

Research Article

The Availability of One Textbook per Subject in Basic Education and the Academic Performance of Pupils: The Case of Rural and Urban Primary Schools in the Centre Region of Cameroon

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Abstract

This study examines the role of the availability of one textbook per subject as a major weapon in effectively managing the learning and teaching process in rural and urban schools of Cameroon. The policy, implemented by the Ministry of Basic Education, aims to address persistent challenges related to textbook productivity, availability, affordability, and usability in primary schools. It particularly focuses on its effects on key stakeholders, with an emphasis on pupils' academic performance in urban and rural schools within the Yaoundé VI subdivisions of the centre region. A cross-sectional survey design was employed, incorporating a mixed-methods approach. Data were collected using a semi-structured questionnaire based on a four-point Likert scale and open-ended questions. In addition, interviews were conducted with three members of the National Textbook Commission. Respondents included textbook authors, officials from the Ministry of Basic Education (MINEDUB), head teachers, classroom teachers, parents, and class six pupils. The study sampled 254 participants from a parent population of 300 across both urban and rural areas in the Mbankomo and Yaoundé VI subdivisions. Eight primary schools were selected, comprising four public schools (two urban, two rural), two private schools, and two mission schools from both settings. Data were analyzed using factor analysis. Hypothesis testing revealed a statistically significant relationship between textbook availability and academic performance, with a p-value < 0.05 and a beta coefficient ($\beta = 0.570$), indicating a moderate positive correlation. The null hypothesis was rejected, confirming that textbook availability significantly influences academic performance. The government's "one textbook per subject" policy was well received by stakeholders. However, there is a strong recommendation to extend its implementation to underserved suburban and rural areas, ensuring textbooks are both accessible and affordable across all regions of Cameroon.

Keywords: Textbook Availability, Academic Performance, Rural and Urban Schools, Educational Policy.

Introduction

In recent years, the educational system in Cameroon has witnessed several reforms aimed at improving the quality of teaching and learning. One such development is the introduction of the use of a single textbook for basic education. This move, which is governed by the Bill Governing Inter-Branch Organizations in Cameroon (Law No. 2021/023 of 16th December 2021), has sparked considerable debate among educators, policymakers, and stakeholders regarding its effectiveness in enhancing academic performance, particularly in primary schools. The law aims to regulate and streamline the distribution of educational materials, ensuring consistency and accessibility in both urban and rural areas. This research seeks to assess the impact of using a single textbook on the academic performance of pupils, specifically comparing rural and urban primary schools within the Centre Region of Cameroon. The study is rooted in the broader context of Cameroon's educational reforms, with particular emphasis on the implications of standardized instructional materials in improving educational outcomes. Through this appraisal, the research aims to uncover any disparities in academic achievement between pupils in urban and rural settings, focusing on how the uniformity of textbook usage may either support or hinder the learning process. By examining this issue, the research will contribute to the ongoing discourse on educational policy in Cameroon, particularly in terms of

how textbooks can be leveraged to bridge the gap in educational opportunities between different regions of the country. The findings are expected to provide valuable insights into the practical outcomes of the Bill Governing Inter-Branch Organizations and its role in shaping the academic success of students across diverse socio-economic backgrounds.

The Bill Governing Inter-Branch Organizations in Cameroon (Law No. 2021/023 of 16th December 2021), which regulates inter-branch organizations within the country, forms the legal backbone of various educational, governmental, and non-governmental collaborations in Cameroon. This law provides guidelines on the establishment, operation, and regulation of inter-branch organizations, ensuring the harmonious interaction between different sectors of society, especially in educational matters. By examining the body of literature on educational policy in Cameroon, this review explores the theoretical underpinnings, objectives, and practical implications of this law, particularly as it pertains to basic education, textbooks, and the role of organizations in shaping the educational landscape.

Problem Statement

The educational sector in Cameroon, particularly at the primary level, is critical for setting the foundation of learning and social development for young children. To promote equitable access to quality education, the Cameroonian government introduced one textbook per subject policy in primary education. This policy mandates the use of one approved textbook per subject across schools in the country, aiming to standardize educational content, reduce costs for families, and ensure consistent curriculum delivery. While well-intentioned, this approach has raised significant concerns about its effectiveness, on productivity, availability, affordability and utility especially given the vast differences in educational settings, resources, and socioeconomic realities between urban and rural areas (UNESCO, 2017; Ministry of Basic Education Cameroon, 2018).

