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Influence of Government Funding Initiatives on Provision of Physical Infrastructure in Public Secondary Schools in Murang'a County, Kenya

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Abstract:

Government investment and leadership provide long-lasting solutions to the huge challenges facing our societies. The government has a crucial role to play in physical infrastructure development in its ability to provide innovations in financing and technical solutions for these projects in schools. Despite Government funding initiatives, schools are still experiencing inadequate physical infrastructure. With the 100 percent transition rate, Murang'a County recorded the highest transition rate at 107.66 percent, having expected 25,313 students but ended up enrolling 26,720 students (MOE, 2023). This study, therefore, assessed the influence of government funding initiatives on the provision of physical infrastructure in public secondary schools. The study used a descriptive survey research design that focused on summarizing and describing the main features of the data set. The target population consisted of 310 school principals, 3720 teachers and 8 sub-county directors of Education. Data collection was done using questionnaires, observation and interview schedules. Stratified sampling was employed to ensure representation of all categories of public secondary schools. From the selected schools, principals and teachers were respondents in this study, while data analysis was done using descriptive statistics in regard to the adequacy of physical infrastructure funding. The national government funding initiatives have provided adequate physical infrastructure compared to other funding models. Therefore, with regard to the findings, the majority (70.9%) of the respondents agreed that government funding had supported the provision of physical infrastructure, while a minority (29.1%) of the respondents disagreed that government funding had supported the provision of infrastructure in public secondary schools in Murang'a County. The study established that the main sources of funding from the national government include CDF, MIF, LATIF and ESP. The study established that funding initiatives from the government had a positive correlation with the provision of physical infrastructure in public secondary schools in Murang'a County.

Keywords: Government funding, physical infrastructure, transition rate

1. Introduction

1.1. Background to the Study

Education is a fundamental human right, a key to sustainable development, peace and stability within and among countries in the world (Wolfsan, 2000). It is considered to be critical in determining the socio-economic development of a country as it is the most important factor in the social, cultural, political and economic development of any nation. Infrastructure refers to the physical structure that includes buildings such as classrooms, laboratories, sanitary facilities, tuition blocks, and other material resources and facilities required to meet students' needs in a school setup. Physical infrastructure can be defined as basic structures or facilities, installations, equipment, and buildings needed for the proper functioning of the social and economic systems of society (Grigg, 2000). The Republic of Kenya (2010) elaborated that the educational system has come up with inadequate materials, requirements, and activities that need to be increased at all levels of education to meet educational objectives. The appropriate curriculum proposed that laboratories, infrastructure,

equipment, workshops, classrooms and physical facilities should be provided to promote equity in education. MOE (2012) recognizes how important these resources are to students' academic achievement.

In United States of America (2012), the government provided 6.2 percent of its annual budget, in addition, extra 4 billion dollars grants for construction, renovation and improvement of classroom in government schools. This increased high school enrolments for Grade 9-12 from 14.6 million students in a population of 15.8 million students (World Bank, 2013). Education in Northern Ireland for many years, according to general consensus, has been an era of under-investment; most of the classrooms are temporary or mobile buildings. The Northern Ireland executive prioritized this area and planned capital expenditure of 108.9 million in the 2017/2018 financial year for infrastructure development and specific classroom construction. However, this amount never improved classroom construction and did not even bring North Ireland's ageing educational infrastructure up to modern standards (North Ireland Year Book, 2005).

1.2. Statement of the Problem

Government policy on FPE and FSE underscores the importance of education in Kenya. Despite the rising government spending on education over the years, more primary school graduates fail to secure places in secondary school, and the situation has persisted. The demand for secondary school education has kept on rising from year to year, especially after the introduction of FPE in 2003, and has never been fully met. Though this situation is blamed on the existence of limited secondary schools, the government expenditure on the education sector is already overstretched, as shown by the heavy budgetary allocation in relation to the other sectors (Republic of Kenya, 2016). 100 percent transition rate and FTSE education policy from primary to post-primary schools piled pressure on the existing infrastructure in schools. Furthermore, the diminishing physical infrastructure has thus lowered the primary school graduates' chances of enrolling and participating in secondary education, which has resulted in education wastage. However, despite its importance in the process of development, the costs of provision and expansion of quality secondary education have been escalating while resources for secondary education have been dwindling (Republic of Kenya, 2005). As a result, primary school education becomes terminal for those pupils who lack places in secondary schools, lowering the enrolments and participation rates.

The Government introduced infrastructure development funds in secondary schools to address the problem of physical infrastructure. However, the report at the Ministry of Education Murang'a County demonstrates that schools are facing a severe shortage of infrastructure, yet the ministry is setting aside funds for the same. In a research study on the impact of subsidized school funding on infrastructure development in public secondary schools by Mbaya and Masinde (2014), in which the researchers sought to establish the level of adequacy of Government funding towards infrastructure in the schools, the findings concur. Their findings indicated that the Government did not adequately contribute towards infrastructure projects in schools. According to a study done by Musalia (2005) and Kilonzo (2007), continual delays by the government in sending money to schools were hampering the development of infrastructure facilities in schools. Therefore, the study will aspire to determine the influence of Government funding initiatives on the provision of physical infrastructure in public secondary schools.

1.3. Purpose of the Study

The purpose of the study is to establish the influence of government funding initiatives on the provision of physical infrastructure in public secondary schools in Murang'a County.

1.4. Objective of the Study

To determine the extent to which the government funding initiative influences the provision of physical infrastructure in public secondary schools in Murang'a County.

1.5. Research Question

How does the government funding initiative influence the provision of physical infrastructure in public secondary schools?

1.6. Significance of the Study

The study promotes the effective and efficient utilization of funding from the government and its development partners allocated for infrastructure development in public secondary schools. The research findings can assist NGOs and donors in complementing government funding for infrastructure projects. Educational planners may leverage these findings to strategically plan infrastructure development in a more efficient manner. Additionally, the Parent Association (PA) and the Board of Management (BOM) can utilize the study's insights to enhance infrastructure in secondary schools, aiming to achieve the recommended student-to-infrastructure ratio.

2. Related Literature Review

The federal government in the United States plays a significant role in providing funds for school infrastructure and renovation, offering both direct and indirect aid for school expansion. State and local governments are primarily responsible for financing school construction and renovation through tax-free loans and grants (Cornman, 2012). The Centre for International Development Research (2015) noted that Constituency Development Funds (CDF) have been utilized in various countries, including the United States, the United Kingdom, India, Papua New Guinea, Comoros, Ghana, Zimbabwe, Tanzania, and Uganda, for school infrastructure development. While CDF has gained popularity, it has also been used to enhance development and governance in educational institutions in the United Kingdom, where it is referred

to as devolved schools' capital (Development Goals, 2012). However, research conducted in Malawi on the influence of CDF on school infrastructure development revealed that, despite allocations, many schools still face challenges, including inadequate facilities such as classrooms, teachers' housing, toilets, and water supply (Millennium Development Goals, 2012).

In Kenya, providing adequate infrastructure is crucial for increasing student attendance and improving academic achievements. However, stakeholders striving to achieve the Education for All (EFA) goal No. 2, which aimed for Basic Universal Education by 2015, face significant challenges due to poor physical infrastructure in schools. A report by the Government of Kenya (2012) emphasized that insufficient funding in post-primary schools negatively impacts the creation of a conducive learning environment. A low-quality learning environment contributes to declining academic performance and hinders students' chances of transitioning to higher levels of education and training (Obanyo, 2013). To address these issues, the government has been allocating funds to constituencies in Kenya through the Constituency Development Fund (CDF).

Year	CDF in Ksh.
2013/2014	21,973,899,997
2014/2015	31,564,500,000
2015/2016	33,452,350,000
2016/2017	23,750,000,000
2017/2018	25,174,999,760
2018/2019	31,621,853,900

Table 1: Total Allocation of CDF between 2013 and 2019 Countywide
Source: Kenya CDF Website, 2019

Various sources contribute to financing infrastructure development in public secondary schools in Kenya, including the Centre of Excellence Fund, Local Authority Transfer Fund, infrastructure grants from the Department of Education, and funds from the Economic Stimulus Package. In Murang'a County specifically, funding is also obtained through allocations from the County Government in the form of grants and local harambee efforts (Ngethe, 2004). When discussing funding, the primary consideration is often the availability of financial resources to meet specific project or program needs. Funding involves distributing available capital to address organizational needs. According to the Online Business Dictionary (2013), funding refers to the provision of financial resources to fulfill a need, project, or program. Schools may raise the money required for various projects from both internal and external sources. Once generated, funds are typically allocated according to the school's needs, a process known as funding.

