving this relationship and promote proBudget management

***Keywords**: academic performance, budgetary leakages, value delivery*

Introduction

Research has been inconclusive as far as effect of financial resources on academic performance is concerned. Previous researches attempted to directly connect financial resources to academic performance. The result was that they could not establish the relationship (Musungu Inganga Daniel et al., 2023). What this findings seem to suggest is that even without financial resources schools would still perform. This in itself is not true. Other studies have contended that financial resources are important and do influence academic performance (Abana, 2022; Musungu et al., 2023). This disconnect between what looks reasonable and research findings informed this study to try and find out what could be the explanation of this dilemma (Ochanda, 2023). This study postulated that it is accountability failure that overshadows the effect of financial resources on value delivery.

The government of Kenya is currently in the process of starting centers of excellence which are expected to yield high results after providing optimum resources to these centers. This is based on the premise that resources enhance academic performance (Omondi, 2021). If this is true, why is there this disparity between expectation and research results? Despite this premise, there is no systematic study that has been conducted to establish the effects of financial resources on performance in secondary schools when leakage of resources, misallocation of

the resources, accounting for the resources and governance structures are taken into account. It is thus in this context that this study sought to establish the effects of budgetary leakages on value delivery in secondary schools in Nakuru County in Kenya.

Research Objective

To examine the budgetary leakages and its impact on value delivery in secondary schools in Nakuru County, Kenya

Empirical and Theoretical Literature

The theoretical frame work of this research was based on the agency theory, the accompanying agency problem, and the contract theory, from the restricted view of attempting to solve the agency problem. Agency theory is concerned with the "ubiquitous agency relationship" in which, one party, the principal, assigns tasks to another party, the agent (Musa & Ibrahim, 2022). The agency problem arises due to a conflict of interest between the agent and the principal in terms of work that has been delegated to the agent by the principal (Nikula & Kivistö, 2020). Moral hazard and adverse selection make it difficult for the principal to ascertain that the behavior of the agent was appropriate. Where, in this case, moral hazard refers to the general lack of effort applied by the agent and adverse selection refers to the falsification of ability by the agent in carrying out his assigned task (Ankamah-Yeboah et al., 2021; Tewari & Ramanlal, 2022).

Separation of ownership and control has long been recognized to potentially have an adverse effect on the firm value. It is believed that the incentive to pursue personal benefits increases when the manager owns a small portion of the firm's share (Khatete, 2018). It is also expected that if the managers were to own 100% of the shares then agency cost would be zero. It has also been shown that the length of the chief executives tenure influence's their tendency to maximize their personal gain. The longer they stay the more inclined they are to identify with the organization. Their view of themselves becomes more psychologically integrated with the fate of the organization (Pavlidou & Efstathiades, 2021).

Accounting developed out of the need for the agent to explain to the principal, what he did with the resources which the principal entrusted to him (Pavlidou & Efstathiades, 2021). The agency theory envisages that the objectives of the agent and that of the principal conflict since the agent, is expected to optimize the wealth of the principal while subordinating his own interest for a contractual consideration (Kolawole, A. O., & Ogbiye, 2020). To imagine that the agent will optimize the interest of the principal at the expense of his own interest is inviting leakage. The contract theory addresses this by stipulating that the only way that the principal can ensure that the agent sticks to optimizing the welfare of the principal is to contract the agent and commit the agent to optimizing the welfare of the principal by ensuring that the contract document optimizes the agent's welfare and then closely monitor the agent to ensure adherence to the contract (Abana, 2022). Otherwise the agent will bargain hard for lucrative packs and then optimize their interest in the process of functioning especially where monitoring is poor

This implies that the perception of the agent as to the fairness of the contract document, plays a major role in ensuring that the agent sticks to the contract and the perks so provided, otherwise the agent will seek to optimize both principals interest and his own interest which implies that overall there will be a conflict of interest between agent's objectives and principal's interest

(Kolawole & Ogbiye, C A, 2020). The agency theory recognizes the fact that the principal has to monitor the performance of the agent and this brings or compounds the agency problem because the agent, threatened with termination is under pressure to maximize his interest as long as the agency exist (Musungu Inganga Daniel et al., 2023).

Agency costs include perks for the agent that is contract costs, monitoring costs, leakages, lost time and opportunity due to the laxity and complacency of the agents (Abana, 2022). Maintaining these costs at the minimum level may be seen as the agency dilemma as an attempt to reduce one can trigger an increase in the others or other. The control aspect involves both internal and external auditing, accounting and record keeping and internal control systems (Ochanda, 2023). Clearly, the head of the institution, his deputy, teachers and other workers are agents at different levels, since they do not act on their own behalf.