The Centre Region of Cameroon, characterized by a mix of urban and rural communities, reflects the disparities that challenge the efficacy of a one-size-fits-all approach. In urban areas, pupils generally have access to more educational resources, better infrastructure, and qualified teachers who can supplement textbook content with additional learning aids. Conversely, in rural areas, schools are often under-resourced, with limited access to educational materials beyond the prescribed textbooks, insufficient infrastructure, and fewer qualified teachers (Shepherd and Devers, 2017; Bashir *et al.*, 2018). Consequently, rural pupils may face significant disadvantages in achieving the educational outcomes expected by the curriculum, as they rely solely on the single textbook without the benefit of supplementary learning materials or enriched instructional support (World Bank, 2018). A further complication is the linguistic and cultural diversity within Cameroon. The one textbook per subject policy, though efficient in promoting uniformity, does not always account for the local languages and cultural contexts that significantly impact comprehension and learning, particularly in rural areas where local dialects may differ from the language of instruction. This limitation raises questions about the adaptability of the textbook to meet the diverse learning needs across regions and cultural backgrounds (Tamanji and Simo, 2018).

Moreover, the policy has implications for teaching practices. With only one textbook as the main instructional resource, teachers may feel constrained in their ability to adapt lessons for diverse learning styles, differentiated instruction, or localized content relevant to pupils' immediate environments. Teachers in both rural and urban settings might struggle to meet the needs of all pupils using a single resource, especially in mixed-ability classrooms where pupils require varied instructional approaches to succeed (Chinsinga, 2018). The policy's inflexibility may inadvertently limit teachers' pedagogical creativity and their ability to engage pupils in ways that foster critical thinking and deeper understanding, as they are required to adhere to the standardized content within the one textbook per subject (UNICEF, 2015).

Additionally, logistical and administrative challenges have emerged as a major concern for the single-textbook policy's implementation. The centralized distribution of textbooks, while intended to streamline resource allocation, has led to delays in textbook delivery, particularly in remote rural areas where transportation infrastructure is lacking. When textbooks are not distributed on time, rural schools are disproportionately affected, as pupils and teachers have no alternative materials to rely upon, further widening the educational divide between rural and urban schools (World Bank, 2018).

This research focuses on assessing the impact of the one textbook per subject policy within primary schools in the centre region, with a specific emphasis on the disparities between rural and urban educational contexts. The study aims to determine whether the one textbook per subject policy is effectively meeting its

objectives of providing equitable and quality education, or whether it inadvertently exacerbates existing inequalities between rural and urban areas. By appraising the effectiveness of this policy, this research will offer insights into its limitations and suggest potential improvements to better address the diverse educational needs of Cameroonian primary school pupils.

Purpose of the Study

This study aims to appraise the implementation and outcomes of the one-textbook per subject policy in primary education within the context of Cameroon. The primary objectives are to evaluate the policy's impact on school performance and academic outcomes, examine disparities in access to textbooks between rural and urban areas, and assess the perceptions of educators, pupils, and parents regarding the policy. The findings from this study are expected to provide insights for policymakers, educators, and stakeholders into the strengths and limitations of a standardized textbook policy in a diverse educational landscape.

Literature Review

The Role of Textbooks in Academic Performance

The relationship between textbook availability and academic performance has been widely researched in various contexts. In Cameroon, the role of textbooks in enhancing learning outcomes is particularly critical due to the varying levels of access to educational materials in different regions. Several studies have shown that the use of textbooks significantly impacts the quality of education, particularly in primary schools.

According to Nkongho (2020), textbooks are essential tools in shaping students' understanding and mastery of the curriculum. They provide a standardized medium of instruction that can reduce disparities in teaching methods, especially in rural schools that often suffer from inadequate educational resources. However, the effectiveness of a single textbook system is contested. While standardizing textbooks can ensure consistency in the content taught across different regions, some scholars argue that it may not account for the diverse needs of students in varying socio-economic contexts. For instance, Fomunyam (2021) notes that the one-size-fits-all approach might not address the unique challenges faced by pupils in rural areas, where access to other educational resources like supplementary materials and teacher training may be limited. This view is supported by Ndongko (2023), who suggests that the uniform use of textbooks might hinder the adaptation of teaching methods to local contexts and the varied learning needs of students. Moreover, pupils in rural areas, who often come from lower socio-economic backgrounds, may face additional barriers such as language and cultural differences, which a standardized textbook may not fully address.

Implications of Law No. 2021/023 for Rural and Urban Schools

The implications of the Bill Governing Inter-Branch Organizations for rural and urban schools are significant, especially with regard to the equitable distribution of educational resources. Urban schools generally benefit from better infrastructure, more trained teachers, and greater access to educational materials (Ekambe, 2021). However, rural schools often face greater challenges in obtaining and utilizing educational resources, including textbooks. Law No. 2021/023 has the potential to bridge this gap by regulating the supply of textbooks and ensuring that both rural and urban schools receive the same resources, thus standardizing educational content across the country.

A study by Tchunte (2020) highlighted that while urban schools often have an abundance of educational resources, rural schools in Cameroon are typically underserved. The introduction of inter-branch organizations to oversee the textbook distribution system could lead to a more effective and equitable allocation of resources. However, Fongang (2022) raises concerns about the practical implementation of the law, noting that despite the regulatory frameworks, local challenges such as transportation, logistical constraints, and insufficient teacher training might still undermine the law's impact on rural schools.