The government serves as a major sponsor of education in many countries, with public school funding being one of its key responsibilities (Hall, 2013). This funding is managed through the preparation of an annual budget that addresses the needs of various sectors, including education. Additionally, supplementary budgets are often prepared to address financial shortfalls in the education sector. Different levels of government—local, state, and federal—contribute to educational funding (Hall, 2013). Thus, the government plays a crucial role in financing education through annual budgetary allocations. To enhance the educational sector, continuous increases in funding allocations are necessary to boost the availability of financial resources for managing school systems.

According to Sullivan and Shiffrin (2003), infrastructure encompasses the products, services, and facilities essential for an institution's functioning. Consequently, the ability of the school system to achieve its objectives relies heavily on the availability of these resources. Infrastructure is vital for facilitating learning in any educational institution. Eseyin, Okafor, and Uchendu (2014) assert that "infrastructures play a significant role in the provision of quality education in any nation." These resources support the dissemination, assimilation, and transmission of knowledge. However, without adequate funding for the provision and maintenance of these facilities, existing structures may deteriorate due to wear and tear and lack of upkeep. Funding is also critical for upgrading facilities to align with modern educational trends.

2.1. Theoretical Framework

This research will be grounded in the education production function theory proposed by Mace (1979). This theory assesses the relationship between outputs and inputs, emphasizing the economic relationships that determine maximum outputs based on specified inputs. In this context, education is viewed as a productive activity resulting from various combinations of production factors, which include labor and capital. The inputs necessary for education encompass time, human capital, material resources, and facilities, all of which contribute to the successful progression of students from one educational level to the next.

The theory is particularly relevant to this study because, akin to a production process, government funding initiatives serve as critical inputs that facilitate the development of adequate physical infrastructure in public secondary schools. This infrastructure is essential for accommodating a larger number of students as they prepare for subsequent levels of education. Variations in government funding initiatives (inputs) are likely to significantly influence the provision of infrastructure development (outputs). Psacharopoulos (1985) further illustrates this concept by presenting education as a simple function:

$$Q=f(K)$$

Where:

Q= Physical infrastructure

K= Government Funding

The amenities associated with infrastructure play a crucial role in facilitating the teaching and learning process. Moreover, educational performance has commonly been evaluated based on the number of years spent in school. The significance of school achievement, as evidenced by rigorous assessments of student skills, is supported by extensive research on labor market outcomes (Psacharopoulos & Patrinos, 2004).

3. Research Methodology

3.1. Introduction

This section explores a technique adopted in carrying out the study. It entailed the target population, sample size, research design, and sampling procedure, as well as the tool used to collect data and analyze it, the presentation method, and the reliability and validity of the research instruments.

3.2. Research Design

The research design adopted for this study was a qualitative and quantitative design. The blending of qualitative and quantitative methods neutralized bias sought convergence of results and produced a final product that highlighted the significant contribution of both approaches, which easily use numeric and word data.

3.3. Target Population

This refers to a group of a real or hypothetical set of populations. The target population, as indicated in the Ministry of Education Murang'a County office, comprised 310 principals and 3720 teachers from 310 public secondary schools in Murang'a County. It also comprised 8 sub-county directors of education, totaling 5268 participants.

3.4. Sample Size and Sampling Procedure

Category of School	Number of Schools	Sample Size	Percentage (%)
National	2	2	0.6
Extra-County	28	12	3.87
County	32	12	3.87
Sub-county	248	24	9.68
Total	310	50	18.02

Table 2: Public Secondary Schools in Murang'a County

Gay (2006) proposed correlation studies for descriptive analysis, where at least 30 cases were required. Additionally, 10 to 30 percent of the target population was enough and appropriate for an experimental design, where at most 30 cases were required.

Category of Schools	Number of Teachers	Sample size	Percentage (%)
National	90	10	1.5
Extra-County	840	60	9.0
County	840	60	9.0
Sub-county	1950	70	10.5
Total	3720	200	30.0

Table 3: Number of Teachers in Murang'a County Public Secondary Schools

3.5. Research Instruments

Questionnaires and interview schedules were the main data collection instruments; they were designed and questions structured to achieve the research objectives. The main method of data collection was the use of a questionnaire. A questionnaire is a collection of items to which a respondent is expected to answer in writing (Muntaz, 2000). The questionnaire was ideal for collecting data from principals and teachers.

4. Data Analysis, Interpretation and Discussion

4.1. Introduction

This chapter presents the findings derived from the data collected during the study. The researcher interpreted these results in alignment with the specific objectives of the research. It begins with a summary of the general information gathered, followed by interpretations of both quantitative and qualitative data collected through questionnaires and interviews with the sub-county director of education, teachers, and principals.

4.2. Status of the Schools

This study also found it necessary to find out from principals the status of the schools they were heading. The results obtained are shown in figure 1.

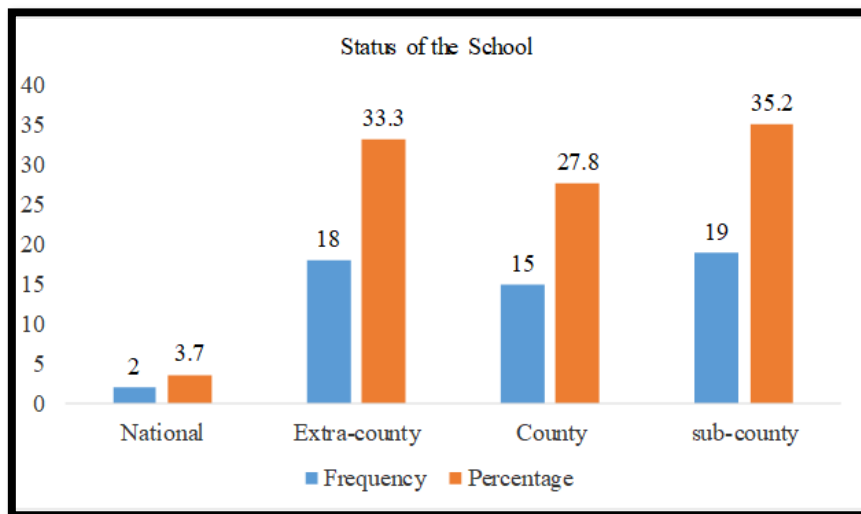


Figure 1: Status of the School

The findings in figure 1 reveal that the majority of schools in Murang'a County (35.2%) are sub-county schools, which are the primary beneficiaries of government funding, particularly through the Constituency Development Fund provided by Members of Parliament. Additionally, only 3.7% of the schools in the county are National schools. Most Kenyan children attend day schools, commuting to and from home each evening. Consequently, there is a pressing need for infrastructure improvements in sub-county schools to accommodate the increasing number of students, especially in light of the 100% transition rate to secondary schools.

4.2.1. Form One Admission between the Years 2018 and 2022

The respondents were asked about form one admission in the last five years in their respective schools; the response was shown in figure 2.

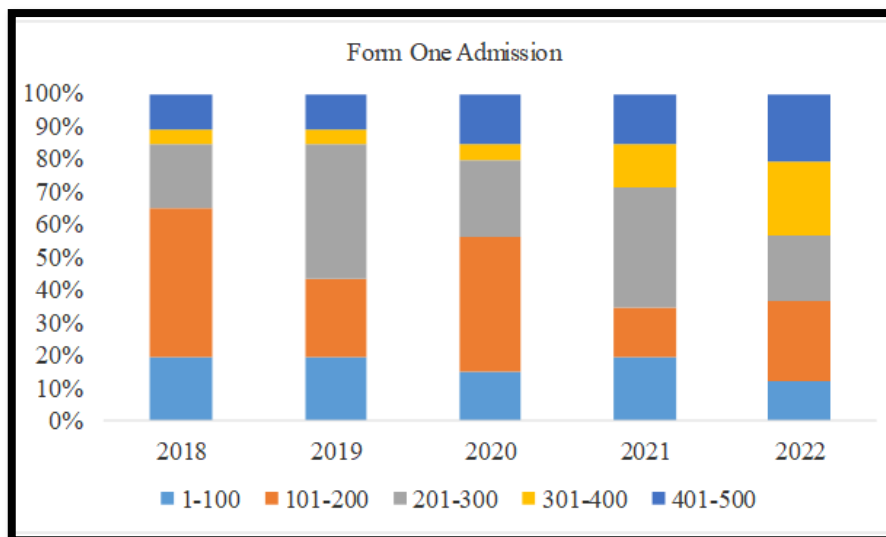


Figure 2: Form One Admission between the Years 2018 and 2022

Figure 2 shows that in 2018, the majority of Form One admissions (45%) fell within the range of 101-200 students, while the least number (5%) were in the range of 301-400 students. In 2019, most admissions (40%) ranged from 201 to 300 students, again with the least (5%) in the same range. The following year, 2020, saw a majority of admissions (40%) between 101-200 students, followed by 25% in the 201-300 range and 15% in the 401-500 range. In 2021, the largest group (37%) was again in the 201-300 range, while the 401-500 range increased to 15%. By 2022, the number of students in the 401-500 range rose to 20%, indicating that the 100% transition rate from primary school significantly increased student populations across various schools in Murang'a County. This rise in enrollment reflects improved access to education, enabling a larger segment of the population to acquire essential knowledge and skills, thereby reducing educational disparities and promoting social equity. Furthermore, higher enrollment rates in secondary

schools foster social cohesion and mitigate potential social issues, as education acts as a catalyst for personal development and community engagement, resulting in a more informed and active citizenry.