In for profit organizations, the principal is easily identifiable, cohesive and coherent in his objectives and demands on the agent. However, in a public school set up, the principal is rather amorphous. Is it the government, community, politician or parent's body, who is the principal? The luck of a clear cut identification of the principal makes the agent enjoy latitude which may not be available to the commercial sector agent and this necessitates tighter controls both internal and external (Atieno et al., 2019). On the other hand the government as an entity works through agents. It is these agents who supervise the other agents thus complicating the agency problem further.

This research project concentrated on the budgetary leakages where the agents through accounting for the finances availed to them, influence the ultimate purpose of their being there, academic performance. The project utilized the contract theory to develop an accounting system that engrains authorization procedures and controls to enhance monitoring and control. This research project also intends to find out whether the agency dilemma could be used to explain disconnects between availability of resources and academic performance.

Methodology

The study adopted a survey design, which includes a quantitative and a qualitative survey. The aim was to establish the prevailing governance status, accounting and auditing controls in place and resource leakage. The population of this study was all registered secondary schools both public and private in Nakuru County. There are 326 secondary schools; 199 being public and 127 private. In each institution, the head teacher, Heads of department (HODs), class teachers, Bursar/accounts clerk/finance officer, students, store keepers and suppliers were sampled to get those who were subjected to interviews and answering of questionnaires.

The register of schools in the respective district education office was used to form the sampling frame. The secondary schools were stratified according to ownership structure, that is, private and public schools. A sample of 33 secondary schools was taken out of the 326 secondary schools in the Nakuru County. The sample size was picked in proportion to the number of private and public schools in each district. The districts in Nakuru County are; Nakuru town, Nakuru North, Naivasha, Rongai, Njoro, Molo and Kuresoi. From the sampled schools, the Head teacher, bursar, Heads of departments, store keeper, class teachers, students and suppliers were interviewed. Due to expected non-response, which was estimated at 20% because of the sensitivity of the mater under investigation, a spare sample of 20% was taken. This sample

proved adequate and was used to replace the schools that either out rightly refused to fill the questionnaires or despite their initial acceptance failed to fill the questionnaires.

The researcher prepared questionnaires for the Head teacher, Deputy Head teacher, Heads of departments, accountant, teachers, students and Suppliers. With the help of two trained assistants, the researcher administered the questionnaires to the sampled schools.

The sample size was fixed using the coefficient of variation (CV), which is defined as, ratio of population standard deviation to Population mean. Since the CV tends to remain stable over time and with increasing population size, it is a reliable measure for use in sample size determination (Gathii et al., 2019). In most experiments or surveys, a coefficient of about 30% is usually acceptable for sample survey work. The sample size was then obtained using the formula; $n = \frac{NC^2}{C^2 + (N-1)e^2}$, where C is the coefficient of variation, e is the error margin we wished to tolerate in the measurements and N is the population size. An error of 5% was considered acceptable since the results are for policy purposes and not for sensitive decisions where a small error would be detrimental that is where very high levels of assurances are required. The sample was determined as follows; Where n is the sample size, N=population size (336), C= coefficient of variation (0.30) and e= error margin we wish to tolerate (0.05) thus, n = 326*0.3*0.3/[0.3*0.3 + (326-1)*0.05*0.05] = 32.5 aprox. 33. This is about 10% of the whole population. Gay (1992) suggests that a sample of 10% should be considered minimum for a large population and 20% for a small population. One shortcoming of this method is its luck of statistical justification which applies to many other suggested methods of fixing sample size. It should also be noted that 33 is considered a large sample in statistics. The distribution of the schools in the county were as shown in Table 1.

Table 1: Distribution of Secondary Schools in Nakuru County According to Districts

Ownership	Number of schools per District							total
	Nakuru town	Naivasha	Nakuru North	Njoro	Molo	Rongai	Kuresoi	
Public	21	42	30	21	18	28	39	199
Private	25	34	39	3	8	14	4	127
Total	46	76	69	24	26	42	43	326

Thus using the formula, $n_h = \frac{NC^2}{C^2 + (N-1)e^2}$. The samples were distributed as illustrated in Table 2

Table 2: The Proportional Allocation of Sampled Respondents According to Districts

Ownership	Number of selected samples per category of schools per District							
	Nakuru Town	Naivasha	Nakuru North	Njoro	Molo	Rongai	Kuresoi	Total
Public	4	5	2	2	2	3	4	22
private	2	3	3	1	1	1	1	12
Total	6	8	5	3	3	4	5	34

The number of heads, bursars, laboratory assistants and store keepers were equivalent to the number of schools sampled as each school has one respectively. There are 7 heads of

department in each school thus there were 2282 heads of department and the number of heads of department to be interviewed was determined using the sample size formula sited above were 36. In every school visited, a head of department was chosen at random. The exception was only in three schools were two heads of department sampled in the whole of Nakuru County and the same was done for class teachers. Since there were 77053 students divided into 40943 boys and 36110 girls, applying the sample size formula, 225 boys and 225 girls were sampled. For every school sampled, 2 Form II, 2 Form III and 3 Form IV students from each school sampled, were randomly sampled and requested to fill the questionnaire.

