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Effects of Socio-Economic Status (SES) on Academic Performance of Pupils in Cameroon

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Abstract

The academic performance of pupils in Cameroon is influenced by a variety of factors, including their parents' socio-economic status. Socio-economic status (SES), which encompasses income level, educational attainment, and occupational status, is very important in shaping a child's learning environment, access to educational resources, and overall school performance. Despite efforts to provide universal primary education in Cameroon through initiatives such as the Free Primary Education Policy, significant disparities persist in educational outcomes, particularly in low-income and underserved communities. This study seeks to investigate the drivers of academic performance in Cameroon. Specifically, the study is aimed at investigating the effects of SES on academic performance of pupils in Cameroon. To attain this objective, cross sectional secondary data are collected from the PASEC survey conducted across 10 Francophone African countries is employed. The data collected were then analysed through descriptive statistics and robust Ordinary Least Squares (OLS). The findings revealed that SES has a strong positive effect on the performance score of pupils in Cameroon, indicating that improvements in SES correlate with better performance. For the control variables, functional library, multimedia hall, school fence, infirmary first aid, infirmary, portable water and electricity have a significant positive effect on the performance scores of pupils meanwhile recreation ground and other water sources have negative effects on performance score of pupils in Cameroon. The study therefore strongly recommends the need of considering multiple factors that affect the SES of households and addressing systemic issues within the educational system to promote equitable educational opportunities for all pupils. The government should pay more attention on the quality of water and recreational facilities in school campuses. There must be thorough monitoring of these facilities especially when children are playing.

Keywords: academic performance, Cameroon, socio-economic status

1. Introduction

For years in the entire world, the size of schools was mostly conditioned by the arguable concept of economies of scale which considers that the larger the school, the lower the cost per student. An influential book written in 1959 by James Bryant Conant, (Conant, 1959) President of Harvard University, called small high schools America's number one education problem, and many very large high schools were built based on the findings of that book. However, there is a lot of more recent evidence that small schools yield better academic results. The best small schools offer an environment where teachers, students, and parents see themselves as part of a community and deal with issues of learning, diversity, governance, and building in a home-like learning place.

The physical characteristics of the school have a variety of effects on teachers, students, and the learning process.

Poor lighting, noise, high levels of carbon dioxide in classrooms, and inconsistent temperatures make teaching and learning ineffective. Poor ventilation systems lead to poor health among students as well as teachers, which leads to poor performance and higher absentee rates (Frazier, 2002). These factors can adversely affect student behaviour and lead to higher levels of frustration among teachers, and poor learning attitude among students. Beyond the direct effects that poor facilities have on students' ability to learn, the combination of poor facilities, which create an uncomfortable and uninviting workplace for teachers, combined with frustrating behaviour by students including poor concentration and hyperactivity, lethargy or apathy create a stressful set of working conditions for teachers. This is because stress and job dissatisfaction are common pre-cursors to lower teacher enthusiasm, it is possible that the aforementioned characteristics of school facilities have an effect upon the academic performance of students.

Previous studies have investigated the relationship of poor school environment including problems with student-teacher ratio, school location, school population, classroom ventilation, poor lighting in classrooms, and inconsistent temperatures in the classroom with student health problems, student's behaviour, and student achievement. Haven noted the relevance of school environment especially aspects of infrastructure on performance of learners; we can now have a synthesis of how it is linked to socio economic status of families.

It is widely recognised that if learners are to maximise their potential from schooling, they will need the full support of their families. Attempts to enhance familial involvement in education preoccupy governments, administrators, educators and families' organisations across all over the world (Scott, 2003). It is anticipated that families should play a role not only in the promotion of their own children's achievements but also more broadly in school improvement and the democratisation of school governance. The European Commission, for example, holds that the degree of familial participation is a significant indicator of the quality of schooling (Scott, 2003). In the Federal Democratic Republic of Ethiopia, education is valued because it contributes to national development through provision of an appropriate human capital that helps spur productivity and eliminate poverty, disease and ignorance (FDRE, 2001). The education of females, in particular, contributes to various aspects of their lives such as increased longevity, family health and nutrition, reduced fertility rates and reduced related child mortality rates (Psacharopoulos & Patrinos, 2002).

Moreover, Psacharopoulos and Patrinos (2004, 2018) stated that private returns to higher education have increased over time, raising issues of financing and equity. Social returns to schooling remain high, above 10 percent at the secondary and higher education levels. Women continue to experience higher average rates of return to schooling, showing that girls' education remains a priority. Returns are higher in low-income countries. Those employed in the private sector of the economy enjoy higher returns than those in the public sector, lending support to the productive value of education. Family influence is an important factor affecting both female students' and male students' academic achievement. Thus, family education and encouragement are strongly related to improve student achievement in both sexes. Family education and socio-economic status have an impact on students' academic achievements at any level of education. Students with families who were both college-educated tended to achieve at the highest levels. Children whose families are of high educational scales have a statistically far better chance of participating in tertiary education (Oloo, 2003).

