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Moderating Role of Government Policy on the Relationship Between Economic Stimulus Programs and Education Development: Empirical Evidence from Kenya

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Abstract

This study examines how government policy influences the relationship between economic stimulus programs and the development of education. There is limited understanding of this connection, particularly regarding the Northern Rift Economic Bloc in underdeveloped nations such as Kenya. The study utilized an explanatory research methodology and implemented a systematic random sampling strategy. The suggested model is empirically examined using hierarchical regression analysis, based on survey data from 370 respondents. The data was collected in Keiyo South Sub-County using a structured questionnaire. The findings of this study suggest that economic stimulus programs have a beneficial impact on the development of education. In addition, it was discovered that government policy had a negative and statistically significant effect on the association between economic stimulus programs and education development. This implies that government policy has a substantial influence on moderating the connection between economic stimulus programs and healthcare service. Although this research has made valuable additions to the literature, it is important to acknowledge its limitations. Our database encompasses solely one of the forty-seven counties in Kenya. Caution should be exercised when generalizing the conclusions of this study, as it may restrict the extent to which the findings can be applied to other situations. The findings of this study can offer valuable direction for enhancing the quality of life for the residents. The county government should collaborate with stakeholders and Community Based Organizations to educate the citizens about the significance of engaging in the ESP program for their lives. In order to enhance educational growth, it is imperative to construct additional hospitals to ensure convenient access to medical services, hence promoting greater ESP involvement. This study contributes to the expanding body of research by investigating the role of government policy as a moderator in the relationship between economic stimulus programs and education progress in the specific context of the education sector in Kenya.

Original Article

Keywords: Economic stimulus programs, education, government policy, education development

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Introduction

When it comes to development, education is an essential component in many different ways. Without making major investments in human capital, it is impossible for any nation to achieve economic success that is sustainable. Educating people helps them get a better understanding of both themselves and the world around them(Blundell et al., 1999; Zhuravlev et al., 2018). It improves the well-being of individuals as a whole and adds to a wide range of benefits for society as a whole. Education is a powerful tool that not only boosts individuals' productivity and creativity but also encourages entrepreneurial endeavors and makes technological improvements easier to achieve. In addition, it is of critical importance in assuring the progress of both the economy and society, as well as in developing more equitable distribution of income (Brown & Souto-Otero, 2020).

It is possible to draw a clear distinction between the relationship between education and economic development, either openly or implicitly. Individuals who have completed their education have a greater chance of securing employment and, as a result, are able to adopt roles that are more valuable within the labor force. As a consequence of this, there is a rise in the productivity of the Gross Domestic Product (GDP), which in turn leads to an improvement in the standard of life (Marginson, 2018). The enhancement of general knowledge, the stimulation of creativity, the establishment of new businesses, the encouragement of entrepreneurial endeavors, and the improvement of education outcomes through the facilitation of access to quality education are all examples of positive externalities that are generated by education in society. Not only can education result in society benefits such as increased productivity and technological developments, but it also has the potential to serve as a means of fostering social fairness (Djikhy & Moustaghfir, 2019). This is accomplished by ensuring that people of all racial and gender backgrounds have equal access to opportunities for higher education. It is possible to reduce the wealth gap between persons who are wealthy and those who are not by making it possible for the latter to achieve upward social mobility and into the middle class through the provision of access to primary education facilities that are of a high level(Blundell et al., 1999).

According to economists, economic stimulus programs (ESP) are measures taken by the government with the purpose of reviving the economy,

preventing or reversing a recession, and increasing employment and expenditures. Over the course of human history, economies all over the world have gone through periods of overall economic decline or recession, and in an effort to resuscitate their economies, they have attempted to implement Economic Stimulus Packages (ESPs) as a means of stimulate economic growth (Stern & Zenghelis, 2021). According to Amadeo (2012), Keynesian economics proposes that a stimulus package can reduce the negative impacts of a recession by increasing the amount of money that the government spends on certain businesses and by making strategic investments in such areas. The primary objectives of the economic stimulus package were to improve the nation's economic recovery, address challenges to food security through long-term solutions, create employment opportunities in rural areas, improve infrastructure and education for all Kenyans, invest in environmental conservation, expand access to and develop the capacity of the Kenyan population to use information and communication technology, and promote regional development for social stability and fairness. An intervention known as the Economic Stimulus Program (ESP) was developed with the intention of reducing the difficulties that are experienced in the Kenyan educational system.

Substantial disruption has been generated all around the world as a result of the COVID-19 outbreak, which has led to the loss of lives, the worsening of existing inequalities, and the potential for substantial gains in the field of education to be jeopardized (Maringe & Chiramba, 2022). The ministries of education (MoEs), which are largely responsible for education, were confronted with difficult decisions that required them to make the difficult choice between competing priorities. It was necessary for them to guarantee that educational services would continue to be provided, even in circumstances where there was no longer any guarantee of physical access to schools. The closure of Kenya's educational institutions in March 2020 had a detrimental effect on around 18 million pupils who were enrolled in Kenyan educational institutions. Consequently, this not only put at risk the major economic, social, and political advancements that the nation has made over the course of the past ten years, but it also undercut the significant efforts that the government has made to ensure that education is accessible and of high quality for all individuals (Ngwacho, 2020).