4.2.2. National Government Funding on Physical Infrastructure Facilities

The teachers were required to respond to the influence of national government funding on physical infrastructure facilities. The responses are shown in figure 3.

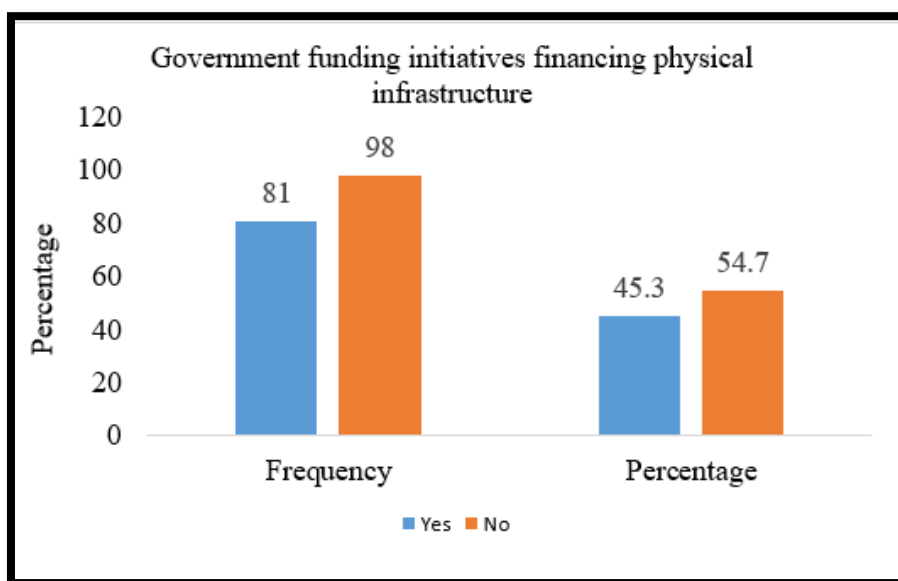


Figure 3: Government Funding Initiatives Financing Physical Infrastructure

The Findings in figure 3 established that the majority (54.7%) of the teachers agreed that government funding had supported the provision of physical infrastructure facilities in public secondary schools, while a minority (45.3%) disagreed that government funding had initiated the provision of physical infrastructure in Murang'a County. Therefore, national government funding initiatives (CDF, CEF, LATF and ESP) have been used to finance physical infrastructure in most public secondary schools in Murang'a County.

Teachers were required to respond to the extent to which national government funding initiatives influence physical infrastructure in public secondary schools in Murang'a County.

4.3. Influence of National Government Funding Initiatives on Physical Infrastructure in Public Secondary Schools

National government funding plays a critical role in shaping the physical infrastructure of secondary schools, influencing the overall educational experience for students and educators. Adequate funding enables the construction and maintenance of modern classrooms, science laboratories, libraries, and recreational spaces. Up-to-date facilities contribute to a conducive learning environment, fostering student engagement and academic achievement. Investments by the national government in physical infrastructure also support the integration of technology in secondary schools, providing students with access to essential resources for a well-rounded education. Well-equipped computer laboratories and internet connectivity enhance the learning experience and prepare students for the demands of a technologically-driven world.

4.3.1. Influence of National Government Funding Initiatives on Physical Infrastructure

Teachers were required to respond to the influence of National Government funding initiatives in providing infrastructure in public secondary schools in Murang'a County. The findings are presented in table 4.

Type of Infrastructure		Strongly Agree	Disagree	Neutral	Agree	Strongly Agree	Total	Mean	Std. Deviation
Classroom	Count	0	15	22	105	35	177	3.95	0.802
	%	0%	8.5%	12.4%	59.3%	19.8%	100		
Furniture	Count	5	18	10	95	49	177	4.05	0.851
	%	2.8%	10.2%	5.6%	56.6%	27.7%	100		
Bookshelves	Count	4	97	13	38	25	177	3.08	1.05
	%	2.25%	54.8%	7.34%	21.5%	14.1%	100%		
Classroom lighting	Count	2	24	23	98	30	177	3.16	1.006
	%	1.13	13.6%	13.0%	55.4%	16.9%	100		
Toilet/Latrine	Count	0	9	24	101	43	177	2.74	0.960
	%	0%	5.08%	13.6%	57.1%	24.3%	100		
Teachers' toilet	Count	9	32	30	77	29	177	3.24	1.09
	%	5.1%	18.1%	16.9%	43.5%	16.4%	100%		

Type of Infrastructure		Strongly Agree	Disagree	Neutral	Agree	Strongly Agree	Total	Mean	Std. Deviation
Visitors Toilets	Count	3	27	42	83	22	177	3.23	1.05
	%	1.7%	15.3%	23.7%	46.9%	12.4%	100%		
Water points	Count	2	34	21	96	24	177	2.65	1.30
	%	1.1%	19.2%	11.9%	54.2%	13.6%	100%		
Solid waste disposal	Count	0	106	14	19	38	177	2.74	0.98
	%	0%	59.9%	7.9%	10.7%	21.5%	100%		
Biology laboratory	Count	4	26	16	109	22	177	3.65	1.03
	%	2.3%	14.7%	9.0%	61.6%	12.4%	100%		
Chemistry laboratory	Count	7	14	28	92	36	177	2.64	0.86
	%	4.0%	7.9%	1.6%	52.0%	20.3%	100%		
Physics laboratory	Count	8	10	23	110	26	177	3.25	1.15
	%	4.5%	5.6%	13.0%	62.1%	14.7%	100%		
H/Science laboratory	Count	38	19	23	56	41	177	4.09	0.563
	%	21.5%	10.95%	13.0%	31.6%	23.2%	100%		
Computer Laboratory	Count	0	51	29	80	17	177	3.92	1.18
	%	0%	28.8%	16.4%	45.2%	9.6%	100%		
Laboratory furniture	Count	66	22	33	46	10	177	3.86	1.17
	%	37.3%	12.4%	18.6%	26.0%	5.6%	100%		
Apparatus and equipment	Count	5	15	42	95	20	177	2.82	1.07
	%	2.8%	8.5%	23.7%	53.7%	11.3%	100%		
Storage facilities in the laboratory	Count	101	10	40	10	16	177	3.55	1.27
	%	57.1%	5.6%	2.3%	5.6%	9.0%	100%		
Dormitories	Count	104	3	32	16	22	177	2.99	1.17
	%	58.8%	1.7%	1.8%	9.0%	12.4%	100%		
Bathrooms	Count	110	3	17	27	20	177	3.02	1.12
	%	62.1%	1.7%	9.6%	15.3%	11.3%	100%		
Beds in Dormitories	Count	113	9	23	13	19	177	2.75	0.9
	%	63.8%	5.08%	13.0%	7.3%	10.7%	100%		

Table 4: Adequacy of Physical Infrastructure

According to table 4, with regard to the adequacy of classrooms, (19.8%) of the respondents strongly agreed to classrooms being adequate, (59.3%) agreed, (12.4%) neither agreed nor disagreed, 8.5% disagreed, and 0% strongly disagreed. In general, only 8.5% disagreed, and 79.1% agreed to classroom adequacy; the high percentage could be due to government funding for the provision of classrooms in public secondary schools.

According to table 4, the findings regarding the adequacy of various resources in public secondary schools are as follows:

Furniture: A total of 27.7% of respondents strongly agreed, and 56.6% agreed that the furniture was adequate, while 5.6% neither agreed nor disagreed, 10.5% disagreed, and 2.8% strongly disagreed. In summary, 84.3% agreed on the adequacy of furniture, likely due to government funding for its provision.

Bookshelves: Only 14.1% strongly agreed, and 21.5% agreed that the bookshelves were adequate. Meanwhile, 7.34% neither agreed nor disagreed, while 54.8% disagreed and 2.25% strongly disagreed. Thus, 57.05% disagreed, indicating that government funding initiatives have not sufficiently addressed the provision of adequate bookshelves.