In a more local context, Cameroon as a nation has been striving to experience real growth and development. This requires a clearly defined development strategy that allows intensive utilisation of resources which the country is endowed with. These resources include various school physical facilities that are indispensable in the educational process. They are the sitting, the building and physical equipment, recreating places for the achievement of educational objectives (Oluchuckwu, 2000). School environment which includes instructional spaces planning, administration spaces planning, circulation spaces planning, spaces for conveniences planning, accessories planning, the teachers as well as the students themselves are essential in teaching-learning process. The extent to which students' learning could be enhanced depends on their location within the school compound, the structure of their classroom, availability of instructional facilities and accessories. It is perceived that a well-planned school will gear up expected outcomes of education that will facilitate good social, political and economic emancipation, effective teaching and learning process and academic performance of the students. It is also believed that the Parents' Teachers' Association (PTA) cannot be dissociated from these endeavours.

After the UN meeting in New York, September, 2000 with the declaration by member states to be committed to work together in building a safer, more prosperous and equitable world, a road map was set with eight time-bound and measurable goals to be reach by 2015, known as millennium development goals. Goal number two had to do with achieving universal primary education in all public schools all over national education. It also included gender equality at all levels of education. Sustainable Development Goal (SDG) number four laid more emphasis on education and aims to ensure inclusive and equitable quality education and promote lifelong opportunities for all educational levels by 2030. However, MDG number 2 in Cameroon has mostly been in terms of non-payment of school fees meanwhile other elements of educational cost have remained afloat.

According to endogenous growth theories, education or human capital has been highlighted as one of the fundamental sources of long-term economic growth (Lucas, 1988), Barro (1991), Romer et al. (1992). These economists made use of Ordinary Least Squares (OLS) regressions meanwhile newer literature that make use of natural experiments and instrumental variable techniques include Duplo (2001) who estimates that both the private and social rates of return to education are high in developing countries. Therefore, any growth endeavours must target education and place it at the center otherwise it may just be futile. Putting education at the center of growth endeavours entails targeting all the indicators that guarantee quality education and thus good performance at school.

A brief outline of these indicators includes pedagogical resources, perception of teachers' working conditions and social advantages, land tenure system, study environment especially in terms of infrastructure, parental and community assistance to name but these. Therefore, implementing any innovations in educational practice must be through ensuring a consistent "fit" between the vision behind innovation, teachers' capabilities and motivations, and characteristics of the spaces that are available.

Following the UN declaration on universal primary education in all public schools, school enrolment in Cameroon has increased tremendously but despite this tremendous progress in expanding enrolment, a significant number of children of school going age are still not enrolled in schools (UNDP, 2003). Many children learn much less than the learning objectives set in the official curriculum (Glewwe, 1999). Visitors from developed countries are often shocked at the conditions in many schools in developing countries including Cameroon. Many schools lack the most basic equipment and school supplies including text books, blackboards, desks, benches, and sometimes even classrooms in which case classes meet under trees and are cancelled when it rains.

Despite all the endeavours to boost education in order to enhance the schooling and performance rates in Cameroon, we observe that the schooling rates only moved up from 45.99% in 2016 to 65.5% in 2019 and to 77% in 2022. The success rates in official exams have not been the best. Success rates for Certificat d'Etudes Primaire (CEP) examination have fluctuated between 77.92% in the year 2014, 74.4% in 2015, 63.52% in 2020 and 79.37% in 2021. First School Leaving Certificate (FSLC) scored percentages ranging from 70.12% in the year 2014, 73.4% in 2015, 79.48 in 2020 and 90.43% in 2021 World Bank (2023). Completion rate from primary schools dropped from 74.24% in 2012 to 65.5% in 2019 World Bank (2023). Looking at the success rates above, there has been significant fluctuations in performance with CEP following a negative trend while FSLC is rising very slowly. Following the trend of performance and falling rate of completion above, this researcher is prompted to investigate the role of SES of parents within the present pattern of academic performance in Cameroon primary schools.

A lot of studies have been carried out to determine the causes of low academic performance and especially the drop in completion rate from primary schools. Some studies link bad academic performance to insufficient pedagogical resources including teacher competencies (Cesario et *al.,* 2015). Kumar and Agarwal (2001) posit that learning is a function of the input which consists of the personal characteristics of learners and the environments before school entry, school environment and peer environment, and the output can be psychological, behavioural, affective and cognitive. Another determinant of academic performance is textbooks which according to Ann-Katrinvan (2018) should be considered as an important covariate in educational research.

According to Hanna and Abdullahi (2016), there exists many factors that contribute to a student's academic performance; some of these factors include individual characteristics (motivation, learning styles, gender and learning strategies), family and Neighbourhood experiences. However, according to the works of Jordan, Mendro and Weersinge (1997), teachers matter most among school related factors. Henrix (2019) on his part highlighted the role of comfort (seating), light, noise and colour on learning ability. Education now widely acknowledges the importance of the family (Leichter, 1974), as they have during earlier historical periods (Clarke-swtewart, 1978).