An extensive amount of study has been carried out on economic crises, the implications that they have on the provision of education services, and the measures that governments, international agencies, and donors have done to prevent, prepare for, respond to, and recover from such crises. As a result of the crisis's ensuing economic implications, the already inadequate resources were taxed even further during a time when substantial funding was required for a number of different social service areas(Obiakor & Adeniran, 2020). Despite the fact that Kenya's economic stimulus program has provided the country with 4.3 billion Kenyan shillings (KES) and that education spending has been maintained in proportion to economic growth, there has not been a significant increase in funding to address the social and economic impacts of the pandemic, as indicated by medium-term expenditure frameworks (Suleiman, 2020). According to Jacobsen et al. (2023), the budget gap in the basic education subsector is growing, which is another concern that has been brought to light. After schools resumed operations, the detrimental

impacts on people's livelihoods and family earnings not only produced but also worsened vulnerabilities that restricted access to and engagement in distant learning, while also limiting the reintegration of students (Hossain, 2021). These vulnerabilities were a result of the adverse consequences on people's livelihoods and household earnings. The question of whether or not fiscal policy stimulates growth has dominated theoretical and empirical debate for a long time (Wang et al., 2021). One viewpoint believes that government involvement in economic activity is vital for growth, but an opposing view holds that government operations are inherently bureaucratic and inefficient and therefore stifles rather than promotes growth(Kamau, 2018; Parui, 2022). In the empirical literature, results are equally mixed. Empirical findings have been diverse. Heinemann et al. (2018) conducted a meta-analysis of past empirical studies of fiscal policy and growth and found that in a sample of 41 studies, 29% indicate a negative relationship between fiscal policy and growth, 17% a positive one, and 54% an inconclusive relationship. It is against this backdrop that the purpose of this article was to investigate the moderating effect of government policy on the relationship between economic stimulus programs and education progress in Keiyo South Sub-County, which is located in Kenya.

Hypotheses development

The economic theory underlying the stimulus package may be veiled in exact numbers, but it ultimately relies on John Maynard Keynes's speculative hypothesis regarding human nature. Keynes posited that individuals manage uncertainty by adopting the assumption that the future would resemble the present. This inclination worsens economic downturns and should be resisted by a substantial fiscal stimulus that revitalizes the enthusiasm and confidence of consumers and investors. The Keynesian hypothesis argued that the remedy for the Great Depression was to invigorate the economy ("encouragement to invest") by employing a mix of two strategies: a decrease in interest rates (monetary policy) and government expenditure on infrastructure (fiscal policy). The government communicates to commercial banks that they should lower the interest rates they charge their clients by decreasing the interest rate at which the central bank lends money to commercial banks (Fletcher, 1989).

The government's investment in education stimulates economic growth by generating business prospects, employment opportunities, and increased demand, thereby counteracting the previously described imbalance. Governments obtain the funding for this expenditure by borrowing cash from the economy through the issuance of government bonds. As a result of government spending surpassing the amount of tax income received, a fiscal deficit is created (Frankel & Wallen, 2000). One key finding of Keynesian economics is that, in certain circumstances, there is no robust automatic process that drives output and employment towards levels of full employment. This conclusion contradicts economic theories that presuppose a robust inclination towards equilibrium. The 'neoclassical synthesis' is a framework that merges Keynesian macroeconomic notions with a microeconomic base. In this framework, the conditions of general equilibrium enable price adjustment to ultimately attain the desired outcome. In a broader sense, Keynes perceived his theory as a comprehensive framework in which the use of resources may vary between high and low levels. This was in contrast to

earlier economic theories that primarily concentrated on the specific scenario of full resource utilization (Hollings, 2000).

Literature review

Economic stimulus programmes

For the purpose of reviving an economy that is experiencing difficulties, a government may implement a series of economic initiatives known as an economic stimulus package. The stimulus package is a preventative or corrective step that was implemented in order to decrease the impact of a recession or to prevent one from occurring. A number of different actions, including lowering interest rates, expanding government spending, implementing quantitative easing, and others, are included in this plan. This has been a topic of discussion in recent years, which was prompted by the string of economic downturns that have been experienced by both developed and developing nations all over the world throughout the years (Mahamallik & Sahu, 2023). In the past, governments all over the world have adopted a variety of methods in attempt to stabilize the economy. These policies include decreasing interest rates, increasing government expenditure, and adopting quantitative easing. As a result of the credit crisis that occurred in 2008-2009, the term "economic stimulus" became widely used as a reference to efforts that were taken in order to stimulate the economy. The consequence of this was that nearly all countries around the world experienced economic downturns, and in some cases, catastrophic economic downturns (Etelkozi, 2023).

Initiatives designed to stimulate the economy have been essential in the economic recovery of a number of nations in the years after the Great Depression. Over the course of the past decade, a number of nations were successful in implementing economic stimulus packages. An economic stimulus package with a total value of US$ 2.18 trillion was presented by a group of 43 countries in 2009. This amount is equivalent to 3.5% of the gross domestic product (GDP) of the entire world. Based on an examination of the ways in which countries responded to the economic and financial crisis, it has been determined that Asia adopted stimulus measures of around the same magnitude (Gu et al., 2023). Aktar et al. (2021) discovered in 2008 that the continent of Asia and the Pacific, with the exception of Korea and Japan, allocated around 9.1% of its gross domestic product to stimulus measures. Herron (2018) asserts that China played a significant part in the process of stimulating expenditures in Asia by implementing a stimulus package that amounted to 12.7 percent of the country's gross domestic product in 2008. A number of countries, including the United States of America, Korea, and Saudi Arabia, have announced significant economic stimulus programs (Triggs, 2018). China is one of the top twenty nations that have made such announcements. According to Ocampo and Vos (2008), the United States package is exceptional due to its substantial magnitude, which is comparable to 5.6 percent of the country's gross domestic product in 2008 and amounts to nearly $800 billion. In the meantime, of the countries that make up the G20, Russia, the United Kingdom, Indonesia, Mexico, Brazil, and France all presented stimulus packages that were equal to or lower than two percent (Triggs, 2018). There are continuing questions over the effectiveness of economic stimulus packages, notably in Kenya (Wesonga, 2018). This is despite the fact that these packages have been frequently employed in both developed and developing nations

to stimulate the economy. In the case that a government anticipates an economic downturn, it may take the initiative to launch a coordinated effort to either lessen the severity of the downturn or to completely prevent it from occurring. An economic stimulus package is a series of economic actions that are implemented by the government in the form of a stimulus package. The measures are carried out in order to take advantage of the considerable multiplier effects, which will ultimately lead to an increase in consumption from the private sector and an increase in investment spending (Raga, 2022).