Classroom Lighting: Regarding classroom lighting, 16.9% strongly agreed, and 55.4% agreed on its adequacy, with 13.0% neither agreeing nor disagreeing, 13.6% disagreeing, and 1.13% strongly disagreeing. This results in 72.3% agreeing that classroom lighting is adequate, likely due to government funding.

Toilets and Latrines: For toilets and latrines, 24.3% strongly agreed, and 57.1% agreed that they were adequate, while 13.6% neither agreed nor disagreed, and only 5.08% disagreed, with no respondents strongly disagreeing. Therefore, 80.7% agreed on the adequacy of toilets and latrines, attributed to government funding.

Teachers' Toilets: In terms of teachers' toilets, 16.4% strongly agreed, and 43.5% agreed on their adequacy, with 16.6% neither agreeing nor disagreeing, 18.1% disagreeing, and 5.1% strongly disagreeing. Thus, 59.9% agreed on their adequacy, potentially due to government funding.

Visitors' Toilets: For visitors' toilets, 12.4% strongly agreed and 46.9% agreed on their adequacy, while 23.7% neither agreed nor disagreed, 15.3% disagreed, and 1.7% strongly disagreed. Overall, 59.3% agreed on their adequacy, likely supported by government funding.

Water Points: Regarding water points, 13.6% strongly agreed, and 54.2% agreed on their adequacy, with 11.9% neither agreeing nor disagreeing, 19.2% disagreeing, and 1.1% strongly disagreeing. Thus, 67.8% agreed that the water points are adequate, which may be attributed to government funding.

Solid Waste Disposal: For solid waste disposal, 21.5% strongly agreed, 10.7% agreed, 7.9% neither agreed nor disagreed, and a significant 59.9% disagreed, with no respondents strongly disagreeing. Consequently, 59.9% disagreed, indicating that government funding initiatives have not effectively provided solid waste disposal solutions.

Biology Laboratory: Finally, regarding the biology laboratory, 12.4% strongly agreed, and 61.6% agreed on its adequacy, with 9.0% neither agreeing nor disagreeing, 14.7% disagreeing, and 2.3% strongly disagreeing. Therefore, 67.8% agreed that the biology laboratory is adequate, likely due to government funding initiatives.

Chemistry Laboratory: A total of 20.3% of respondents strongly agreed, and 52.0% agreed that the chemistry laboratory was adequate, while 1.6% neither agreed nor disagreed, 7.9% disagreed, and 4.0% strongly disagreed. Overall, 72.3% agreed on the adequacy of the chemistry laboratory, which may be attributed to government funding.

Physics Laboratory: For the physics laboratory, 14.7% strongly agreed, and 62.1% agreed on its adequacy, with 13.0% neither agreeing nor disagreeing, 5.6% disagreeing, and 4.5% strongly disagreeing. This results in 76.8% agreeing that the physics laboratory is adequate, likely due to government funding support.

Home Science Laboratory: Regarding the home science laboratory, 23.2% strongly agreed, and 31.6% agreed on its adequacy, while 13.0% neither agreed nor disagreed, 10.95% disagreed, and 21.5% strongly disagreed. Thus, 54.8% agreed on the adequacy of the home science laboratory, indicating that government funding may have contributed to its provision.

Computer Laboratory: Regarding the computer laboratory, 9.6% strongly agreed, and 45.2% agreed that it was adequate. However, 16.4% neither agreed nor disagreed, while 28.8% disagreed, with no respondents strongly disagreeing. Overall, 54.8% agreed that the computer laboratory was adequate, suggesting that government funding has had some impact.

Laboratory Furniture: Concerning laboratory furniture, only 5.6% strongly agreed, and 26.0% agreed on its adequacy, while 18.6% neither agreed nor disagreed, 12.4% disagreed, and a significant 37.3% strongly disagreed. Therefore, 49.7% disagreed, indicating a lack of adequate laboratory furniture, possibly due to insufficient government funding.

Apparatus and Equipment: Regarding the adequacy of apparatus and equipment, 11.3% strongly agreed, and 53.7% agreed, while 23.7% neither agreed nor disagreed, 8.5% disagreed, and 2.8% strongly disagreed. Consequently, 65.0% agreed that the apparatus and equipment are adequate, which could be attributed to government funding.

Storage Facilities in Laboratories: For storage facilities in the laboratory, 9.0% strongly agreed, and 5.6% agreed, while 2.3% neither agreed nor disagreed, 5.6% disagreed, and a notable 57.1% strongly disagreed. This indicates that 62.7% disagreed on the adequacy of storage facilities, suggesting a gap in provision, likely due to government funding shortcomings.

Dormitories: In terms of dormitory adequacy, 12.4% strongly agreed, and 9.0% agreed, while 1.8% neither agreed nor disagreed, 1.7% disagreed, and a significant 58.8% strongly disagreed. This leads to 60.5% disagreeing on the adequacy of dormitories, highlighting a need for improvement, potentially due to insufficient government funding.

Bathrooms: Regarding bathroom adequacy, 11.3% strongly agreed, and 15.3% agreed, while 9.6% neither agreed nor disagreed, 1.7% disagreed, and a considerable 62.1% strongly disagreed. Therefore, 63.8% disagreed on the adequacy of bathrooms, indicating that government funding initiatives may not have effectively addressed this need.

Beds in Dormitories: Lastly, concerning the adequacy of beds in dormitories, 10.7% strongly agreed, and 7.3% agreed, while 13.0% neither agreed nor disagreed, 5.08% disagreed, and 63.8% strongly disagreed. Thus, 68.88% disagreed on the adequacy of beds, suggesting that government funding initiatives have not adequately addressed this issue in public secondary schools.

4.3.2. Spacing of Learners' Lockers

Teachers were required to respond to the question of the spacing of learners' lockers funded by the government in the classes in public secondary schools. The response is shown in table 5.

	N	Mean	Std. Deviation
Spacing of learners' lockers in the classes	174	3.09	0.87

Table 5: Spacing of the Learners' Lockers in the Classes

The findings from table 5 indicate that the majority of teachers (174) agreed that government funding has successfully provided lockers for learners in public secondary schools. The mean score of the responses was 3.09, with a standard deviation of 0.87. This low standard deviation, close to zero, suggests that the responses were consistent in supporting the provision of student lockers in Murang'a County public secondary schools through government funding. Adequate spacing is crucial for creating a conducive learning environment that fosters student engagement, comfort, and overall well-being. Government funding significantly influences the quality and quantity of furniture available in schools.

Properly spaced lockers enhance the organization and efficiency of classroom space, ensuring not only the comfort of students but also facilitating effective teaching and learning methodologies.

4.3.3. National Government Funding on Provision of Laboratories and Its Resources

The principals were required to indicate the appropriate situation of physical laboratory facilities in their schools in relation to the number of students: 5 – Very adequate, 4 – Adequate, 3 – Not sure, 2 – Inadequate, 1 – Very inadequate. The responses are shown in table 6.

Indicator	Frequencies and Percentages					Mean	SD
	1	2	3	4	5		
Biology laboratory	15 29.4%	29 56.9%	3 5.9%	4 7.8%		1.92	0.82
Chemistry laboratory	7 13.7%	29 56.9%	3 5.9%	6 11.8%	6 11.8%	2.51	1.22
Physics laboratory	7 13.7%	28 54.9%	2 3.9%	14 27.5%		2.45	1.05
Home science laboratory	24 52.2%	16 34.8%	2 4.3%	3 6.5%	1 2.2%	1.72	0.98
Computer laboratories	17 37.8%	16 29.6%	2 4.4%	6 13.3%	4 8.9%	2.20	1.32
Tables and seats	7 13.7%	29 56.9%	9 17.6%	6 11.8%		2.57	1.27
Storage facilities	14 27.5%	22 43.1%		15 29.4%		2.31	1.17
Apparatus and equipment	9 17.6%	21 41.2%	2 3.9%	19 37.3%		2.61	1.17
Lighting	9 17.6%	10 19.6%	3 5.9%	23 45.1%	6 11.8%	3.14	1.36

Table 6: Provision of Laboratories and Its Resources

Key: 5 – Very adequate, 4 – Adequate, 3 – Not sure, 2 – Inadequate, 1 – Very inadequate

The findings from table 6 indicate that regarding the adequacy of biology laboratories, a significant majority (86.3%) of respondents reported that the biology laboratories funded by the government were inadequate, while only 13.7% agreed that government funding had provided adequate facilities. The mean score of the responses was 1.92, with a standard deviation of 0.82. This low standard deviation, close to zero, demonstrates a strong consensus on the inadequacy of biology laboratories in public secondary schools in Murang'a County. Increased government funding could lead to the establishment of more biology laboratories, thereby enhancing the implementation of the curriculum and creating sufficient space for learners' achievements.