Results and Discussion

The objective of this study was to establish the extent of resources leakage in secondary schools in Nakuru County and its relation to value delivery. To establish budget leakage, the study identified some commonly used items (maize, beans, rice, cooking fat, salt, kales, cabbages, printing papers, fool's caps and fire wood) to form a basket of goods. The deviations from the mean that were subjected to the analysis including budgetary leakages and perceived leakage were as given by table 3.

Table 3: Summary of Data on Leakage of Financial Resources Used for Analysis.

School Id	1	2	3	4	5	6
Total price for the basket	30,725	26,320	29,352	66,428	20,140	31,036
Budgetary leakage	57,000	47,880	-1,014,626	-365,000	-196,194	16,000,000
KCSE av. Performance	8.41	5.4	6.45	3.6	8.208	8.78
improvement index	0.356	0.5	-0.232	0.13	-0.067	0.155

Table 3: Continued

School ID	7	8	9	10	11	12
Total price for the basket	17,660	18,855	25,284	37,502	26,364	22,545
Budgetary leakage	100,000	14,749	330,000	22,000	-1,346,503	-72,5120
KCSE av. Performance	-	4.55	6.036	4.2	5.947	-
improvement index	-	1.275	0.041	-0.045	-0.174	-

Table 3: Continued

School ID	13	14	15	16	17	18
Total price for the basket	24,590	27,747	29,052	26,943	20,765	15,568
Budgetary leakage	-,1299,041	244,225		-804,530	58,306	-49,400
KCSE av. Performance	-	9.111	4.522	7.6	5.102	3.7
improvement index	-	0.0123	0.256	-0.156	-0.150	-0.075

Table 3: Continued

School ID	19	20	21	22	23	24
Total price for the basket	32,893	21,365	33,370	24,552	-	-
Budgetary leakage	-12,173	-	-931,198	-	-	-
KCSE av. Performance	5.186	2.597	4.724	4.36	-	-
improvement index	-0.259	0.855	-0.156	0.453	-	-

Table 3: Continued

School ID	25	26	27	28	29	30
Total price for the basket	25,435	0	0	39,818	0	0
Budgetary leakage	-	-	-	-1,360,256	-	-
KCSE av. Performance	4.6	2.8	-	4.354	3.1	8.88
improvement index	0.278	-0.462	-	-0.972	-0.981	0.11

Table 3: Continued

School ID	31	32	33	34
Total price for the basket	15,850	0	27,035	29,910
Budgetary leakage	-75,000	-	10,193	-
KCSE av. performance	4.72	-	4.42	5.15
improvement index	1.36	-	-0.26	0.43

The school ID has not been disclosed due to ethical issue as the respondents were promised that, that would not happen. The reader is also advised to maintain discretion in identifying the schools. Table 3 is a summary of the data that was used to generate table 4.

When the data in table 4 were subjected to analysis through SPSS the following summary of the results was relevant to this section.

Table 4: Hypothesis Test Summary

Null hypothesis	Test statistics	Sign. Pr>z	Decision criteria
The distribution of budgetary leakage is normal with mean score 256,038.61and a standard deviation of 2,820,701.95	One sample kolmogolov smirnov test	.000	Reject the H_o
The distribution of budgetary variance is normal with mean of 570,998.67 and a standard deviation of 3,250,128.66	One sample Kolmogolov Smirnov test	0.000	Reject the H_o

Under these circumstances, when a one sample Kolmogolov Smirnov test was carried out on the results with the null hypothesis $H_0 : \mu = \mu_0$, the test statistics was $Z_0 = \frac{\bar{x} - \mu_0}{\sigma / \sqrt{n}}$ the probability that this could not have occurred by chance are presented in Table 4 results are reported below.

The extent of leakage of resources in secondary schools was also measured using the actual spending deviations from the budgetary allocation. Using this budgetary variance as measures of leakage, Kolmogolove Smirnov one sample test was applied under the hypothesis that the budgetary variance is normal with a mean of 570,998.57 and standard deviation of 3,250,128.57 with a significance value of p= 0.000. This value is lower than the critical value of 0.025 for a two tail test. The verdict was that there was no sufficient evidence to support the null hypothesis and hence the null hypothesis was rejected at p=0.000. What this means is that the deviations were significant so as to reject the null hypothesis and accept the alternate hypothesis that the deviations are not normally distributed. This means that the deviations of actual expenditure from the budgets are not by chance, the deviations are significant and that schools use the deviations to leak resource. On further observations it was observed that the

bar graphs indicated a negative skew. This means that there are more deviations that are on the higher side than on the lower side.