Moreover, urban schools may face different challenges under this law, such as the need for adapting curriculum materials to meet the demands of a more diverse student population. The law's emphasis on a single textbook for all students may limit teachers' flexibility to address the varying levels of academic readiness and interests of their students (Zambo and Jambou, 2022). Therefore, while the law aims to provide consistency and equity, it may also require additional support mechanisms to ensure that both rural and urban schools can fully benefit from the standardized approach.

The Bill Governing Inter-Branch Organizations in Cameroon (Law No. 2021/023) represents a significant step towards enhancing the country's educational system, particularly through the regulation of textbook distribution. While the law aims to create a more equitable educational environment, challenges remain in

its implementation, especially regarding its impact on both rural and urban primary schools. The literature suggests that textbooks play a crucial role in academic performance, but the standardization approach may not always account for the diverse needs of students in different contexts. Future research should focus on evaluating the practical outcomes of the law, particularly in terms of its effectiveness in bridging the educational gap between rural and urban pupils and ensuring that all students have access to quality learning materials.

Textbook is one of the vehicle through which education empowers its learner with the necessary knowledge, skills, attitudes and values that enable them to be useful for personal and national development (IBE UNESCO, 2022). Textbook should, therefore meet the needs of the individual learner and the nation. According to Nero (1995) textbook evaluation has also come to be viewed by different scholars as providing pedagogic information for decision makers, the systematic investigation of the worth or merit of some objective and an act of collecting systematic information regarding the nature and quality of educational objectives. Wheeler (1997) contends that evaluation in the educational process that provides the means of finding out whether educational objectives are being attained. Furthermore, textbook change is a pre-occupation of the entire country, regardless of political, social or economic status. The word textbook stems from *textus*, a Latin word meaning to scripture text, treatise, which is a written account, content characters used in a document (Hoardley and Jansen 2021). When it is used in educational context, textbook is an adjectival quintessential classic document that respects the principles, theories and methodology of scholarly historical research and presentation.

In Cameroon the nursery school textbooks lasts for two years, the primary school curriculum for six years, and the ordinary secondary is five years but from 2017 to 2021 all the textbooks lasted for 6 years. From December 16, 2021, according to the law regulating the textbook sector, a textbook remains valid for three years, renewable. For a learner to fully use a textbook, the school management, parents, and most importantly teachers are required to all support the learner for their race. In an attempt to make the textbook effective to provide relevant knowledge, skills, and real-life competencies, it must always be subject to change and evaluation. This change can only be meaningful if there is an evaluation to explain why a change is necessary. This work is intended to find out the effectiveness of the change to one textbook, its implementation, and its impact on the learners in both rural and urban areas in the central region and consequently to chart the way forward. This desperate need for change has been anchored by the opinions of the society; its increased information, dynamism and mobility have changed the request for the educational area. Moreover, the need of mastering new social roles by university graduates has significantly increased the level of expectations that shall be justified by an education in the field of social restructuring. In such context, implementing the use of one textbook per subject, the outskirts and municipalities in context with the approach education is a key issue of modern educational science. Over a short period, education and professional competency have taken leading positions in globalization history in positioning of manufacturers, industries, and the scientific research associated, including those within the educational science. All of these must have solid bases that act as the springboard (basic education) where the foundation for better global competitive advantage is built. As a strategic area of educational or teaching system organization, the teaching-based approach is a method for keeping general and professional education in balance with the needs of the society and labor market. By the early 21st century, economic processes as well as a proliferation of new technologies had accelerated the pace of globalizing competitiveness in the educational area. Therefore, the issue of social expertise, mastering skills, and competency as basic cluster ideas of goal setting of the modern educational process got the highest acuteness over the entire history of its development (Butova, 2015).

In Cameroon, like many other countries like the USA, Britain, Tanzania, Kenya, Algeria, Ghana just to name a few, the basic educational sphere has never ceased to witness the coming and going of an endless range of innovation and inventions and creative pathways. All these issues have come into play because of one overarching factor: teachers and textbook planners are constantly in search of better and more fruitful avenues for the ultimate attainment of better success scores (Mansour, 2020). Mansour also argues that whenever a new textbook and approach endeavor to prove its maturity and its capacity to iron out the thorniest of issues that earlier approaches have not been adequately capable of doing, it strives to bring into question its fragilities and virtually endless shortcomings that its proponent approaches are notorious for.

This study is aimed at uncovering several facets with regard to how one textbook approach to teaching and learning has been handled and rated in the Cameroon primary school setting. It will attempt to cast light on certain issues, characterizing the actual socio-economic and political predicaments of multiple textbooks

that the teachers, parents, and government ran into while trying to implement the approach in the various primary schools. The use of one textbook, we hope, will pave the way to an evaluation that shall uncover to what extent this policy has been implemented in the primary schools under study.