Most of the studies mentioned above focus on teachers' attitudes as one of the predictors of a successful teaching policy since teachers are directly involved in the application of the curriculum and use of infrastructures and pedagogic resources in schools with respect to their pedagogic activities. Such activities include interacting with pupils and manipulating the learning environment. Under such circumstances and despite near exhaustive studies on these determinants of academic performance, there are still some lapses. Therefore, we are pushed to find out if the SES of families is not one of the factors that affect pupils' academic performance significantly. This is because increasing evidence supports the link between SES and educational outcomes.

Money spent on education in Cameroon has continued to increase over the years with the intention to match the increasing school enrolment. However, it is becoming more evident that community involvement through the Parents' Teachers' Association (PTA) and other bodies is unavoidable. Therefore, the Socio-Economic Status (SES) of households will determine how effective such community involvement can be. Also, low SES and exposure to adversity are linked to decreased educational success (Sheridan & McLaughlin, 2016). Early experiences and environmental influences can have a lasting impact on learning (linguistic, cognitive and socio-emotional skills), behaviour and health (Shonkoff & Garner, 2012). Children from low-SES families often begin

kindergarten with significantly less linguistic knowledge (Purcell-Gates, McIntyre, & Freppon, 1995). As such, children from low-income families enter high school with average literacy skills five years behind those of high-income students (Reardon, Valentino, & Shores, 2013). Children from less-advantaged homes score at least ten percent lower than the national average on national achievement scores in mathematics and reading (Hochschild, 2003). Children in impoverished settings are much more likely to be absent from school throughout their educational experiences (Zhang, 2003), further increasing the learning gap between them and their wealthier peers.

Although many studies have been made to establish the relationship between SES and academic performance, this study is peculiar in the sense that its results reveal a significant negative relationship between school playground and academic performance of pupils in Cameroon. This researcher has attempted explanations to this unexpected negative relationship. Cameroon is also a peculiar country especially in terms of socio-cultural background. It is a bilingual country with two sub-systems of education one being French and the other being English. It also has four geographical and socio-cultural zones which make it very peculiar in the entire CONFEMEN zone. Therefore, similar studies in other countries of the CONFEMEN zone cannot easily be fit for application in Cameroon. To this end, this paper sought to examine the relationship between socio-economic status and the academic performance of pupils in Cameroon. Specifically, investigating the effect of parents' socio-economic status on pupils' academic performance in Cameroon.

2. Literature Review

2.1 Theoretical Literature

2.1.1 Ecological system Theory, Pianta (2002)

Pianta and Cox (2002) proposed an ecological and dynamic model of transition that illustrates the shift in perspective from school readiness as a result of interactions among the key settings in which the child actively participates (view 2). This framework builds on the Contextual Systems Model proposed by Pianta and Walsh (1996) and the Bio ecological Model advanced by Bronfenbrenner and Morris (1998). Remaining true to the bidirectional, interactionist perspective represented in the two models, the current model suggests that the transition to school is best understood in terms of the settings that contribute to child development (e.g., family, classroom, school, and neighbourhood) and the connections among these settings (e.g., family-school relationships) at a specific time and over a period of time (Pianta & Cox, 2002).

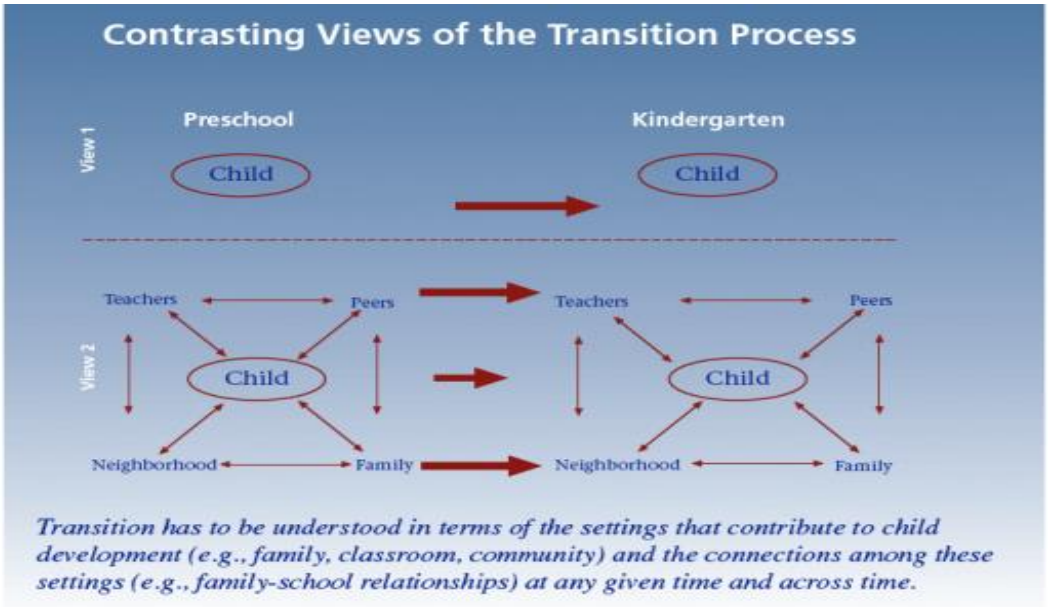

Figure 1. An ecological and dynamic model of the transition to school (Pianta & Cox, 2002)