During the speech that was given to parliament in 2009/10 about the budget, the Economic Stimulus Programme or Package (ESP) was presented to the public and made known to them in Kenya (MoF, 2010). The event was centered on the topic of "Overcoming Contemporary Obstacles for a More Promising Future in Kenya," which was the centrepiece of the event. Particularly in response to the severe repercussions of the post-election violence that occurred in 2007/08 and the global economic recession that occurred in 2008/09, both of which had substantial detrimental impacts on economies, including that of Kenya, the objective of the initiative was to promptly revitalize the Kenyan economy for the purpose of long-term expansion and progress(Ochieng et al., 2023). According to Gregory (2005), the government allotted 22 billion Kenyan shillings for the budget of the economic stimulus program (MoF, 2009). The coordination of the Economic Stimulus Program was overseen by the Ministry of Finance on behalf of the government. Following the global economic crises that occurred in 2008 and 2009, the majority of countries around the world had an increase in their real GDP in 2010. This was a positive outcome that was brought about by the global fiscal stimulus measures that were implemented by various countries (Lumumba, 2018). It was anticipated that worldwide production would increase by 4.2 percent in 2010, following a decrease of 0.6 percent in 2009. This was in response to the economic crisis that that occurred in 2009. Nevertheless, the rate of economic recovery around the globe varied from country to country when compared to one another. According to the Economic Stimulus Programme Handbook (2009), the primary goals of the Economic Stimulus Program (ESP) were to help the nation's economy recover, to allocate resources toward sustainable solutions for food security issues, to increase job prospects in rural areas, to foster equitable regional development for social stability, to improve infrastructure, education, and healthcare standards, to allocate funds toward environmental preservation, to expand and enhance access to information and computer technology (ICT) in order to stimulate economic opportunities, and to speed up economic growth (Stern & Zenghelis, 2021).

Education development in Kenya

The education industry in Kenya has experienced significant growth since the country gained independence. According to the reports from multiple investigative commissions and task forces on education, there is clear evidence that the escalating expenses of education for households must be controlled to guarantee optimal accessibility and completion rates. Kenya experienced an average economic growth of 5.7 percent in 2019. However, due to the COVID-19 pandemic, the growth of the country's real gross domestic product (GDP) slowed down to 1.2 percent in 2020 (Siringi,

2021). Kenya is now establishing a competency-based curriculum (CBC) as a replacement for the 8-4-4 education system that has been in use since 1985 (Akala, 2021). The new educational framework, known as the 2-6-3-3 system, comprises two years of pre-primary education (for children aged 4–5), three years of lower primary school and three years of upper primary school (for those aged 6–11), and three years of junior secondary school followed by three years of senior secondary school (for those aged 12–17 years) (Amutabi, 2019).

The primary goal of the CBC is to cultivate the full potential of each student by ensuring that all students acquire the fundamental skills and knowledge necessary for success. This is achieved by placing greater emphasis on ongoing, continuous assessment rather than final, conclusive evaluation (Nyaboke et al., 2021). The implementation of the Competency-Based Curriculum (CBC) commenced in 2017, with the government aiming to fully replace the 8-4-4 curriculum by 2026. Kenya, as a participant in multiple international conventions and agreements, has made substantial pledges to ensure the delivery of high-quality and inclusive education as a fundamental entitlement. This commitment is evident through various educational reforms that have led to modifications in the education system's framework, including the recent gradual introduction of the 2-6-3-3 system and CBC (Mohamed, 2023).

The Sessional Paper No. 10 of 1965 on African Socialism and its Application to Planning in Kenya (RoK, 1965) viewed education as primarily an economic function rather than a social one. The primary method for addressing the scarcity of skilled labor inside the country and promoting equal employment opportunities among Kenyan citizens. The country's workforce, which was passed down from the colonial administration, was predominantly lacking in education, training, experience, and the advantages brought about by economic development. The government's 1996-1968 Five-Year Development Plan emphasized the concept of universal primary education as a means of mitigating poverty and social inequality. From 1964 to 1982, the government implemented various initiatives to enhance primary school enrollments. These policies included waiving fees for children whose parents were unable to pay, introducing boarding facilities for nomadic populations, and expanding existing school facilities. The government's decision to allocate more funds to primary schools resulted in the elimination of tuition fees, but secondary schools experienced a decrease in financial support.

The International Monetary Fund (IMF) and the World Bank implemented structural adjustment programs (SAPs) in Kenya throughout the 1980s. These programs were introduced due to the country's deteriorating economic performance, which resulted in higher levels of poverty (RoK, 1999a). In 1988, Kenya implemented a cost-sharing strategy throughout all levels of education (RoK, 1988). The policy had a negative impact on various sectors of education, leading to decreased rates of enrollment, inadequate availability of learning materials, and a decline in the quality of education delivered. The cost-sharing scheme imposed a significant financial strain on the majority of households. A significant number of impoverished and marginalized households, without the financial means, withdrew their children from school, leading to substantial decreases in enrollment, retention, and graduation rates. The policy is believed to have caused a rise in household spending on education,

amounting to between 33% to 44% of their yearly incomes. Out of this, around 37.3% was allocated to indirect expenses such as uniforms, books, transportation, stationery, and pocket money.