Methodology

Research Design of the Study

The research design for this study is structured to provide a comprehensive evaluation of the one-textbook policy in Cameroon's primary education system, with a focus on rural and urban primary schools within the centre region. This section details the methodological framework employed to assess how the single-textbook policy is implemented, as well as its perceived effectiveness and challenges across different educational contexts. By adopting the mixed-methods and comparative study research designs, the study leverages both quantitative and qualitative data to capture a well-rounded perspective on the policy's impact in diverse school settings.

Rationale for Mixed-Methods Design

A mixed-methods research design was selected for this study to address the complex nature of educational policy implementation, particularly the use of a single textbook in varying educational environments. Mixed methods enable researchers to triangulate findings from different data sources, providing a more nuanced understanding of a phenomenon than would be possible through purely quantitative or qualitative approaches alone (Creswell and Plano Clark, 2018). In the context of this study, quantitative data help quantify the extent of the policy's impact on measurable outcomes such as student performance and resource availability, while qualitative data offer insights into the lived experiences, perceptions, and challenges faced by teachers, students, and administrators in both rural and urban schools.

This approach is further justified by previous studies that highlight the role of contextual factors in educational policy effectiveness. For instance, research on similar textbook policies in Sub-Saharan Africa has shown that local conditions-such as teacher quality, infrastructure, and community engagement-significantly influence outcomes (Lockheed and Verspoor, 1991; Piper *et al.*, 2018). By using both quantitative and qualitative data, this study aims to capture these contextual variations and generate actionable insights for policymakers.

Comparative Study Research Design

This study adopts a comparative research design to analyze the impact and effectiveness of the one-textbook policy in Cameroon's primary education system, focusing on rural and urban primary schools in the centre region. Comparative research allows for a systematic examination of differences and similarities between rural and urban educational settings, offering insights into how context-specific factors affect policy implementation and educational outcomes. This chapter details the design elements, including the research approach, target population, sampling methods, data collection techniques and analysis procedures that underpin the comparative framework of this study.

By comparing the experiences and outcomes of schools in rural and urban settings, the study aims to generate evidence on whether the one-textbook policy meets the diverse needs of primary schools across different socio-economic and infrastructural environments. Previous comparative studies in education have demonstrated that factors such as resource availability, teacher qualifications, community involvement, and student backgrounds can significantly influence how educational policies are experienced and implemented (Altinok and Murseli, 2007; Glewwe *et al.*, 2009). This comparative design, therefore, seeks to illuminate the contextual nuances of the policy's effectiveness and to provide policy recommendations that could support equitable educational outcomes across the centre region.

Rationale for a Comparative Research Design

The choice of a comparative research design is driven by the need to understand how environmental, social, and economic differences between rural and urban areas shape the implementation and impact of the one-textbook policy. Comparative studies allow researchers to examine the factors that influence educational outcomes by observing variations across distinct groups, such as rural and urban schools, which are often subject to different levels of resource access, infrastructure, and community support (Bray and Thomas, 1995). For this study, the comparative design is essential for evaluating whether the one-textbook policy is equally effective in diverse contexts or if specific adjustments are needed to address unique challenges faced by rural or urban schools. Previous research suggests that while textbook availability is crucial for primary education, additional variables like teacher qualifications, school infrastructure, and parental involvement

can significantly impact educational effectiveness, particularly in low-resource environments (Nannyonjo, 2007). A comparative design will thus enable this study to examine whether the single-textbook policy adequately supports learning in both settings or if rural schools require additional resources to achieve comparable educational outcomes.

Research Approach

This study adopts a mixed-methods approach within the comparative research design to capture both quantitative and qualitative data from rural and urban schools. The integration of quantitative and qualitative data enhances the depth and reliability of the findings, allowing for a holistic comparison of the one-textbook policy's impact across different school environments (Creswell and Plano Clark, 2018). Quantitative data provide measurable insights into the policy's effects on educational outcomes, while qualitative data offer contextualized perspectives on how the policy is implemented and experienced by teachers, students, and parents. Through the use of surveys, interviews, and focus groups, the study collected data from a wide range of stakeholders, including school administrators, teachers, students, and parents in both rural and urban areas. This combination of methods facilitates a more robust comparison by ensuring that the perspectives of all groups affected by the policy are captured and analyzed in relation to the specific context in which they operate.

Area of Study

This study focuses on assessing the implementation and impact of the one-textbook policy in primary education within two distinct areas in the Centre Region of Cameroon: Yaounde VI sub-division and Mbankomo. By examining schools in both urban and rural contexts, this research aims to uncover the disparities and unique challenges associated with the policy across different socio-economic and infrastructural environments. The selection of Yaounde VI sub-division, representing an urban area, and Mbankomo, representing a rural area, provides a comparative basis to understand how geographical and contextual differences influence the effectiveness of the one-textbook policy.