In terms of chemistry laboratories, table 6 shows that the majority (70.6%) of respondents indicated that the chemistry laboratories funded by the government were inadequately provided in public secondary schools, while 23.6% agreed that government funding had made adequate provisions. The mean score for these responses was 2.51, with a standard deviation of 1.22, reflecting a consistent agreement on the inadequacy of government funding for chemistry laboratories in Murang'a County.

For physics laboratories, 68.6% of respondents reported that these facilities were inadequately funded through government initiatives, with 31.4% agreeing that adequate provisions had been made. The mean score was 2.41, and the standard deviation of 1.05 indicates a strong agreement on the inadequacy of physics laboratories due to insufficient government funding. Adequate funding is essential for establishing, maintaining, and upgrading well-equipped science laboratories, which are critical for practical, hands-on learning experiences. Government funding supports the purchase of laboratory equipment, chemicals, specimens, and other resources necessary for conducting experiments in biology, chemistry, and physics. Well-equipped laboratories enable teachers to demonstrate experiments effectively, enhancing the engagement and impact of science education.

Regarding home science laboratories, 87.0% of respondents indicated that these facilities were inadequately provided through government funding, with only 8.7% agreeing that adequate provisions had been made. The mean score of responses was 1.72, with a standard deviation of 0.98, suggesting a strong consensus on the inadequacy of home science laboratories funded by the national government in Murang'a.

For computer laboratories, 67.4% of respondents noted that these were inadequately funded through government initiatives, with only 22.2% agreeing on the adequacy of the provisions. The mean score was 2.20, with a standard deviation of 1.32, indicating less consistency in the responses regarding the adequacy of computer laboratories funded by the national government in Murang'a County.

Concerning classroom furniture (seats and tables), a majority (70.6%) agreed that government funding has adequately provided for these facilities, with 29.4% agreeing on the adequacy of the furniture. The mean score was 2.57, with a standard deviation of 1.27, suggesting a strong agreement that funding initiatives have successfully supplied furniture to public secondary schools in Murang'a County. Adequate furniture in classrooms encourages learners to spend more time studying and revising, which enhances curriculum implementation and promotes better academic achievement.

The availability of furniture contributes to a positive learning environment that significantly impacts curriculum actualization and students' academic success (Wamulla, 2013).

Regarding water storage facilities, the majority (70.6%) of respondents indicated that these were inadequately provided through government funding in Murang'a public secondary schools, while 29.4% agreed that adequate storage facilities had been provided. The mean score was 2.31, with a standard deviation of 1.17, showing a strong agreement on the inadequacy of water storage facilities funded by the national government. Clean water is essential for a conducive learning environment, as it is necessary for cleaning, meal preparation, and drinking. When clean water is readily available, it reduces the time spent searching for it and decreases the time spent treating waterborne diseases. Consequently, access to clean water fosters a learning environment where both learners and teachers can focus on academic activities, potentially leading to improved academic outcomes.

Regarding laboratory apparatus and equipment, a majority (58.8%) of respondents indicated that government funding initiatives had inadequately provided for these resources in their respective public secondary schools, while 41.2% agreed on the adequacy of the provisions. The mean scores indicate that the responses were not consistent in supporting the notion that national government funding effectively promotes the provision of laboratory apparatus and equipment in public secondary schools in Murang'a County.

With respect to power/lighting, the data in table 6 shows that a majority (56.9%) of respondents agreed that government funding initiatives had adequately provided for power and lighting in their schools. The mean score was 3.14, with a standard deviation of 1.36, reflecting a strong consensus on the adequacy of funding for power and lighting in public secondary schools in Murang'a County. A reliable power supply is crucial for lighting classrooms, and research has demonstrated that good lighting and a safe learning environment are integral to positive academic achievement (Lemaster, 1997; Lackney, 1999; Schneider, 2002). Adequate lighting is particularly important in classrooms, as it directly influences students' performance. Insufficient lighting can hinder studying, cause discomfort, and lead to poor academic outcomes (Chukwuemeka, 2013).

Establishing well-equipped physics, chemistry, and biology laboratories is crucial, as these facilities are essential for conducting experiments. Various equipment, tools, machines, and apparatuses related to science subjects are necessary for effective learning. When students and teachers work in laboratories, they must be knowledgeable about the procedures and methods required for conducting experiments safely. Research has indicated that a lack of adequate knowledge can lead to accidents, especially when handling hazardous materials like acids. Therefore, ensuring that laboratories are well-equipped with the necessary materials and tools is vital.

In Kenya, despite efforts to fund the establishment of laboratories and procure essential laboratory equipment, significant shortfalls remain, necessitating urgent intervention to achieve quality teaching and learning in schools. The amount disbursed to each school has been decreasing annually, which affects the well-being of 7,211 public secondary schools serving 20,036,365 students (MoE, 2014). Since the introduction of the laboratory equipment grant in the 2002/2003 financial year, the government has continued to provide funds to public schools, but the need for further improvements persists.

4.3.4. Information on the Influence of National Government Funding on the Provision of Adequate Sanitary Facilities

The principals were to indicate the appropriate situation of physical sanitary facilities in their schools and the source of national government funding provided for the same. The results are presented in table 7.

Indicator	Frequencies and Percentages					Mean	SD	Source of Funding
	1	2	3	4	5			
Number of boy/girls toilets/latrines in relation to the number of students	3 5.8%	13 25.0%	11 21.2%	18 34.6%	7 13.5%	3.25	1.15	MIF, CDF, ESP
Number of teachers toilets/ latrines	5 9.6%	14 26.9%	5 9.6%	16 30.8%	12 23.1%	3.31	1.35	MIF, Parents, ESP
Number of visitors toilets/ latrines	1 2.0%	16 31.4%	16 31.4%	12 23.5%	6 11.8%	3.12	2.05	MIF, Parents, ESP
Number of water points	1 1.9%	22 42.3%	3 5.8%	18 34.6%	8 15.4%	3.19	1.21	MIF, ESP
Solid waste disposal	10 19.2%	19 36.5%	7 13.5%	8 15.4%	8 15.4%	2.71	1.36	MIF, Parents, ESP

Table 7: Provision of Adequate Sanitary Facilities with Regard to National Government Funding

Key: 5 – Very adequate, 4 – Adequate, 3 – Not sure, 2 – Inadequate, 1 – Very inadequate

The adequacy of students' toilets, as indicated in table 7, shows that a majority (48.1%) of respondents believe that the toilets are inadequately provided through national government funding. In contrast, 30.8% agreed that government funding has adequately addressed the provision of students' toilets and latrines. Most of the available facilities have been funded through the Member of Parliament (MP) Initiatives Fund (MIF) and the Constituency Development Fund (CDF), particularly in sub-county schools that maintain direct contact with MPs. The World Health Organization recommends a student-to-toilet ratio of one toilet for every 30 boys or 25 girls. Adequate sanitation facilities have been noted to enhance the learning environment, improve pupils' health, boost school attendance, and promote gender equality

(UNESCO, 2016). For instance, in Morocco, well-constructed schools equipped with sufficient water and sanitation facilities have been shown to increase school attractiveness for girls (UNESCO, 2015). The adequate provision of latrines and toilet facilities enhances the learning environment by minimizing the time lost by teachers and learners when responding to nature's call. This reduction in time wastage allows for increased contact time between learners and teachers, which is likely to contribute to better academic achievement.

In terms of teachers' toilets and latrines, table 7 shows that a majority (53.9%) of respondents agreed that these facilities are adequately provided through national government funding, while 36.5% disagreed. The mean score was 3.31, with a standard deviation of 1.35, indicating a strong consensus on the adequacy of funding for teachers' toilets and latrines. Most of the teachers' toilets have been constructed through fundraising efforts by parents, particularly in National, Extra-County, and County secondary schools. In contrast, sub-county secondary schools often receive support through MIF and the Economic Stimulus Package (ESP) funding from the government.

Regarding visitors' toilets and latrines, the responses presented in table 7 show that 35.3% of respondents felt that national government funding has adequately provided these facilities, while 33.4% disagreed, and 31.4% were uncertain about the adequacy of the provision. The mean score was 3.12, with a standard deviation of 2.05, suggesting a lack of consensus on whether the government has adequately funded visitors' toilets and latrines. Similar to teachers' toilets, parents have played a role in fundraising for visitors' toilets, especially in National, Extra-County, and County secondary schools.

Regarding the number of water points, the responses in table 7 indicate that 50.0% of respondents agreed that national government funding has provided enough water points for sanitation in public secondary schools, while 44.2% disagreed. The mean score was 3.19, with a standard deviation of 1.21, reflecting a moderate level of consistency in responses about the adequacy of funding for water points. Parents have also contributed through donations and fundraising efforts for this purpose, and many water points have been provided through MIF and ESP funding.