In 1998, the Kenyan government authored the initial poverty reduction plan paper (RoK, 1998). The government emphasized in its Human Resource Development chapter that it would allocate resources to enhance the provision and accessibility of fundamental social services, specifically education and health. This would be achieved through establishing stronger collaborations with development partners, NGOs, religious organizations, and private providers, with the aim of expanding and enhancing the scope and standard of these services. Following the significant increase in enrollments during the two decades after independence, a subsequent decline was observed across all educational levels. This decline was marked by a lack of enrollment, a high number of dropouts, low completion rates (particularly among girls), and inadequate progression from one educational level to another. The primary cause of this is predominantly the exorbitant expenses associated with education, which have been further exacerbated by the implementation of the cost-sharing scheme. The government should prioritize enhancing educational accessibility across all levels by reducing the financial burden on people. The government, in its Interim Report on Poverty Reduction Strategy (2000–2003), demonstrated its commitment to addressing the issue of access to education. It vowed to enhance access by augmenting the availability of textbooks and other educational resources, promoting the establishment of additional day schools, and supplying science equipment and other supportive materials as well as scholarships to impoverished households (RoK, 2003).

Moderating effect government policy

In order to reconcile the requirements of the Kenya Vision 2030 and the Constitution with the needs of the country in terms of human capital development, the Ministry of Education, Science, and Technology has built a policy and legislative structure for education and training. A new policy and legal framework on education and training was required to be developed as a result of the incorporation of the Bill of Rights into the Constitution of Kenya in the year 2010. The reason for this was because the Education Act that was in effect at the time, Cap. 211, did not fully handle the different rights that were offered to students. Despite the fact that it describes the policy framework for education, training, and research, the Sessional Paper No. 1 of 2005 did not fully offer the fundamental base that is required to grow the skills and capabilities that are important to meet the goals of Kenya Vision 2030. A further objective of the policy is to make it easier for Kenya to fulfill its international obligations, particularly the targets and objectives of the Millennium Development Goals (MDGs) and Education for All. In order to fulfill these responsibilities, the parties involved are obligated to make certain that the benefits of a comprehensive education are available to each and every person in the country.

In order to meet the requirements of the country's human capital, the education and training policy intends to provide a curriculum that gradually improves the citizens' knowledge, skills, and competences, as well as their attitudes toward learning that continues throughout their lives. The purpose of this endeavor is to cultivate a wide variety of

skills and competencies that are necessary for achieving the goals and objectives that are defined in the Constitution (2010) and Kenya Vision 2030. In accordance with the policy and the ensuing legislative framework, the government will provide elementary education that is not only free but also necessary, and it will be of a high quality, fair, and in line with Kenya's development goals. As stated in Article 53 of the Constitution, this effort will be directed by the principle of ensuring that every child under the age of 18 has equal access to education. This principle will serve as the guiding principle. Every single child, regardless of their socioeconomic condition, gender, geographical origin, or disability, should have the opportunity to receive an education that is both free of charge and of the highest possible quality. New concepts are included in the policy and legislative framework, and these new concepts will bring about a significant shift in the structure of the requirements and goals for education and training in the country.

This policy will dramatically alter the structure of the curriculum as well as the way it is implemented, which is one of the most important aspects of this policy. An education curriculum that is well-balanced and in accordance with the goals and objectives of Vision 2030 will be developed and implemented by the government throughout this time period. In order to grow a variety of skills and talents that are required for both learners and teachers, it is vital to develop teachers with a new viewpoint. This is necessary in order to prioritize critical educational goals that are connected with the subject matter. In addition to focusing on the development of teachers, the policy places an emphasis on pedagogical skills, topic competency, and the improvement of school-based quality accountability. A vital basis for the new curriculum model and its implementation is the growth of competences and skills that enable learners to not only absorb the material and concepts contained in the curriculum, but also to foster analytical, critical, and conceptual abilities. This is the essential basis for the new curriculum model. When it comes to a dynamic education system that is in line with the goals of higher education, vocational training, and the requirements of the professional world, these abilities are absolutely necessary. The development of a population that is capable of actively participating in the activities of the nation is dependent on the acquisition of these capabilities, which are important for the accomplishment of the competencies required to realize Vision 2030.

A curriculum that is comprised of three parallel and complimentary tiers—academic, vocational, and technical—is included into the policy framework that governs education and training to include a curriculum. A multi-track system will be implemented by the government in order to meet the educational needs of these distinct groups. This system will also provide a pathway for advancement to higher education through any of the three tiers. Learners will have the capacity to pursue paths depending on their shown capabilities, given that they are able to recognize their areas of strength. This ability will be available to them. In order to ensure that the specific educational needs of children are adequately met, the government will establish new technical vocational education and training (TVET) programs and improve the ones that are already in place. In addition to this, the policy statement provides a detailed description of the strategies that will be put into action in order to acknowledge, cultivate, and improve the capabilities of pupils. The major objective of technical and vocational education and training

(TVET) is to build a well-organized and synchronized TVET system that is capable of producing high-quality, trained human resources that possess the requisite attitudes and values that are essential for the advancement and success of various sectors of the economy. Therefore, the study proposes an argument that;

H_1: Economic stimulus programs have no effect on education development

H_2: Government policy does not moderate the relationship between economic stimulus programs and education development

The study aimed to investigate the extent to which government policy influence the relationship between economic stimulus programs and education development, as depicted in Figure 1.