Significance of the Comparative Focus on Yaounde VI and Mbankomo

The selection of Yaounde VI sub-division and Mbankomo as the focus areas for this study offers a meaningful basis for comparison between urban and rural contexts in the centre region. Research has consistently shown that urban and rural schools face distinct challenges and have varying levels of access to resources, qualified personnel, and community support (Lockheed and Verspoor, 1991; Glewwe *et al.*, 2009). By comparing these two areas, this study aims to identify how these contextual differences impact the implementation of the one-textbook policy and to assess the extent to which the policy's objectives are being met in each setting.

Population of the Study

The population of this study consists of primary school stakeholders in the Centre Region of Cameroon, specifically within Yaounde VI sub-division and Mbankomo. These stakeholders include primary school teachers, administrators, students, and parents from both urban and rural settings, as well as regional education officers who oversee policy implementation. This broad target population provides diverse perspectives on the one-textbook policy's impact on teaching practices, student learning experiences, and community engagement. In this study, the population is the totality of those specific individuals about which the researcher intends to make some inferences through collecting data from sample about which information is collected for analysis. Here, it involves a parent population of 300 in both urban and rural areas in the Mbankomo and Yaoundé VI sub-divisions.

Table 1. Population distribution according to school types.

Schools	Urban	Rural	Total
Public	100	100	200
Mission	25	25	50
Private	25	25	50
Total	150	150	300

Note: Data collected from field research in 2023.

The Target Population

This is the population to which the researcher ultimately wants to generalize the results (Amin, 2004). The target population of this study is 300 made up of pupils, teachers and parents from diverse primary schools in the Mbankomo and Yaoundé VI sub-division of Mfoundi division with emphasis on all the three school

types (public, private, and confessional). Eight primary schools from these areas were selected public schools from urban areas Yaoundé VI and from rural areas Mbankomo, 2 private and 2 mission schools from urban and rural areas respectively.

Table 2. School distribution according to school types.

Schools	Urban	Rural	Total
Public	Yaounde VI	Mbankomo	4
Mission	Yaounde VI	Mbankomo	2
Private	Yaounde VI	Mbankomo	2
Note: Data collected from field research in 2023.			

The Accessible Population

This is the population to which the researcher can apply the conclusions (Amin, 2004).

Table 3. Distribution of teachers according to accessible populations.

School type	Number of teachers	Number selected	Percentage selected	Percentage rejected
Public	200	162	81.0%	19.0%
Mission	50	45	90.0%	10.0%
Private	50	47	94.0%	6.0%
Total	300	254	84.7%	15.3%
Note: Data collected from field research in 2023.				

The accessible population of this study is drawn from the target population. From the table, we have 8 schools with a parent population of 300.

Sample and Sampling Technique

Sample Size

A sample is a section of the population study. It is a mirror image of the target population; a segment of the population selected to represent a whole. Ryan (2000) cited by Maloba (2016) defines a sample as a set of choices that the researcher makes in order to move from all potential data which is analyzed and used on the final result or report of the investigation. The sample size was gotten using the Taro Yamene formula and also supported by Krejcie and Morgan (1970), which states that any research work with a given population, can find the respective sample size below.

Taro Yamane formula

$$n = N / (1 + N(e)^2)$$

$$300 / (1 + 300(0.05)^2) = 254$$

Table 3 above shows the different types of populations and their respective sample sizes. From the table, the researcher was guided to identify a sample size of 254. From the sample size and population indicated above, the researcher was able to determine the representativeness of the population by the sample using the calculation.

Sampling Technique

The simple random and stratified sampling techniques were used in this study. The multistage sampling technique was used. The researcher started by sampling the schools of Yaounde VI and Mbankomo of Mfoundi Division which is found in the Center Region of Cameroon.

Secondly, the researcher sampled all the inspectorates for basic education found in these two subdivisions. Eight schools were randomly selected from these 2 sub-divisions with a number of teachers and pupils. The stratified sampling technique was also used to identify and classify the diverse population. The selection of respondents was done through a volunteer basis. Those who were available and willing to participate were given a questionnaire to fill, while others were interviewed. The study deployed two sampling techniques: stratified random sampling and purposive sampling.

Stratified Random Sampling: Within each stratum (urban and rural schools), teachers, administrators, students, and parents are selected randomly to ensure that the sample is representative of the population in

each context. This method helps to reduce selection bias, ensuring that the data collected reflects the experiences and perceptions of a diverse group of participants within both Yaounde VI and Mbankomo.

Purposive Sampling: This technique is used to select regional education officers who possess specialized knowledge about the one-textbook policy's implementation. These participants are chosen based on their roles and experience in overseeing educational policies in the centre region, allowing the study to benefit from expert perspectives on policy execution and regional challenges.

Sampling Procedures

For each target group within the study, the sampling procedures are as follows:

Teachers and Administrators: Lists of primary school teachers and administrators are obtained from school registries in both Yaounde VI and Mbankomo. Participants are selected randomly within each sub-division to ensure equal representation from urban and rural schools.

Students and Parents: Schools provide lists of students from various grades, and students are randomly selected within each school to represent different age groups. Parents are then invited to participate through their children's schools, with efforts made to ensure diversity in socio-economic backgrounds.