Readiness then may be viewed as a bi-directional process whereby the child and the school adapt and adjust to one another contributing to a smooth transition and positive school adjustment (Rimm-Kaufmann &Pianta, 2002). Pianta (2007) suggests that it is the interactions with adults that create the learning opportunities essential to overall development and positive academic and social outcomes. The transition to school is an important developmental connection between home and school, undertaken by children and their families (Pelletier & Brent, 2002). Transition may be viewed as an extended process that expands the notion of school readiness to include the early years before school entry through the elementary school years (Ramey & Ramey, 1992). Families provide the

social, cultural and emotional supports which children need to function successfully in school (Power & Hertzman, 1999); schools provide the opportunities for children to engage in positive interactions with other significant adults and children. These experiences enhance what has been learned at home while supporting continued development and related learning (Bronfen brenner, 1985). Children are active agents in the process as they cross a cultural boundary and make the transition from home to school and begin to experience school as a place to learn and themselves as students (Lam & Pollard, 2006).

Recognising the role that children play in their transition and listening to children's views about the issues that affect them, provides important information for developing environments and curricula that support and stimulate them to become confident, resilient, independent learners with heightened social and emotional competence and positive academic outcomes (Clark, McQuail, & Moss, 2003; Lansdown, 2005; Pelletier & Corter, 2006).

A successful transition process is characterised by child adjustment and how well families and schools interact, cooperate, and communicate (Pianta & Cox, 2002). Ramey and Ramey (1999) suggest that it is the adaptation by families, children and teachers that affects the quality of transition to school which is an important developmental step for every child. "It is a cultural universal fact that is remembered with fondness or despair well into adulthood and frequently passed on as a legacy to the next generation" (p. 249). The implication is that the memories of these early school experiences may become integrated into the beliefs and practices that are transmitted from one generation to the next. Within a social ecological context, the quality of interactions comprising early school experiences are influenced by adult beliefs and practices and other contextual factors, e.g., individual level factors for children, family factors, school-level factors, and demographic factors that have an impact on children's readiness for school.

2.1.2 Vygotsky's Socio-Constructivist Theory (1978)

Vygotsky's socio-constructivist theory (1978) explains that individuals are said to be co-constructors of their own knowledge through interaction with the environment. He came up with the concept of ZPD, which is the distance between a learner's current level of learning and the level he or she can attain with the help of people and aids in the environment.

This theory implies that learners need appropriate and well-structured conducive environments (Infrastructures) through which interactions can be possible. If teachers are provided with adequate teaching - learning environment, these will enhance learning amongst children with different abilities. These theories are important to our study because inclusive education is not only out to ensure access and attendance of all but also to ensure that everyone is given an equal chance to participate in school and to succeed as well.

In Murray's theory of motivation (1938), two categories of human needs are outlined — Viscerogenic and Psychogenic. Viscerogenic has to do with needs to satisfy hunger, thirst, and sleep and Psychogenic means needs for security, prestige, affection and love, need for dominance as well as the need to avoid inferiority or debasement. These needs are indicators that determine one's behaviour. No matter the state of well-being of an individual, these needs are basically useful for him or her to achieve self-actualisation. The affection and love needs are much needed to both the disadvantaged children and their teachers because they are used to obtain positive personality.

2.2 Empirical Literature

Sana et al. (2023) examine how socio-economic background affects academic performance of students in the UAE. Their main objective was to explain how SES affects academic achievement and to guide educational policy and actions to close achievement inequalities. Socio-economic status was measured using parental income, educational level and occupation meanwhile academic performance was measured using standardised tests and GPAs. 300 varied secondary school pupils were sampled and data was analysed with the use of correlation and regression analysis. The regression studies explored how SES predicted academic outcomes while adjusting for other factors like family engagements and school resources. Correlation examined the relationship between SES and academic achievement. The results show that socio-economic position appears to affect academic performance. Students with higher socio-economic status fare better academically. However, parental participation and school resources may buffer the SES-academic achievement association. The study suggests focused treatments for low-income students and that policy makers and educators may reduce the achievement gap and promote fair education by understanding how socio-economic status affects academic performance.

Reardon and Portilla (2017) conducted a study to examine the evolution of the achievement gap between high and low-income students in the United States over the past several decades, considering both reading and mathematics test scores. The research used data from the National Assessment of Educational Progress (NAEP) and conducted statistical analyses to assess changes in the achievement gap between high and low-income students in the domains of reading and mathematics. The study found that while the achievement gap in reading and mathematics has narrowed among younger students, it has widened significantly among older students. The reasons for these variations require further investigation, and the study emphasized the importance of understanding the nuanced

trends in different subjects and age groups to address these disparities effectively. A limitation was the potential influence of demographic shifts in the U.S. population over time. Future research should explore the underlying causes of these trends in more detail. Policymakers should consider age-specific interventions to reduce disparities in reading and mathematics achievement.