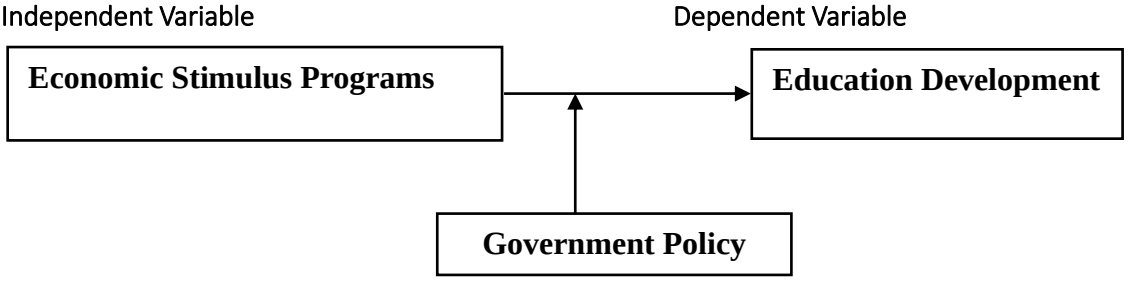

Figure 1: Conceptual framework

Methodology

This study utilized an explanatory research methodology and applied a systematic random sampling strategy. This quantitative methodology enables the researcher to assess the research objectives using numerical and objective investigations (Hamidu et al., 2023). The researchers employed an explanatory study approach to establish a causal relationship between variables. According to Hair et al. (2006), employing an explanatory study design enables the utilization of inferential statistics to determine the relationship between the dependent and independent variables. Typically, it is a quantitative study that examines pre-existing assumptions by evaluating the connections between variables (Zohrabi, 2013). Johnson et al. (2020) carried out a comparable study in the United States, utilizing same research methodologies.

Data and sample

This study focused on analysing the economic stimulus program and the effect it had on the livelihoods of the residents in Keiyo South Sub-County, located in Elgeyo-Marakwet County, Kenya. The study obtained data by employing a closed-ended, self-administered questionnaire from a targeted sample of 370 participants. The surveys underwent pre-testing to verify the appropriateness of their wording, format, and question sequencing.

Reliability and validity

Given that the study's data were collected at several levels of measurement, it was deemed crucial to evaluate its dependability (Frohlich & Westbrook, 2001; Agus, 2010). Cronbach's alpha was employed to evaluate the internal consistency of each factor. The reliability analysis was conducted by

calculating the Cronbach's alphas for the eliminated superfluous components to optimize simplicity and efficiency. The results reported in Table 1 indicate that main constructs in the study. The the Cronbach's alpha values for the three core constructs above the acceptable threshold of 0.70 set by Nunnally (1994).

Table 1: Reliability statistics

Variable	Cronbach's Alpha	No. of Items
Economic Stimulus Programs	.737	5
Government Policy	.735	8
Education Development	.743	4

The construct validity of each scale was evaluated by confirmatory factor analysis (CFA). This study assessed the effectiveness of each individual component in quantifying the magnitude, as determined by Sujati and Akhyar (2020). The study employed confirmatory factor analysis to ascertain the unidimensionality of each idea. Also, the study performed the tests to ascertain and assess the ultimate components of the constructs that will be utilized for statistical analysis and hypothesis testing.

An exploratory factor analysis (EFA) was used to assess the alignment between the components generated from the analysis and the constructs provided in the literature. The EPA results indicated that all components had significant loadings on their respective variables, with eigenvalues exceeding 1.000. The range of total variance explained varied from 18.50 to 77.34, as seen in Table 2. In addition, the KMO (Kaiser-Meyer-Olkin) test produced a score of 0.599, suggesting a significant level of adequacy. Furthermore, the Barlett's Test of Sphericity yielded a significant chi-square value of 2538.699. According to Hair, Anderson, Tatham, and Black (1998), the Kaiser-Meyer-Olkin (KMO) score in this analysis surpassed the minimum threshold of 0.50. All constructs were categorized based on the assigned factors, which had substantial factor loadings. The outcome gave empirical support for the theoretical formulation of the three constructs.

Table 2: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.599
Bartlett's Test of Sphericity	Approx. Chi-Square	2538.699
	df	136
	Sig.	.000

The factor analysis procedure resulted in the identification of six components, as shown in Table 4.4, with Eigen values greater than 1.0. Table 4.4 displays the factor loading of each item, with the variables arranged in order of magnitude. The eigenvalues for each factor exceed 1.0 (3.30, 2.51, 2.15, 1.71, 1.23, and 1.11), indicating that each factor may account for a greater amount of variance than a single variable. The total proportion of variance accounted for by the six components is 70.72 percent. To clarify, these six factors can account for or explain more than 70 percent of the common variance shared by the 17 items. Construct validity is confirmed based on these findings.

Table 3: Principal Component analysis results

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.301	19.417	19.417	3.301	19.417	19.417	2.754	16.203	16.203
2	2.518	14.810	34.228	2.518	14.810	34.228	2.305	13.558	29.761
3	2.151	12.652	46.880	2.151	12.652	46.880	1.950	11.468	41.229
4	1.711	10.062	56.942	1.711	10.062	56.942	1.867	10.983	52.211
5	1.232	7.245	64.186	1.232	7.245	64.186	1.735	10.208	62.420
6	1.111	6.536	70.722	1.111	6.536	70.722	1.411	8.302	70.722

Extraction Method: Principal Component Analysis.

Component one (1) comprises four items that evaluate government policy (G). This variable accounted for 16.20% of the overall variation. Four measures on economic stimulus programs were linked to component two (2), which explained a total variation of 29.76%. Two elements on education and government policy respectively were allocated to component three (3). The findings suggest that the three constituents of this factor contributed to 41.22% of the overall variability.

Table 4: Rotated Component Matrix[a]

	Component					
	1	2	3	4	5	6
G4	.715					
G6	.706					
GI	.650					
G3	.527					
ESP4		.721				
ESP5		.719				
ESP2		.652				
ESP1		.649				
ESP3		.617				
ED2			.869			
G8			.800			
ED3				.788		
G7				.645		
ED1					.885	
G5					.814	
ED4						.800
G2						.749

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 23 iterations.

Component 4 combines two items on education and government policy, resulting in a total variance of 52.21%.

Component 5 comprises two items on education and government policy. The cumulative contribution of these items combined accounted for 62.42% of the total variation explained by this factor.

Component six (6) consisted of two items. The findings suggest that the three items under this variable contributed to 70.72% of the overall variation.