Concerning solid waste disposal, the responses in table 7 reveal that a majority (55.7%) of respondents agreed that national government funding has inadequately addressed solid waste disposal in public secondary schools, while only 30.8% disagreed. The mean score was 2.71, and the high standard deviation indicates a lack of consensus among respondents regarding the adequacy of funding for solid waste disposal in public secondary schools in Murang'a County.

4.3.5. Information on Government Funding Initiative on Provision of Classrooms in Public Secondary Schools

Principals were asked to verify whether the number of classrooms in public secondary schools has increased due to government funding. The response is shown in figure 4.

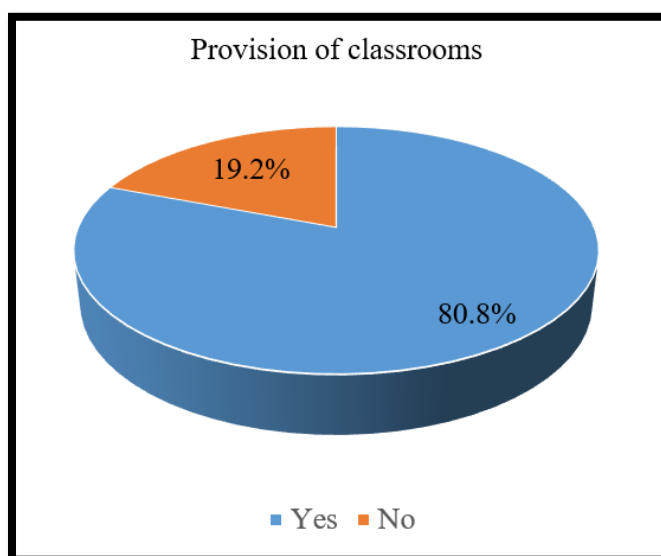


Figure 4: Government Funding Initiative on Provision of Classrooms

The findings presented in figure 4 indicate that a significant majority (81%) of school principals in Murang'a County believe that government funding initiatives have greatly contributed to the provision of classrooms in public secondary schools. Conversely, only 19% of respondents disagreed, suggesting a general consensus on the positive impact of government funding in this area.

In contrast, experiences in Australia highlight a different perspective on school funding. Research by Whittle and Telford (2018) revealed that municipal schools receive government financing not only for infrastructure, such as classrooms but also for operating costs, which facilitates the expansion of schools and enhances student participation in learning.

The availability of classrooms is crucial for fostering student engagement. According to Naidu (2011), classes exceeding one hundred students can lead to feelings of isolation among students, diminishing their sense of belonging and hindering their participation in social programs.

Furthermore, in Bangladesh, the International Development Association (IDA) implemented a Female Secondary Assistance Program in 1993 to improve access to education for girls. As noted by Smith, Brooks-Gunn, and Klebanov

(2017), this initiative provided tuition stipends that increased girls' enrollment from 1.1 million in 2002 to 4.9 million in 2009. This project also contributed to achieving gender parity in education, with the girls' completion rate rising from 39% to 62.8% by 2008 (Naidu, 2011; Smith et al., 2017).

4.3.6. Physical Classroom Facilities in Schools

Schools' principals were required to indicate the appropriate situation of physical classroom facilities in their schools as provided by government funding initiatives. The responses are shown in table 8.

Indicator	Frequencies and Percentages					Mean	SD	Source of Funding
	1	2	3	4	5			
Number of classrooms in relation to the number of students		14 25.9%	1 1.9%	21 38.9%	18 33.3%	3.80	1.17	MIF, CDF, ESP
Number of chairs and rockers		14 25.9%	2 3.7%	26 48.1%	12 22.2%	3.67	1.10	MIF, ESP
Books shelves	8 14.8%	37 68.5%	1 1.9%	7 13.0%	1 1.9%	2.19	0.91	MIF, Parents, ESP
Classroom lighting	2 3.7%	8 14.8%	7 13.0%	32 59.3%	5 9.3%	3.56	0.98	MIF, ESP

Table 8: Physical Classroom Facilities Provided by Government Funding

Key: 5 – Very adequate, 4 – Adequate, 3 – Not sure, 2 – Inadequate, 1 – Very inadequate

The results in table 8 indicate that a significant majority (72.2%) of respondents believe that government funding initiatives have provided an adequate number of classrooms to accommodate the current student population in public secondary schools in Murang'a County. The mean score for this response was 3.80, with a standard deviation of 1.17, suggesting that responses were consistent in agreeing that initiatives, primarily from the Maintenance Improvement Fund (MIF) and the Economic Stimulus Package (ESP), have positively impacted classroom availability.

In contrast, the situation in Nigeria highlights ongoing challenges. Despite increased enrollment in public schools, facilities for effective teaching and learning have not kept pace. As noted by Asiyai (2012), the Nigerian government has faced underfunding issues, prompting schools to maintain existing physical infrastructure. Sesung (2012) found that student enrollment has surged in classrooms designed for smaller groups, with capacities increasing from 30-40 to 60-75 students or more. While open enrollment is commendable, the lack of adequate infrastructure—such as insufficient and dilapidated classrooms—remains a significant challenge. Overcrowded classrooms have been linked to decreased student engagement and lower academic performance.

Regarding the provision of chairs and rockers, table 8 shows that 70.3% of respondents agree that these resources are adequately provided through government funding, mainly from MIF and ESP. The mean score was 3.67, with a standard deviation of 1.10, indicating consistent agreement on this point.

In terms of bookshelves, however, the data reveals a different story. A majority (83.3%) of respondents indicated that bookshelves are inadequately provided through government funding, with a mean score of 2.19 and a standard deviation of 0.91. This low score reflects a consensus that government initiatives have not sufficiently addressed this need. Respondents noted that available bookshelves are often supplied by parents through additional fees as families strive to bridge this gap. Parents also bear the financial burden of purchasing new chairs and rockers and repairing broken ones.

Concerning classroom lighting, 68.6% of respondents agreed that government funding initiatives have adequately provided lighting in public secondary schools, with a mean score of 3.56 and a standard deviation of 0.98. This low standard deviation suggests strong agreement that government support, particularly from MIF and ESP, has successfully addressed this issue.

The condition of classrooms is vital for effective teaching and achieving academic outcomes. It is essential to display teaching-learning materials that enhance the classroom's attractiveness and align with lesson plans and academic concepts. Additionally, providing adequate furniture, heating, and cooling equipment in accordance with weather conditions is crucial. In some schools, students have been observed sitting on the floor, highlighting the need for proper chairs and desks. Ensuring comfortable classroom environments allows students to concentrate better while teachers can perform their duties more effectively. The use of satisfactory teaching-learning materials and technologies also contributes to achieving academic goals.

In Kenya, the Education Sector Support Programme (KESSP) aims to construct schools with adequate facilities to accommodate rising enrollment rates. The second medium plan envisions the construction of additional classrooms in secondary schools to ensure each school can operate with at least three streams and the establishment of 600 new secondary schools. Furthermore, the National Government Constituency Development Funds (NG-CDF) finance the rehabilitation and establishment of new schools nationwide (NG-CDF Act, 2016).

4.3.7. Information on Government Funding Initiative on the Provision of Accommodation Facilities

4.3.7.1. Adequacy of Accommodation Facilities after the Introduction of Government Funding

The study sought to establish if the accommodation facilities were adequate after the introduction of government funding, and the findings are shown in figure 5.

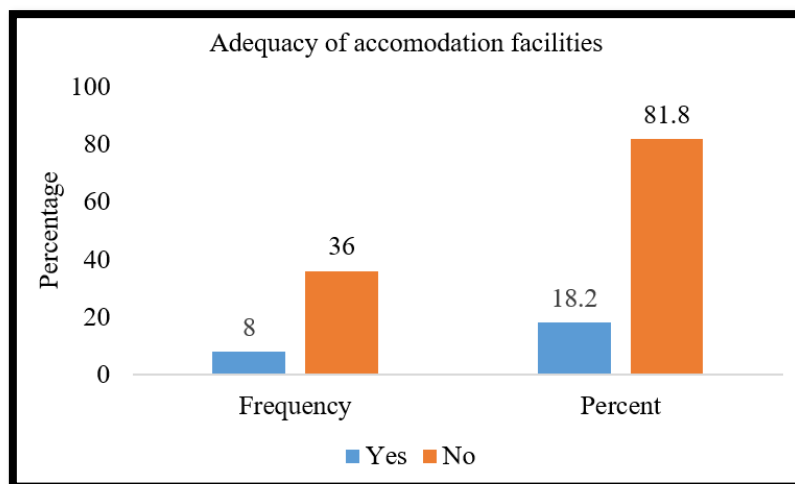


Figure 5: Principals' Response on Adequacy of Accommodation Facilities after Introduction of Government Funding

The findings in figure 5 reveal that a significant majority (82%) of principals disagreed with the notion that government funding has adequately supported the provision of accommodation or boarding facilities in public secondary schools. In contrast, only 18.2% agreed that such funding has contributed to the establishment of accommodation facilities in Murang'a County. Dormitories and boarding facilities are critical components of secondary schools in Kenya, particularly in rural areas where many students travel from remote regions. The Kenyan government allocates a portion of its education budget to support the construction, maintenance, and improvement of these facilities. Enhanced accommodation options, including upgraded dormitories, are essential for ensuring the safety and well-being of students, especially those from distant locations. This investment not only promotes inclusivity but also facilitates equal access to education for all students.