Reardon and Portilla (2016) conducted a study to investigate the changes in income-based achievement gaps in the United States, focusing on how these gaps have evolved over time and across different educational levels. The research used data from the Stanford Education Data Archive and conducted statistical analyses to track changes in income-based achievement gaps over several decades and across various levels of education, including elementary, middle, and high school. The study revealed that income-based achievement gaps have grown over time, and the growth has been most pronounced among high school students. The findings underscored the persistent challenge of addressing income-related disparities in academic performance and the need for targeted interventions, particularly at the high school level. A limitation was the focus on income as a sole indicator of socioeconomic status. Future research should consider a broader range of socioeconomic indicators, such as parental education. Policymakers should prioritize efforts to reduce income-based achievement gaps in high school, including enhancing educational resources and support for economically disadvantaged students.

Reardon (2011) conducted a study that sought to examine trends in the relationship between parental income and pupils' academic achievement over the past several decades, with a focus on changes in educational inequality. This study utilised data from the National Assessment of Educational Progress (NAEP) and conducted a series of statistical analyses to explore how the achievement gap between students from low-income and high-income families has evolved over time. The study revealed a widening achievement gap between pupils from high-income and low-income families, emphasising that family income plays a crucial role in academic performance. The findings underscore the need for policy initiatives to address this growing inequality by targeting resources and support toward economically disadvantaged students. A limitation of this research was the reliance on standardised test scores as a measure of academic performance. Future studies could incorporate a more comprehensive set of academic outcomes. Moreover, further research is needed to understand the underlying mechanisms driving the income-based achievement gap and the effectiveness of specific interventions.

Kim and Saxberg (2018) investigate how various aspects of parental involvement, including the quality and quantity of involvement, mediate the relationship between parents' socio-economic status and their children's academic performance. This study analysed data from the Education Longitudinal Study (ELS) and employed path analysis to explore the mediating role of parental involvement in the association between socio-economic status and academic achievement. The research found that both the quality and quantity of parental involvement mediated the relationship between socio-economic status and academic achievement. Students from lower socioeconomic backgrounds benefited significantly from high-quality parental involvement, which partially mitigated the negative impact of lower socio-economic status on academic performance. Limitations included the reliance on self-reported measures of parental involvement. Future research should consider more objective measures and conduct in-depth qualitative analyses of parental involvement. Policymakers should encourage and support meaningful parental involvement in schools, particularly for families with lower socio-economic status.

Hanushek and Woessmann (2016) conducted a study to investigate the relationship between the quality of a country's education system and the effect of socio-economic status on academic achievement. The research used data from the Program for International Student Assessment (PISA) and conducted cross-country analyses to examine how variations in education system quality influenced the impact of socio-economic status on students' academic performance. The study found that the quality of a country's education system played a crucial role in mitigating the influence of socioeconomic status on academic achievement. In countries with higher-quality education systems, the impact of socio-economic disparities on student performance was less pronounced, highlighting the importance of educational policy in addressing inequalities. Limitations included the use of cross-sectional data, which limited the ability to establish causality. Future research should explore the causal mechanisms that underlie these relationships. Policymakers should focus on improving the quality of education systems to help reduce the impact of socio-economic disparities on academic performance.

Reardon (2013) conducted a study to expand on previous work by examining trends in the income-achievement gap among American students and investigate whether these disparities were more pronounced in some states than others. The research utilised data from the Stanford Education Data Archive (SEDA) and conducted statistical analyses to examine state-level variations in the relationship between parental income and academic achievement. The study found that the income-achievement gap varied significantly across U.S. states, with some states experiencing larger disparities than others. This highlighted the role of state-level policies and educational systems in mitigating or exacerbating socio-economic inequalities in academic performance. A limitation was the use of cross-sectional data, which limited the ability to establish causality. Future research should explore the effectiveness of state-specific interventions and policies in reducing income-based achievement gaps.

Duncan et al. (2007) conducted a study to investigate the long-term impact of parents' socio-economic status during childhood on pupils' educational attainment and economic well-being in adulthood. The study used data from the Panel Study of Income Dynamics (PSID) and conducted longitudinal analyses to explore how childhood socio-economic status influenced educational and economic outcomes in adulthood. The research found a strong relationship between parents' socio-economic status during childhood and various adult outcomes, including educational attainment, income, and employment. This emphasized the enduring influence of childhood socio-economic status on individuals' life chances. A limitation was the reliance on self-reported data. Future research should incorporate objective measures. Policymakers should focus on interventions that provide economic opportunities and support for individuals who experienced socio-economic disadvantages during childhood.

Dearden et al. (2010) investigated the impact of parents' socio-economic status on the educational outcomes of children in the United Kingdom, particularly focusing on early childhood cognitive development and educational achievement. This study used data from the Avon Longitudinal Study of Parents and Children (ALSPAC) and employed longitudinal analyses to examine the associations between parental socio-economic status, early cognitive development, and educational attainment. The research demonstrated that parental socio-economic status significantly influenced both early cognitive development and educational achievement in the UK. Children from lower socio-economic backgrounds exhibited poorer cognitive development and were more likely to face educational challenges. The study emphasised the importance of early interventions to address these disparities and promote equitable educational opportunities. Limitations included potential selection bias in longitudinal studies. Future research should explore the effectiveness of targeted interventions in early childhood to help children from disadvantaged backgrounds. Policymakers should consider policies that address the socio-economic determinants of educational outcomes.