The analysis as seen in 4 clearly indicates that budgets are used to leak resources by having the budgets agreed on and then overspending beyond the budgetary provisions. This is well in agreement with the possibility that the budgetary analysis may not be taken seriously as exaggerated prices would. This is in agreement with the findings of (Ochanda, 2023) who identified budgetary and management inefficiencies as factors that impair effectiveness of education spending. This means that the policy makers must view the budget as a possible avenue through which resources could be lost. It was also sadly noted that segregation of duties in secondary schools is very poor and those that deal with financial issues are the head of the institutions and the bursars (Musungu et al., 2023). All other school community members have very little access to information to do with financial matters other than that available to the public. The implication of this is that while exaggerated prices may require corroboration between the supplying entity and the accounting officer for the officer to be given his cut, budgetary leakage would not involve third parties as the accounting officer simply needs documents to show supply and the documents can either be factitious or from a real supplier who may not even be aware (Kipkemoi & Gacuiri, 2018). To establish this possibility a study needs to be carried out where all suppliers can be circularized to determine whether all supply documents are authentic.

Rather than use pricing to leak resources and draw attention to themselves schools use budgetary allocation to leak resources. This was a surprise finding as one would expect that school accounting officer would face other officers in requesting for virement than use prices to leak resources. Another interpretation would be that the virement procedures might not be followed closely thus allowing officers to adjust budgets without asking for virement. This is an area that may require further study to establish the actual situation.

Table 5: Spearman's Correlation Coefficients on Leakage and Value Delivery

		KCSE av. performance	improvement index
Budget Variances	Correlation Coefficient	.514*	.275
	Sig. (2-tailed)	.024	.254
	N	19	19

Budgetary variance is moderately positively correlated to KCSE performance with a correlation coefficient of 0.514 and a significance score of 0.024, which means that the probability that this correlation coefficient could have occurred by chance is 0.024 which is below the critical value for a 95% level of confidence. This means that there is no evidence for us to reject the null hypothesis that budgetary leakage is not correlated to performance at KCSE in secondary schools in Nakuru County. The positive correlation might be confounding since it would be expected that budgetary variance would be negatively related to KCSE performance as resources would be diverted from their course. One factor that is becoming more and more evident is that schools that perform well charge higher fees than ordinary schools and can escape with it in the same way they can leak resources without the fear of reprisal as parents are likely to turn the other way not to disrupt the "good work" being done by the school (Adhiambo & Juma, 2018; Mutula, 2021).

These findings could also explain the source of unbudgeted expenses like tuition pay, remedial fee, holiday tuition fee, and other incomes earned by teachers for off time table teaching. It should not be lost on us that most schools that can afford these payments are the well-endowed schools and no wonder budgetary leakage goes hand in hand with performance at KCSE. This would mean that parents play a role in leakage of resources by not taking an active role in reporting malpractice. This is also in agreement with earlier observation that school community tend to understate the extent of leakage and corruption in their schools. Budgetary variance is also slightly positively correlated to improvement index with a correlation coefficient of 0.275 and a p score of 0.254 meaning that the probability of the correlation having occurred by chance is 0.254 which is way above the critical value of 0.05 for a 95% level of confidence thus the correlation is insignificant and the null-hypothesis is accepted that there was no significant relationship between improvement index and budgetary variance.

Conclusion and Recommendation

The study conducted in Nakuru County secondary schools revealed a significant issue of resource leakage, particularly through budgetary variances, indicating deliberate deviations from allocated budgets rather than random occurrences. Findings suggest that schools utilize budgetary allocations as a means to leak resources, possibly due to inadequate oversight and accountability in budget management. Poor segregation of duties within schools, especially regarding financial matters, further exacerbates the problem, with limited access to financial information for school community members. Surprisingly, despite expectations of a negative correlation, budgetary variances showed a positive association with KCSE performance, suggesting a complex relationship influenced by factors such as fee structures and parental involvement. There is a clear correlation between leakage and KCSE performance. Which goes against expectations.

To address these challenges, it is imperative to strengthen oversight mechanisms and enhance accountability in budget management within secondary schools. This is to address the budgetary leakages. This entails improving segregation of duties and promoting transparency in financial operations to mitigate resource leakage effectively. Policy makers need to recognize the potential for resource loss through budgetary allocations and implement robust monitoring and enforcement measures. The findings of this study suggest a positive correlation between financial resources leakage and performance at KCSE. Thus further research is warranted to understand the underlying factors driving the positive correlation between budgetary variances and academic performance, with a focus on exploring the role of fee structures and parental engagement. Additionally, encouraging active participation from parents and stakeholders in reporting malpractice and advocating for financial accountability is essential. School administrators and education authorities must prioritize training and capacity building for financial management to ensure adherence to budgetary allocations and prevent further leakage of resources.

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