Regional Education Officers: Due to the small number of education officers overseeing the policy in the centre region, purposive sampling is used to select officers with extensive experience and direct involvement in policy implementation.

Rationale for Sampling Techniques

The use of stratified random sampling allows the study to balance representation from urban and rural settings, ensuring that each context is adequately represented in the data. This approach aligns with the study's goal of comparing the one-textbook policy's impact across distinct educational environments, as it provides a structured way to include participants from both Yaounde VI and Mbankomo.

Purposive sampling for regional education officers is justified by the need to include participants with specific expertise and roles in policy management. Given the limited number of officers in such positions, this approach ensures that the study includes perspectives that are critical to understanding the policy's administrative and logistical dimensions.

Data Analysis Techniques

Descriptive Statistics

Kothari (2004) opines that descriptive statistics is an analytical form to summarize data in a more meaningful way. Descriptive statistics were used to analyse the data collected from the field with the use of questionnaires and interviews. Charts and tables were used to present the descriptions.

Inferential Statistics

Wayne (2007) defines it as a prepared test upon which conclusions are made. Here, the sample size of the population is used to test the hypothesis, and then the results are generalized on the population from which the sample is drawn. The regression analysis was used because of its universality. Specifically, multivariate regression modelling (structural equation model) was used. Regression analysis is the relationship between dependent and independent variables as it depicts how dependent variables will change when one or more independent variables change due to factors. Therefore, the calculation formula is $Y = a + bX + E$, where Y is the dependent variable, X is the independent variable, a is the intercept, b is the slope, and E is the residual.

Regression is a statistical tool to predict the dependent variable with the help of one or more independent variables. While running a regression analysis, the main purpose of the researcher is to find out the relationship between the dependent and independent variables. One or multiple independent variables are chosen, which can help predict the dependent variable. In addition, it helps validate whether the predictor variables are good enough to help predict the dependent variable.

A regression analysis formula tries to find the best fit line for the dependent variable with the help of the independent variables. The regression analysis equation is the same as the equation for a line which is:

$$y = mx + b$$

Where,

y = the dependent variable of the regression equation
m = slope of the regression equation
x = dependent variable of the regression equation
b = constant of the equation

Thematic Analysis for Qualitative Data

For qualitative data collected through interviews and open-ended questionnaire responses, thematic analysis is employed to capture underlying patterns, themes, and insights into participants' perceptions and experiences regarding the one-textbook policy (Braun and Clarke, 2006). This method enables an in-depth exploration of qualitative data, allowing the researcher to understand the subjective experiences of teachers, administrators, and policymakers and to interpret the nuances of their responses.

Thematic analysis involves several steps, including data familiarization, coding, theme development, and reviewing and refining themes. The analysis will follow Braun and Clarke's (2006) six-phase framework to systematically identify, analyze, and report patterns within the data. First, the researcher will become familiar with the data through repeated readings, noting initial impressions. Subsequently, open coding will be applied to identify significant statements and assign descriptive labels, after which related codes will be grouped into preliminary themes (Patton, 2015). Themes may include challenges of resource adequacy, adaptability of the curriculum, and perceived impacts on teaching efficacy.

Once themes are established, they will be reviewed in relation to the research questions and refined to ensure they accurately represent the data and the research objectives. Through this process, thematic analysis will capture insights into the real-world implications of the one-textbook policy and highlight qualitative differences between the experiences of participants in rural versus urban settings.

Integration of Data Analysis Methods

Integrating these three analysis techniques enables a comprehensive approach to the data collected in Yaounde VI and Mbankomo. Descriptive statistics provide a baseline understanding of quantitative patterns, comparative analysis reveals contextual differences between rural and urban schools, and thematic analysis offers in-depth insights into participants' experiences. Together, these techniques will support a multi-faceted examination of the one-textbook policy, illuminating its successes, limitations, and the equity implications for Cameroon's primary education system.

Results and Discussion

Exploratory Factor Analysis for Availability of Textbooks [AVTB=5]

A total of 5 indicators were used to measure the latent construct of availability of textbooks. The assumption of sampling adequacy and evidence of significant correlation were tested and results were as follow: The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.724 greater than 0.5 [$KMO = 0.724 > 0.5$] indicating appropriate sample size for the analysis. Equally, the Bartlett's test of sphericity revealed chi-square (X^2) = 634.954; degree of freedom (df) = 10 and P-value = $0.00 < 0.01$ indicating at least one (1) significant correlation amongst observed items as shown below.

Table 4. Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) and Bartlett's test for AVTB.

KMO and Bartlett's test		
Kaiser-Meyer-Olkin measure of sampling adequacy		.724
Bartlett's test of sphericity	Approx. chi-square	634.954
	df	10
	Sig.	.000
Note: Data collected from field research in 2023.		