Magnuson and Duncan (2002) investigated the long-term effects of socio-economic status during early childhood on academic performance, with a focus on the persistence of socio-economic disparities into adulthood. The study used data from the Panel Study of Income Dynamics (PSID) and conducted longitudinal analyses to track the influence of early childhood socio-economic status on educational and economic outcomes in adulthood. The research demonstrated that socio-economic disparities in academic performance persisted into adulthood, with children from lower socioeconomic backgrounds facing greater challenges in achieving educational and economic success. This highlights the need for comprehensive interventions targeting early childhood and educational opportunities to break the cycle of disadvantage. A limitation was the potential for measurement errors in retrospective data. Future research should consider more accurate data collection methods. Policymakers should prioritize investments in early childhood education and support systems to reduce the long-term impact of socio-economic disparities on academic achievement and economic well-being.

Fan and Williams (2010) conducted a study to examine the influence of parents' socio-economic status on pupils' academic achievement across different racial and ethnic groups in the United States. This study analysed data from the National Education Longitudinal Study (NELS) and used hierarchical linear modelling to assess the impact of socio-economic status on academic performance within various racial and ethnic subgroups. The research found that the relationship between parental socio-economic status and academic achievement varied among different racial and ethnic groups. While the general trend indicated a positive association, the strength of this association differed. These findings highlighted the importance of considering the unique dynamics of socio-economic disparities within diverse populations. A limitation was the use of cross-sectional data, which limited the ability to establish causality. Future research should incorporate longitudinal data to explore changes over time. Policymakers should develop tailored strategies to address the specific needs of different racial and ethnic groups within the context of socio-economic disparities in education.

Li and Julian (2012) conducted a study to examine the role of parental education, as a component of socio-economic status, on pupils' academic achievement in the United States. It also investigated whether the impact of parental education varied across different racial and ethnic groups. This research used data from the National Educational Longitudinal Study (NELS) and conducted regression analyses to assess the effects of parental education on academic achievement, considering both overall effects and variations among racial and ethnic subgroups. The study found a positive relationship between parental education and academic achievement, with the impact varying across racial and ethnic groups. In particular, Asian and White students tended to benefit more from higher levels of parental education. This highlighted the need for targeted policies addressing the unique dynamics within various racial and ethnic communities. A limitation was the focus on a single country. Future research could explore these relationships in a more international context. Policymakers should develop strategies that acknowledge the diversity within racial and ethnic groups and consider the specific challenges and advantages faced by different communities in relation to parental education and academic achievement.

Hout (2012) investigated the long-term trends in the relationship between parents' socio-economic status and pupils' educational attainment in the United States, aiming to understand how this relationship has evolved over

time. The research utilised data from the General Social Survey (GSS) and conducted analyses to track changes in the relationship between parental socio-economic status and various educational outcomes over several decades. The study found that the relationship between parental socio-economic status and educational attainment has weakened over time, indicating greater social mobility. This suggests that socio-economic status might be becoming less deterministic of educational outcomes in recent years. It underscored the potential impact of social and economic changes on educational opportunities and outcomes. A limitation was the reliance on self-reported data in the GSS. Future research should explore these trends using more objective measures. Policymakers should continue to support efforts that promote equal educational opportunities, particularly for economically disadvantaged students, to maintain and enhance this trend of weakening socio-economic determinism.

Jackson and Kline (2019) investigated the relationship between parents' socio-economic status and children's educational achievement in the context of educational investments and expenditures, aiming to understand how spending on education might moderate this relationship. The research used data from the National Longitudinal Survey of Youth (NLSY) and conducted regression analyses to assess how parental socio-economic status and educational spending jointly influenced children's academic performance. The study found that educational spending significantly moderated the relationship between parental socio-economic status and children's educational achievement. Higher educational spending was associated with better academic outcomes, and this effect was particularly pronounced for students from lower socio-economic backgrounds. The research underscored the role of educational investments in reducing the impact of socio-economic disparities on academic performance. A limitation was the focus on a specific dataset, which might not capture all dimensions of educational spending. Future research should explore a broader range of educational investments. Policymakers should consider policies that target increased educational spending, particularly for students from disadvantaged socio-economic backgrounds, to promote equitable academic outcomes.

Reardon and Owens (2014) conducted a study to explored the relationship between parents' socio-economic status and educational achievement, particularly focusing on income-based achievement gaps in the United States. The research used data from the National Assessment of Educational Progress (NAEP) and conducted analyses to assess income-based achievement gaps across different racial and ethnic groups, grade levels, and subjects. The study found substantial income-based achievement gaps, with students from low-income families consistently performing worse academically than their higher-income counterparts. These disparities varied across grade levels and subjects, highlighting the complexity of income-based achievement gaps and the need for targeted interventions. Limitations included the cross-sectional nature of the data, which limited the ability to establish causal relationships. Future research should investigate the causal factors driving these gaps. Policymakers should consider strategies that address the unique challenges associated with income-based disparities at different grade levels and subject areas.