4.3.7.2. Rating the Adequacy of Accommodation Facilities in Public Secondary Schools and Source of Funding

Principals were required to rate the adequacy of the accommodation facilities in their respective public secondary schools, where 5 – Very adequate, 4 – Adequate, 3 – Inadequate, 2 – Very inadequate, 1 – Not sure and the responses are presented in table 9.

Indicator	Frequencies and Percentages					Mean	SD	Source of Funding
	1	2	3	4	5			
Number of dormitories	2 5.3%	10 26.3%	12 31.6%	14 36.8%		3.00	0.93	Parents
Number of beds		8 21.1%	11 28.9%	19 50.0%		3.29	0.80	MIF
Number of bathrooms		15 39.5%	19 50.0%	4 10.5%		2.71	0.65	MIF
Number of toilets		10 26.3%	25 65.8%	3 7.9%		2.82	0.56	MIF

Table 9: Rating Accommodation Facilities in Public Secondary Schools and Source of Funding
Key: 5 – Very adequate, 4 – Adequate, 3 – Not sure, 2 – Inadequate, 1 – Very inadequate

The findings in table 9 indicate that regarding the adequacy of dormitory facilities, a majority (36.8%) of respondents believe that government-funded dormitories are adequate, while 31.6% consider them inadequate. The mean score of the responses was 3.00, with a standard deviation of 0.93. This low deviation, close to zero, suggests a consensus among respondents regarding the inadequacy of dormitory provision in public secondary schools in Murang'a County. Increased government funding could accelerate the provision of adequate dormitories, accommodating more students and thereby supporting curriculum implementation through enhanced space for learners' achievements.

In terms of the adequacy of beds, table 9 shows that 50.0% of respondents agreed that the number of beds provided through government funding in Murang'a public secondary schools is inadequate. The mean score was 3.29, with a standard deviation of 0.80, indicating a consistent agreement that government funding for bed provision is insufficient.

Regarding the number of bathrooms, the findings reveal that 39.5% of respondents believe that the bathrooms in their boarding areas, funded by the government, are very inadequate. The mean score was 2.71, with a standard deviation of 0.65, reflecting a consensus that government funding has not adequately addressed the need for sufficient bathrooms in public secondary schools in Murang'a County. In urban areas and well-established schools across Kenya, dormitory facilities are generally better equipped; however, rural and remote areas face greater challenges in funding for the construction and maintenance of dormitories.

Concerning the adequacy of toilets in dormitories, 65.8% of respondents expressed neutrality regarding whether the number of toilets provided through government funding is adequate or inadequate. The mean score was 2.82, with a standard deviation of 0.56, indicating a consistent agreement that the provision of adequate toilets in public secondary schools in Murang'a County is lacking. It is essential for schools to establish separate restrooms for boys and girls, with significant emphasis placed on constructing these facilities in both urban and rural communities. Notably, over 90% of government and private unaided schools at the primary and secondary levels provide restrooms for girls. However, the provision in private schools tends to be better than in government schools. Conversely, restroom facilities for boys are generally more adequate compared to those for girls. When constructing restrooms, it is crucial to ensure that proper amenities, such as clean water, paper towels, and soap, are available. The lack of adequate restroom facilities has been linked to a decline in student enrollment, highlighting the need for improved sanitation in schools.

4.3.7.3. Number of Accommodation Facilities

Schools' principals were required to state whether the number of accommodation facilities in public secondary schools has increased due to government funding, and the results are shown in figure 6.

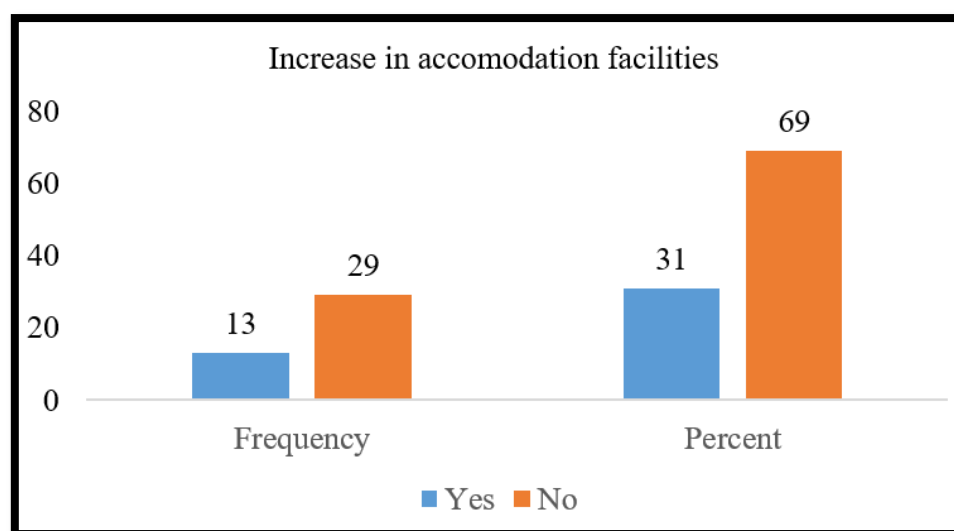


Figure 6: Increase in the Number of Accommodation Facilities

The findings in figure 6 indicate that a majority (68%) of school principals disagreed with the statement that accommodation facilities in public secondary schools have increased as a result of government funding, while only 32% agreed. Despite efforts to enhance dormitory facilities in Kenyan secondary schools, challenges such as overcrowding, substandard living conditions, and inadequate funding continue to persist in certain areas. These challenges can adversely affect the well-being and academic performance of students.

To address these issues, secondary schools in Kenya have increasingly involved parents in raising additional fees for accommodation facilities, particularly in schools that offer boarding options. Parents are typically required to contribute extra funds to cover the costs associated with maintaining and improving these facilities. The methods for collecting these additional fees can vary among schools in Murang'a: some have a fixed amount that parents must contribute annually or per term, while others adopt a more flexible system based on individual financial capacity.

Effective communication with parents about the purpose of these extra fees and their intended use is essential. Transparency and accountability are crucial to ensure that the funds are utilized appropriately for the benefit of students and the enhancement of accommodation facilities. Additionally, parents should be given opportunities to provide feedback and raise any concerns regarding these extra fees. Establishing open lines of communication between the school administration and parents is vital for fostering a collaborative and supportive educational environment.

4.3.7.4. Benefit of Physical Infrastructure Financed by National Government to Schools

School teachers were required to provide information on the benefits of physical infrastructure financed by the National government in public secondary schools; the response was presented in figure 7.

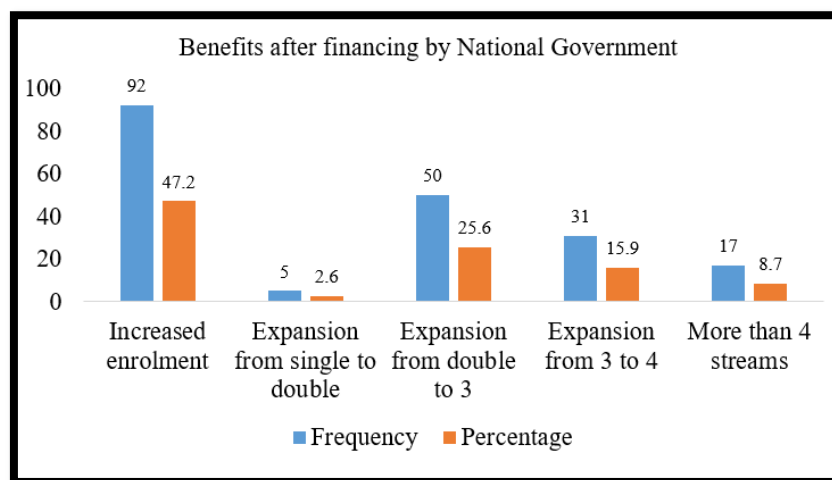


Figure 7: Benefit of Physical Infrastructure Financed by National Government

The findings presented in figure 7 indicate that National government funding initiatives significantly enhance the provision of physical infrastructure in public secondary schools. Teachers reported that, as a result of this funding, some schools (2.6%) were able to expand from one to two streams, while 25.6% of public schools increased from two to three streams. Additionally, 15.9% expanded from three to four streams, and 8.7% expanded to more than four streams. Government-funded infrastructure plays a crucial role in reducing barriers to education by ensuring that schools are equipped with essential facilities. This support contributes to increased enrollment and retention rates, particularly in underserved areas, as the available space allows for a conducive learning environment. Furthermore, well-financed infrastructure can include provisions for students with special needs, thereby making schools more inclusive. This may involve the construction of ramps, elevators, and other facilities that promote equal access for all students.