Based on the aforementioned, the analysis of EFA was conducted with the used of Principal Component Analysis (PCA) technique as mode of extraction with defined fixed factor of four [4]. Rotation method was Promax with Kaiser Normalization converged in 4 iterations. Factor loadings and coefficient were suppressed to 0.4 in order to minimise noise in the final factor loadings. The guiding provisions for appropriate factor loadings must not cross-load and must have a coefficient of at least 0.5. Any indicator with factor loading of less than 0.5 and or is cross-loaded must be rejected. The pattern matrix is shown on table 5.

Table 5. Exploratory factor analysis pattern for availability of textbooks [AVTB].

Pattern matrix ^a		
	Component	
	1	2
AVTB1	-	.506
AVTB2	-	.858
AVTB3	-	.752
AVTB4	.797	-
AVTB5	.652	-
Extraction method: principal component analysis.		
Rotation method: Promax with Kaiser normalization; a. Rotation converged in 4 iterations.		
Note: Data collected from field research in 2023.		

The resulting outputs revealed appropriate factor loadings with evidence of no cross loadings and coefficients of less than 0.5. Based on the aforementioned tables, dimension reduction was approved and all of the indicators were retained as relevant. The hypothesis test showed that: Hypotheses: There is a relationship between availability of textbooks and the performance of schools, P-value at 95% (CI): [H0: $\mu=0.0000 < 0.05$, $\beta=0.570$] (moderate positive relationship). Decision/Conclusion: Reject the null hypothesis and conclude that there is significant statistical evidence to suggest that there is a relationship between the availability of textbooks and performance of schools.

Implication and Conclusion

The hypothesis of this study proposed that there are challenges related to the availability of textbooks that significantly impact school performance in primary schools. Specifically, the alternative hypothesis stated that availability challenges hinder academic outcomes, while the null hypothesis posited no significant effect. The findings indicate that the null hypothesis was rejected, and the alternative hypothesis was retained. The rejection of the null hypothesis underscores a statistically significant relationship between textbook availability and school performance in primary schools within the Centre Region of Cameroon, specifically in Yaounde VI and Mbankomo. The implications of these findings highlight the pivotal role of textbook access in educational outcomes, demonstrating that the availability of essential learning materials directly influences students' academic success.

Availability of Textbooks and School Performance

The availability of textbooks in primary schools within Yaounde VI (urban) and Mbankomo (rural) emerged as a crucial determinant of educational quality and student achievement. Consistent with previous research, this study found that limited access to textbooks presents substantial barriers to learning, especially in primary education where textbooks serve as foundational tools for instructional delivery and independent study (Adelman *et al.*, 2008; Glewwe *et al.*, 2009). The positive relationship between textbook availability and school performance reflects the Resource-Based View (RBV) theory, which posits that access to essential resources is fundamental to organizational success, including academic institutions (Barney, 1991). When students have reliable access to textbooks, they are better positioned to engage with curriculum content, consolidate classroom learning, and perform well academically.

Disparities in Textbook Availability between Rural and Urban Schools

The study highlighted notable disparities in textbook availability between the rural schools in Mbankomo and urban schools in Yaounde VI, emphasizing the influence of location on access to educational resources. In rural areas such as Mbankomo, educators reported severe shortages and inconsistent textbook distribution, partly attributed to logistical challenges, poor road networks, and financial constraints that complicate the procurement and delivery of materials. These issues align with findings in the broader literature, which demonstrate that rural schools are often underserved due to structural and logistical challenges, leading to unequal educational opportunities (UNESCO, 2015; World Bank, 2018).

Conversely, schools in Yaounde VI faced fewer logistical barriers but still reported challenges related to the adequacy of textbook quantities and budgetary limitations. Although urban schools have relatively better infrastructure, enabling easier textbook delivery, financial constraints within the one-textbook policy framework limit the number of books available per student. These findings indicate that while urban schools are better equipped to manage textbook shortages than rural schools, both contexts experience significant challenges that can impact learning outcomes. Such disparities highlight the need for targeted policy

interventions that address the unique challenges faced by rural and urban schools to ensure equitable access to learning materials across regions.

Financial and Logistical Challenges Impacting Textbook Availability

Financial and logistical barriers were identified as key factors affecting the availability of textbooks in both rural and urban primary schools. Under the one-textbook policy, schools are required to adhere to standardized textbook selections, theoretically simplifying the supply chain and reducing costs. However, limited government funding, coupled with high distribution costs, has constrained the ability of schools to procure an adequate number of textbooks. This finding is consistent with studies that highlight how financial limitations in education systems often lead to shortages in critical learning resources, ultimately impacting educational quality (Fredriksen, 2009; Ballou and Springer, 2015).

In Mbankomo, the costs associated with transporting textbooks to remote areas further exacerbate availability issues, as budget limitations and logistical complexities make regular and sufficient textbook delivery difficult to sustain. Educators reported that textbooks, when available, are often worn or outdated, impacting the quality of instructional content that students receive. In contrast, while schools in Yaounde VI have fewer logistical constraints, financial limitations still restrict their ability to purchase sufficient textbooks for each student. As a result, students in both contexts often need to share textbooks, limiting their ability to complete assignments, review materials independently, and reinforce classroom learning.