Variables and measurement

The variables investigated in the present research were assessed using scales that were adapted from prior studies, with some modifications to suit the particular context of the current study (Wang et al., 2018). Participants were directed to indicate their level of agreement or disagreement with each issue using a five-point Likert scale, which ranged from (1) "strongly disagree" to (5) "strongly agree." The notion of economic stimulation programs by utilizing five specific elements was implemented. The evaluation of government policy was conducted through the use of eight questions, whereas the assessment of education progress was based on four specific issues. Dummy variables were employed to evaluate gender, providing a binary value of 1 to males and a binary value of 2 to females. The age, education, and domicile of the respondents were categorized.

Model specification

In order to examine the hypotheses, the study utilized a hierarchical multiple regression model (Baron & Kenny, 1986). The objective of the investigation was to propose three regression models. The subsequent sets of equations were utilized:

Model 1. Testing the effect of the predictor variable economic stimulus programs on education development.

$$ED = \beta_0 + \beta_1 ESP_{it} + \varepsilon_{it} \text{..... (1)}$$

Model 2. Testing the effect of the moderating variable government policy on education development.

$$ED = \beta_0 + \beta_1 ESP_{it} + \beta_2 G_{it} + \varepsilon_{it} \text{ ..... (2)}$$

Model 4. Testing the moderating effect of government policy on economic stimulus programs and education development

$$ED = \beta_0 + \beta_1 ESP_{it} + \beta_2 G_{it} + \beta_3 X1 + \varepsilon_{it}$$

.....(3)

Where;
ED = Education Development
βo = Constant
β_1- β_4 = Coefficients of the equations
ESP =Economic Stimulus Programs
G = Government Policy (Moderator)
X1 = Interaction term
t = Time
i = Firm
ε = error term

Empirical findings

Profile of respondents

Table 5 presents a comprehensive summary of the demographic characteristics of the participants in this study. Accurately identifying and understanding the demographic and personal features of respondents is essential, as these elements have a tendency to impact their perspectives on specific subjects. A grand total of 399 self-administered questionnaires were disseminated to the participants, however, only 370 were retrieved, signifying an impressive response rate of 92.7%. Removing outliers helps eliminate potential factors that could undermine the internal validity of the study. Consequently, it was crucial to ascertain if the study variables included multivariate outliers. The researcher utilized the Mahalanobis distance and Chi square methods to detect outliers with many

variables. There were no instances of an outlier being identified. Hence, the researcher proceeded with the analysis using 370 examples.

Table 5: Respondents' demographic characteristics

		Frequency	Percent
Gender	Male	148	40.0
	Female	222	60.0
	Total	**370**	**100.0**
Age	18-30 Years	148	40.0
	31-45	111	30.0
	46-60	111	30.0
	Total	**370**	**100.0**
Education	No formal education	74	20.0
	Primary School	111	30.0
	High School	37	10.0
	College	74	20.0
	University	74	20.0
	Total	**370**	**100.0**
Residency	0-5 years	74	20.0
	6-10 years	37	10.0
	11-15 years	111	30.0
	Over 16 years	148	40.0
	Total	**370**	**100.0**

Descriptive statistic and correlation analysis

Table 6 presents the summary statistics for the sampled variables, indicating that economic stimulus programs (ESP) had the highest mean (M = 3.98) and standard deviation (SD = 1.24). Subsequently, education development (ED) had a mean score of 3.87 with a standard deviation of 1.31, while government policy (G) had a mean score of 3.84 with a standard deviation of 1.29. Pearson's correlation analysis was conducted to evaluate the associations between the variables (Bougie & Sekaran, 2019). Table 6 shows that the variables have a positive connection.

Table 3: Descriptive statistic and correlation analysis

	Mean	SD	ED	G	ESP
ED	3.87	1.31	1		
G	3.84	1.29	.817**	1	
ESP	3.98	1.24	.533**	.613**	1

***. Correlation is significant at the 0.01 level (2-tailed).*

The data presented in Table 6 indicates that there is a significant and robust correlation between government policy (G) and education development (ED), with a correlation coefficient of 0.817 and a p-value of 0.00 which was less than 0.05 level of significance. The correlation coefficient between economic stimulus programs (ESP) and education development (ED) is 0.533, with a significance level (p-value) of 0.000 which

was less than 0.05 level of significance. This correlation coefficient is the smallest among all the values. A correlation value closer to 0 signifies a diminished connection between two variables.

Regression analyses

Hierarchical regression analysis was used to examine our hypothesis. Three models were examined in this study. Model 1 (M1) contained the direct impacts of economic stimulus programs on education development. Model 2 (M2) added the moderator, government policy. Lastly, Model 3 (M3) incorporated the interaction term X1.

Table 7 displays the outcomes of Model 2, specifically examining the impact of the independent variable, economic stimulus programs, on the dependent variable, education development. The results reveal that the independent variable in the model, economic stimulus programs ($\beta = 0.561$, $p = 0.000$), had a statistically significant effect. The model accounts for 28.4% of the overall variation in education development, as indicated by an R^2 value of 0.284. This is supported by a substantial F value of 145.681, with a p-value of .000.

Table 7: Test for direct effects on dependent variable

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.139	.016		8.727	.000
	EPS	.561	.046	.533	12.070	.000
Model Summary						
R		.533				
R^2		.284				
R^2 Change		.284				
Std. Error of the Estimate		.09892				
Model Fit						
F		145.681				
F change		145.681				
Sig.		.000				

The postulated hypothesis between economic stimulus programs and education development having no effect is rejected, leading to the conclusion that economic stimulus programs do indeed influence education development. It was established that economic stimulus programs have improved access to quality education. This finding lends support to past studies which also concluded that increased spending on education, can boost long-term growth by churning out qualified human capital. Arita (2013) states that the Ministry of Education (Kenya) allocated 560 secondary schools for the purpose of constructing, equipping, expanding, and rehabilitating them. This initiative was planned to be implemented during a five-year period starting from 2008 to 2012. The educational sector is prioritized and receives the largest financial allocation due to its integration into the fiscal plans and budget allocations of most countries, including Kenya.