4.3.7.5. Financial Deficit Options on Accommodation Facilities

School principals were required to provide information on how they deal with deficits created by a lack of funds for Accommodation facilities; the response is presented in table 10.

	Frequency	Percent
We encourage parents to meet the deficit	36	75.0
We use profits from income-generating activities	4	8.3
Organizing a Harambee to cater for the deficit	7	14.6
We seek credit from financial institutions	1	2.1
Total	48	100.0

Table 10: Financial Deficit Options on Accommodation Facilities

The findings presented in table 10 indicate that a significant majority (75%) of school principals acknowledge the impact of inadequate government funding on accommodation facilities, leading them to encourage parents to meet the funding deficit. Parents are informed about the state of accommodation facilities in the schools, and in collaboration with the Board of Management (BOM), they contribute additional fees to address the gaps left by insufficient government support. School communities—including parents, teachers, and students—often participate in fundraising initiatives to support the construction and maintenance of dormitories, typically led by School Development Committees (SDCs). This approach fosters a culture of shared responsibility, as openly acknowledging financial challenges and involving parents in solutions can help bridge funding gaps and ensure that accommodation facilities are properly maintained and improved. Parents' contributions highlight a collective commitment to the educational well-being of their children, sending a powerful message about the importance of education and the joint effort required for the success of the school community. Additionally, some principals (14.6%) reported that their schools organize harambees to address funding deficits. During these events, they invite influential community members such as parliament members, county assembly representatives, governors, alumni, and local businesspeople to provide financial support for constructing accommodation facilities in public secondary schools in Murang'a County. Furthermore, 8.3% of principals have established income-generating activities within their secondary schools to raise funds for developing accommodation facilities like dormitories. These activities include dairy farming, poultry farming, rabbit keeping, pork production, and operating school canteens, with the generated income being reinvested into improving accommodation facilities. Lastly, 2.1% of principals seek credit from financial institutions to supplement government funding for accommodation facilities in public secondary schools within the county.

4.3.7.6. Deficit of Physical Infrastructure in Public Secondary Schools

Teachers were required to respond to alternative use of inadequate physical infrastructure. Their responses are shown in table 11.

Physical Infrastructure	Alternative Used
Dormitories	Dining hall
Laboratories	Classrooms, attending practicals in shifts
Classrooms	Tents, dining hall

Table 11: Alternative Use of Physical Infrastructure

The findings presented in table 11 indicate that due to inadequate provision of dormitories through government funding, many schools have resorted to converting their dining halls into dormitory spaces. This adaptation is a response to the increased student population resulting from the 100% transition policy, which has led to insufficient accommodation in existing dormitories, prompting schools to seek alternative solutions.

Similarly, the inadequacy of government-funded classrooms has forced many schools to repurpose laboratories and dining halls as makeshift classrooms for teaching and learning. Some schools have also chosen to invest in tents to create additional space for educational activities.

Furthermore, regarding the lack of laboratories funded by the government, many schools have converted classrooms and dining halls into laboratories where students can conduct experiments. This modification aims to enhance the teaching and learning of science subjects, addressing the gaps created by inadequate laboratory facilities.

5. Summary, Conclusion and Recommendations

5.1. Introduction

This chapter summarizes the findings, conclusions, and recommendations of the study, which are derived from the discussions of the findings in relation to the research objectives. The conclusions are presented in reference to the research questions analyzed in Chapter Four. The recommendations are categorized into four groups: those aimed at the government, donors, county governments, and alumni; those directed towards public secondary schools; and finally, suggestions for further study.

5.2. To Determine the Extent to Which the National Government Funding Initiative Influences the Provision of Physical Infrastructure in Public Secondary Schools in Murang'a County

In terms of the adequacy of physical infrastructure resulting from national government funding, both principals and teachers expressed general agreement on its sufficiency. Specifically, regarding classroom adequacy, 59.3% of respondents agreed, while 27.7% strongly agreed. For furniture, 56.6% agreed, and classroom lighting received agreement from 55.4%, with 16.9% strongly agreeing. The adequacy of toilets and latrines was acknowledged by 57.1% of respondents, while 43.5% agreed on the provision of teachers' toilets and 46.9% on visitors' toilets. Water points were considered adequate by 54.2%, and laboratory adequacy was noted, with 61.6% agreeing for the biology lab, 20.3% strongly agreeing, 52.0% agreeing for the chemistry lab, and 62.1% agreeing for the physics lab.

Additionally, 45.2% agreed on the adequacy of the computer lab, and 53.7% agreed on the availability of apparatus and equipment. These findings suggest that government funding initiatives have sufficiently addressed infrastructure needs in public secondary schools in Murang'a County. Conversely, the findings revealed inadequacies in other areas: 54.8% disagreed about the sufficiency of bookshelves, and 59.9% disagreed regarding solid waste disposal. The situation was more pronounced in laboratory furniture, where 37.3% strongly disagreed, and in storage facilities, 57.1% strongly disagreed. A significant 58.8% strongly disagreed about dormitory adequacy, 62.1% strongly disagreed about bathrooms, and 63.8% strongly disagreed regarding the number of beds in dormitories. These results imply that government funding initiatives have not sufficiently addressed these infrastructure needs in public secondary schools in Murang'a County. Overall, the findings indicate that the government is the primary source of funding for physical infrastructure in secondary schools in Murang'a County. Essential infrastructure such as classrooms, laboratories, laboratory apparatus and equipment, water points, classroom lighting, and toilets (for both students and staff) are adequately provided through government funding. Therefore, the government plays a crucial role in the development of physical infrastructure in secondary schools in the region.

5.3. Conclusion

From the findings, it is clear that the government is the main source of funding for physical infrastructure in secondary schools in Murang'a County. Most of the physical infrastructure, such as classrooms, laboratories, laboratory apparatus and equipment, water points, class lighting, students' toilets and latrines and teachers'/ visitors' toilets, are adequately provided through government funding. However, with 100 percent transition, the physical infrastructure is now inadequate and therefore, government need to scale up the funding to promote the provision of more physical infrastructure in secondary school in the County, to accommodate the increased number of students transiting from primary schools.

5.4. Recommendations of the Study

Based on the literature that was reviewed, the following recommendations are worthy of note for the achievement of physical infrastructure in public secondary schools:

- The government should be committed to the adequate funding of secondary school physical infrastructure through appropriate budgetary allocation for the sustenance of secondary education in the country. The government should consider an upward review of the educational budget to meet up with the 30% allocation

recommended by UNESCO and above. Target-generating infrastructure planning based on the estimates of the highest sustainable rate of expansion that does not degrade the quality to unacceptable levels offers a better basis for operational plans through mobilizing assets efficiently and effectively might be a better approach (Lewin, 2007b)

- The government, through the Ministry of Education, should set up a supervision team to inspect how school managers disburse the funds assigned for different physical infrastructure in the school. This will help reduce the issue of school managers misappropriating infrastructure funds.
- There is a need for the Ministry of Finance through the Ministry of Education to increase capitation for each student since, from the findings, it was realized that fee payment is the major source of resource mobilization in schools. This includes a diversity of funding sources and efficiency-enhancing measures, which are required to cover the significant financial investments for expanding access and improving the quality of secondary education (Yang & Yu, 2019).

The school principals recommend the best way to improve the government funding towards provisions of adequate physical infrastructure as follows:

- Increase funding by the government in terms of increased capitation on infrastructure development
- The government should prioritize education and also treat all schools as equal in terms of capitation allocation.
- Avoid mismanagement of schools from headquarters and coming up with education policies that hinder infrastructure development.
- To fund the schools equitably or based on the school population
- The government provides inadequate funding for physical infrastructure; hence, it should allow parents to come in to cost share so that schools do not lag behind in terms of infrastructure development.

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