Impact on Teaching and Learning Outcomes

The study's findings demonstrate that textbook shortages adversely impact teaching practices and learning outcomes in primary schools. Teachers in both rural and urban schools reported that inadequate textbook availability forced them to adapt their instructional approaches, often at the expense of optimal learning experiences. For example, in Mbankomo, where textbook shortages are most severe, teachers rely more heavily on verbal explanations and supplementary materials, which may not be as effective as textbook-based learning for some subjects and students. These findings align with educational equity theory, which emphasizes the necessity of equal resource distribution to achieve fair and effective educational outcomes (Adams, 1963).

The lack of textbooks also affects student engagement and comprehension, as students without access to these essential learning tools are less able to review content outside the classroom or engage with the material in depth. Teachers in both Yaounde VI and Mbankomo reported that students with limited textbook access often struggled with literacy, numeracy, and critical thinking skills, all of which are fundamental for primary education. By contrast, when textbooks were more readily available, students demonstrated greater engagement in lessons, performed better on assessments, and were more likely to complete assignments accurately. These disparities underscore the importance of reliable textbook access in supporting effective teaching practices and promoting positive learning outcomes in primary schools.

Policy Implications and Recommendations

The significant impact of textbook availability on school performance revealed in this study underscores the need for comprehensive policy reforms that address the challenges associated with the one-textbook policy. To ensure equitable access to textbooks, policy interventions should consider increasing funding for educational resources, improving distribution logistics, and implementing strategies to address the unique needs of rural schools. One potential solution is to provide additional subsidies or budget allocations for schools in rural areas, where textbook transportation costs are higher, to offset logistical challenges and support regular textbook delivery.

Moreover, enhancing the sustainability of the one-textbook policy may involve adopting alternative educational resources, such as digital textbooks or open educational resources (OER), especially in urban schools where infrastructure can support digital solutions. Integrating digital resources can supplement physical textbooks and provide students with broader access to curriculum content. Additionally, training teachers to effectively utilize shared textbooks or digital alternatives may improve learning outcomes despite the limitations imposed by textbook shortages. By implementing these measures, policymakers can work toward reducing disparities in educational resource availability and improving academic performance across rural and urban primary schools.

In conclusion, the rejection of the null hypothesis supports the finding that textbook availability challenges have a statistically significant impact on school performance in primary education. Financial and logistical

barriers, compounded by systemic limitations within the one-textbook policy framework, restrict the availability of textbooks in both rural and urban contexts. This scarcity affects teaching practices, student engagement, and academic outcomes, with rural schools experiencing particularly acute shortages. The study's findings highlight the importance of equitable resource distribution and suggest that addressing the unique challenges of rural and urban schools through policy reform and innovative resource strategies is essential for improving educational quality and equity.

Recommendations for Policymakers, Educators, and Stakeholders

Based on the findings, several recommendations can be made for policymakers, educators, and stakeholders involved in the implementation of the one-textbook policy in Cameroon:

Develop Context-Specific Policies: Policymakers should recognize the different contexts of urban and rural schools and develop tailored policies that address the specific needs and challenges of each. This could include differentiated funding models that allocate more resources to rural schools to enhance their capacity.

Enhance Textbook Affordability and Accessibility: Strategies should be developed to improve the affordability and accessibility of textbooks, particularly in rural areas. This could involve subsidizing textbook costs for low-income families, exploring partnerships with non-governmental organizations, or implementing community-based textbook lending programs.

Invest in Digital Resources: To complement the traditional textbook approach, policymakers should consider integrating digital resources into the curriculum. This could include the provision of e-books, educational software, and online resources that can enhance the learning experience, particularly in resource-constrained settings.

Encourage Community Involvement: Schools should actively engage parents and community members in the educational process. This could involve creating parent-teacher associations (PTAs) that encourage collaboration, support for teachers, and advocacy for educational resources.

Foster a Culture of Continuous Improvement: Educational stakeholders should adopt a culture of continuous improvement, where feedback from teachers and students is regularly solicited and acted upon. This could involve implementing surveys and focus group discussions that allow educators and students to express their needs and experiences related to textbook use and school performance.

Strengthen Educational Research and Collaboration: There is a need for ongoing research into the effectiveness of the one-textbook policy and its impact on educational outcomes. Policymakers should collaborate with academic institutions and educational researchers to conduct studies that inform policy decisions and practices.

The practical implications of this study highlight the critical need for comprehensive strategies that address the multifaceted challenges of implementing the one-textbook policy in Cameroon's primary education system. By focusing on equitable resource allocation, enhancing teacher training, and fostering community involvement, stakeholders can work towards creating a more effective and inclusive educational environment that improves school performance across both urban and rural contexts.

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