Conversely, research have raised doubts about the efficacy of economic

stimulus measures. In Kenya, the Ministry of Education's final status monitoring report on Economic Stimulus Programme (ESP) infrastructure projects revealed that approximately 43% of the projects were unfinished and hence needed more funding for completion (Ministry of Education, 2011). Occasionally, the projects replicated existing facilities in the schools, resulting in the schools with the challenge of utilizing the additional space/rooms.

Table 8 displays the outcomes of Model 2, with the inclusion of the moderator, government policy, in the model. The analysis revealed that the economic stimulus package (EPS) had a statistically small but beneficial impact on education development (β = 0.054, p = 0.180). The study revealed that government policy (GP) had a strong and statistically significant favorable effect (β = 0.892, p = 0.000). Therefore, it may be inferred that government policy has a beneficial impact on the growth of education. The results suggest an R^2 value of 0.670, a change in R^2 of 0.386, and a statistically significant F= 372.096, p = 0.000. This suggests that government policy accounted for 67.0% of the variance in education development.

Table 8: Test for moderator on dependent variable

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
2	(Constant)	.031	.012		2.600	.010
	EPS	.054	.040	.051	1.342	.180
	GP	.892	.043	.786	20.714	.000
Model Summary						
R		.818				
R^2		.670				
R^2 Change		.386				
Std. Error of the Estimate		.06726				
Model Fit						
F		372.096				
F change		429.056				
Sig.		.000				

Table 9 displays the outcomes of the model regarding the interaction effect of government policy on the relationship between economic stimulus programs and education development. The model demonstrates a high R^2 value of 0.984, indicating that the interaction accounts for 98.4% of the variability in education development. Additionally, the F statistic is 7036.467 with a p-value of 0.000, further supporting the significance of the interaction. Furthermore, the study findings indicate that the economic stimulus program had a negative and statistically significant effect (β = -0.032, p = 0.000).

The moderator, representing government policy in this model, had a significant and negative effect (β = -0.866, p = 0.000). The interaction findings show a negative beta coefficient of -0.052, with a p-value of 0.000. Given that the p-value of the interaction is below the 0.05

significance level, hence hypothesis $H0_2$ was rejected, which posits that government policy does not moderate the relationship between economic stimulus programs and education development. Consequently, the study conclude that government policy does indeed moderate the relationship between economic stimulus programs and education development.

Table 9: Interaction effect of government policy on economic stimulus programs and education development

	Model 1 β(*p*)	Model 2 β(*p*)	Model 3 β(*p*)
(Constant)	.139 (0.000)	.031 (0.010)	1.394 (0.000)
Main Effect			
Economic Stimulus Program	.561 (0.000*)	.054 (0.180)	-.032 (0.000*)
Moderator			
Government Policy		.892 (0.000*)	-.866 (0.000*)
Interaction term			
X1			-0.052 (0.000*)
Model Summary			
R	0.533	0.818	0.992
R Square	0.284	0.670	0.984
Std. Error of the Estimate	0.09892	0.06726	0.01498
R Square Change	0.284	0.386	0.314
Model Fit			
F Change	145.681	429.056	7036.467
Sig. F Change	0.000	0.000	0.000

*Significant at $p < 0.05$

Aiken (1991) and Jose (2008) have both stressed that the most effective approach of comprehending the nature of the moderator's interaction influence is to graphically display it in a graph. This is the method that has been emphasized by previous researchers. It is easier to understand the complex relationships that exist inside the model when Mod Graphs are implemented. As demonstrated in figure 1, Mod Graphs are able to provide a visual representation of the impact that government policy has on the relationship between economic stimulus programs and education development.

The results from model 1, which shows the direct effect of the independent variable, economic stimulus programs, on the dependent variable, education development, have reversed the effect of the independent variable on the outcome in model 3, when the moderator is introduced. This indicates that the relationship described above is an example of an antagonistic moderation. The level of antagonistic moderation ranges from β = 0.561, p = 0.000, which is positive and significant in model 2 to β = -0.052, p = 0.583, which is negative and significant in model 3, indicating that the moderation is present.