According to Mulryan-Kyne, C. (2014), the school playground experience is an inevitable part of school life for primary school children. Although for most pupils the experience is a positive and enjoyable one that contributes to their physical and social well-being, to some children however, the playground can be a frightening and dangerous place in which aggressive behaviour and bullying can be experienced and/or witnessed. The recognition of this fact has, in some cases, led to the reduction or elimination of playground time. Many intervention programmes aimed at promoting positive in-school behaviour and preventing negative behaviours, including bullying, have been developed and used with positive results in schools. Mulryan-Kyne argued that facing the issues and problems presented by negative playground behaviour and dealing with them in a positive way is better than avoiding them with policies that restrict the freedom of children to interact and engage with peers in the playground and this is essential for the well-being of children and school staff. In the quest to find out if SES is the cause for falling rates of academic performance and completion rates in Cameroon primary schools, we also attempt some answers to the observed negative relationship between school playgrounds and academic performance of pupils in Cameroon.

3. Methodology

3.1 Scope of the Study, Nature and Source of Data

The scope of this study is limited to school infrastructure and the academic performance of pupils in Cameroonian primary schools. The focus of the study is on Cameroon, a Central African nation on the Gulf of Guinea. The study made use of secondary cross-sectional data collected by reviewing PASEC surveys (*Programme d'Analyse des Systèmes Educatifs de la CONFEMEN*). CONFEMEN is the conference of minsters of education in French speaking African countries. The ex-post facto and causal research designs are employed in this work.

The study made use of secondary cross-sectional data collected by reviewing PASEC surveys (*Programme d'Analyse des Systèmes Educatifs de la CONFEMEN*). CONFEMEN is the Conference of Ministers of Education of Francophone countries in Africa which has been making enormous attempts to promote the delivery of educational services and professional training since 1960 (PASEC, 1998). To facilitate this, CONFEMEN pilots a

survey called (*Programme d'Analyse des Systèmes Educatifs de la CONFEMEN* (PASEC) to collect data that are used to assess the efficiency of the educational systems of its member countries. The data used in this study come from the PASEC survey conducted across 10 Francophone African countries in 2015 and published in 2017 (PASEC, 2015).

As part of the PASEC survey design, information was collected from pupils in grade 6 who are at the end of the primary school curriculum. The information collected from these pupils included reading and numeracy test scores and the pupils' characteristics. Information was also collected from the children's parents, teachers and head teachers of the various schools relating to knowledge, welfare, pedagogic resources, school infrastructure and socio-economic status of families. The 2015 PASEC design surveyed 31,213 pupils in grade 6 nested in 671 schools in Cameroon. PASEC survey methodology was a stratified sampling where schools were first randomly selected, and grade 6 kids were subsequently randomly interviewed from each school. Data for the PASEC 2015 were collected at the end of the 2015 academic year from pupils at early school stage (class 2) and terminal primary school (class 6). The data covers 180 primary schools in the 10 regions of Cameroon. Data analysis from the programme led to the publication of many international and national reports on the educational systems of Cameroon and other Francophone countries that were involved.

3.2 Model Estimation

Astin's Theory of Involvement, evidently describes that students' performance pertaining to education are determined by student specific inputs (including factors like basic demographics of students, their motivation, interest, learning styles, previous academic attributes, etc.), and environmental attributes (like institutional environment, environment at home, peer relations, etc.) as well as the interface between student specific inputs and environmental elements (Astin, 1997). Based on this theory, we specify a functional link between academic performance and SES attributes as follows:

$$\text{AP} = \beta_0 + \beta_1 SES_i + \beta_{2i} X_i + \mathcal{E}_i \quad (1)$$

Where AP is academic performance with scores in mathematics and language as proxies, SES is socio-economic index, X represents a vector of control variables which include functional library, multimedia hall, recreation ground, school fence, infirmary first aid, infirmary, portable water, other water sources and electricity. i illustrates the cross-sectional structure of the study. It represents the pupils. β_0 is the intercept while β_1 is the coefficient of SES index. $\mathcal{E}_i$ is the error term, capturing unobserved factors affecting academic performance of pupils in Cameroon.

Justification for Using the Ordinary Least Squares (OLS) Model

OLS provides a clear framework for understanding how changes in independent variables, such as index of SES, influence the dependent variable such as academic performance in this case. This model assumes a linear relationship, allowing for straightforward predictions and insights into the data (Runyi & Nwakuya, 2022).

Moreover, OLS is robust in terms of statistical properties, particularly when the assumptions of the model are satisfied, such as linearity, independence of errors, and homoskedasticity. When these assumptions hold, OLS estimators are unbiased, consistent, and efficient, providing reliable estimates of the coefficients (Runyi & Nwakuya, 2022). Additionally, the incorporation of robust standard errors in the OLS framework helps to address issues related to heteroskedasticity, ensuring that the inferences drawn from the model remain valid even when the variance of the errors is not constant (Runyi & Nwakuya, 2022). Furthermore, OLS regression allows for the inclusion of control variables, which can help isolate the effect of the primary independent variable of interest (SES), on academic performance. This capability enhances the model's explanatory power and provides a more nuanced understanding of the factors influencing educational outcomes. Overall, the OLS regression model with its advantages of interpretability, statistical robustness, and flexibility in modeling relationships, makes it a valuable tool for analysing the impact of various factors on academic performance.