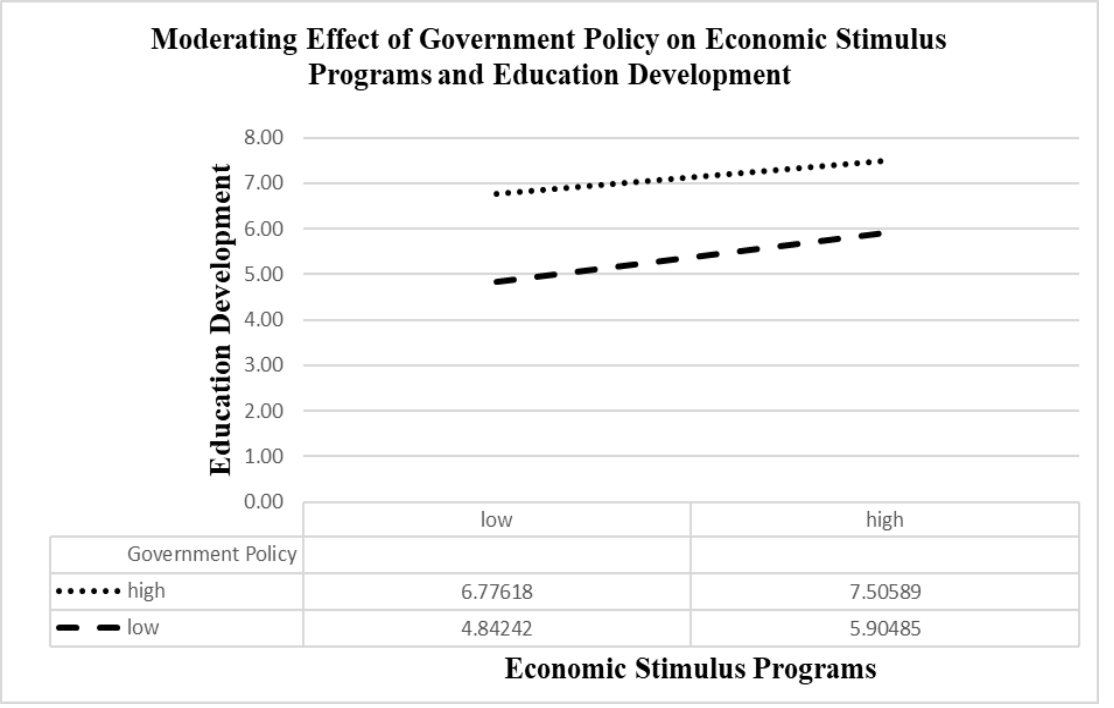

Figure 1: Mod Graphs of the impact that government policy has on the relationship between economic stimulus programs and education development

Discussion

In this study, the main objective was to investigate the moderating effect that government policy plays in the relationship between economic stimulus programs and education development. Specifically, the relationship between the two was examined. Taking this into consideration, the second hypothesis suggests that the relationship between economic stimulus programs and education progress is not moderated by the policies of the government. There have been a number of economic stimulus packages undertaken by governments all over the world. These packages are a combination of fiscal, monetary, and financial policy measures that are designed to guarantee that the education sector operates well. The research led to the conclusion that policies designed to stimulate the economy have a favourable and considerable impact on the growth of educational institutions. It is important to note that when presented with an economic shock that has an effect on the economy, policymakers may take the decision to either retain, decrease, or enhance the current levels of public expenditure on education. Mladovsky et al. (2012) found that with each of the available options, they had the ability to reallocate finances within the education sector in order to improve efficiency. The study also found that the relationship between economic stimulus programs and education progress is significantly moderated by government policy. This was one of the findings that emerged from the investigation.

Conclusion

The Kenyan economy witnessed a plummeted growth in past few years leading to recession. The entire economic activity all over the globe was disrupted

due to the COVID-19 pandemic. To revive the economy out of recession, various monetary and fiscal stimulus measures were announced by the Government.

Most of the empirical literature on the impact of fiscal stimuli is confined almost exclusively to developed countries, and treats only broad categories of expenditure (transfers, tax cuts, public expenditure). The lack of quality data on developing countries makes it difficult to understand to what extent existing results would carry over to these very different economic settings. At the same time, the lack of sectoral disaggregation of fiscal data, even for developed countries, limits what the literature can cover on the relative efficacy of different types of spending with a view to providing guidance on prioritization.

Theoretical contribution

This work theoretically enhances the existing literature in the field of development studies. This study aimed to address the existing gap in the literature by investigating the role of government policy in regulating the relationship between economic stimulus programs and education development in the Kenyan economy. Data was collected from respondents in Kenya to achieve this objective. In addition, a thorough conceptual model was constructed that is unique in its approach, drawing upon an extensive literature scan and analysis of policies. To the best of our knowledge, very few research studies have tried such a model thus far. Hence, this might potentially make a significant contribution to the current body of research by evaluating the effects of a stimulus package on educational progress, specifically in the post-lockdown era. The work may provide valuable insights for future researchers investigating ambiguous scenarios similar to the one addressed in this study.

Practical implications

The study's findings would have significant policy implications for monetary and fiscal authorities. This study aims to ascertain the efficacy of stimulus measures on education development, specifically by evaluating the extent to which these measures have contributed to the increase of real GDP and the advancement of education. This information could assist policymakers in evaluating the goals of their actions and implementing interim adjustments if necessary.

The study might potentially be expanded to incorporate an analysis of how the fiscal stimulus packages implemented by both domestic and foreign governments affect the actual growth of Kenya's gross domestic product (GDP). Furthermore, in the future, it may be beneficial to conduct face-to-face interviews with the primary recipients of these monetary and fiscal stimulus packages in order to assess the efficacy of each program on the growth of education.

Limitations

While this research does make some contributions to the existing body of knowledge, it does have several drawbacks. When it comes to Kenya, our database only has information from a single county. Due to the fact that the study was unable to determine whether or not the findings of this study can be generalized to other countries and countries, it is important to exercise caution when generalizing the findings of this study. In order to make the findings of this study more applicable to a wider range of scenarios, further data from a variety of emerging economies is required. A further disadvantage of this study is that

there were just a few samples taken. The quality of the study was not affected in any way, despite the limits that were described earlier. Taking into consideration the fact that the sample was restricted to those working in the education sector in a single county, it is possible that researchers in the future will carry out the same study on a variety of different sectors.

Robustness test

Furthermore, we conducted a sequence of meticulous examinations to guarantee the dependability and consistency of our findings. Outliers pose a substantial methodological challenge in empirical research, since they can greatly skew research findings (Cousineau & Chartier, 2010) or lead to improper acceptance or rejection of hypotheses (Bollen & Jackman, 1985). Multicollinearity occurs in a multivariate regression model when there are significant inter-correlations among two or more independent variables. Multicollinearity in a model can cause the independent variables to be influenced, resulting in broader confidence ranges and reduced reliability of probability estimates. Therefore, the VIF test was employed to evaluate multicollinearity. The variance inflation factor (VIF) measures the extent of multicollinearity among a set of variables employed in multivariate regression analysis. A high Variance Inflation Factor (VIF) indicates a significant association between the dependent variable and the other components included in the model. Multicollinearity impedes regression models in distinguishing the effects of independent and dependent variables. The traditional VIF (Variance Inflation Factor) commences at a value of 1 and does not possess a maximum threshold. Our data have definitively ruled out the existence of this problem.

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