However, OLS has some major weaknesses which include, endogeneity issues, omitted variable bias, sensitivity to outliers, leverage points and influential observations, which can distort the estimates and reduce their accuracy. It is also restricted by assumptions such as linearity, independence, homoscedasticity, normality and no multicollinearity. Despite these weaknesses, the advantages of OLS still make it a valuable tool for analysing the impact of various factors on academic performance.

3.3 Variables in the Study

The index of SES was calculated using Multiple Correspondence Analysis (MCA) due to the fact that the variables are binary in nature. The variables used to construct SES index include: the number of textbooks at home, television, computer, radio set, DVD reader, WIFI channel at home, Mobile phone, AC ventilator, a cooker and heater, a reading table, a vehicle or truck, a motor bike, a bicycle, electricity at home, a water well at home and portable water at home. The control variables include functional library, multimedia hall, recreation ground, school

fence, infirmary first aid, infirmary, portable water, other water sources and electricity. All these variables grouped in building SES index are dummy variables. The control variables on the other hand are also dummy variables and were selected based mainly on literature which supported its fitness within the context of this study. Apart from literature, the variables selected are expected to be highly correlated we variables of SES index. They include electricity at home, language guide, mother and father being teachers, mathematics guide, canteen, catch-up lessons, computer at home, WIFI channel, mobile phones, reading table, and flushing toilets.

Table 1. Variables used to Construct SES Index

Variables	**Category**	**Frequency**
Number of text books at home	0	464
	No text books	1010
	1 subject	1472
	2 subjects	521
	Complete library	350
Television at home	Yes	2376
	No	1264
Computer at home	Yes	984
	No	2576
A radio set at home	Yes	2701
	No	897
A DVD reader	Yes	2057
	No	1522
A WIFI channel	Yes	792
	No	2708
Mobile telephone	Yes	2730
	No	832
AC ventilator	Yes	1335
	No	2232
A cooker and heater	Yes	1708
	No	1848
A reading table	Yes	3318
	No	357
A vehicle or truck	Yes	984
	No	2577
A motor bike	Yes	1477
	No	2067
A bicycle	Yes	1522
	No	2050
Electricity at home	Yes	2239
	No	1308
Water well at home	Yes	1414
	No	2281
Potable water at home	Yes	1423
	No	2274

Source: Constructed by author using 2014 PASEC grade 6 data.

Table 2. Control Variables

Variables	**Category**	**Frequency**
Functional library	Yes	533
	No	3,284
Multimedia hall	Yes	464
	No	3,353
Recreation ground (Playground)	Yes	3,351
	No	466
School fence	Yes	976
	No	2,841
Infirmary first aid	Yes	2,676
	No	1,141
Infirmary	Yes	248
	No	3,569
Portable water	Yes	1,550
	No	2,267
Other water sources	Yes	1,189
	No	2,628
Electricity	Yes	1,309
	No	2,508

Source: Constructed by author using 2014 PASEC grade 6 data.

4. Presentation and Discussion of Findings

4.1 Demographic Characteristics of Respondents

The distribution of pupils in terms of age is shown on the bar chart below.

Table 3. Age Distribution of Pupils

Age of Pupil	Freq.	Percent	Cum.
3	8	0.22	0.22
4	94	2.58	2.80
5	594	16.30	19.09
6	908	24.91	44.01
7	870	23.87	67.87
8	579	15.88	83.76
9	383	10.51	94.27
10	135	3.70	97.97
11	50	1.37	99.34
12	16	0.44	99.78
13	6	0.16	99.95
14	2	0.05	100.00
Total	3,645	100.00	

Source: Constructed by author using 2014 PASEC grade 6 data.

From the demographic statistics presented on table iii above, we can note briefly that the age of the pupils ranges from 3 to 14 years. The highest number of pupils are those of 6 years of age, followed by pupils with age 7 years, pupils with age 5 years, 8 years and 9 years, followed by pupils with age 10 years, 4 years, 11 years, 12 years, 13 years, 3 years and those of 14 years of age being the minority. This shows that pupils of all age groups at primary education were included in the sample which indicates that the findings from this study can provide some useful policy in relation to the relationship between SES and the academic performance of pupils in Cameroon.

The second descriptive element of the pupils is in terms of sex as displayed on the bar chart below.

Table 4. Sex Distribution of Pupils

Gender of pupil	Freq.	Percent	Cum.
Male	2,006	52.55	52.55
Female	1,811	47.45	100.00
Total	3,817	100.00	

Source: Constructed by author using 2014 PASEC grade 6 data.

We can note briefly from the findings presented on table iv that both males and females were included in the sample of pupils considered in this study. Female population constitutes 52.55 % of the total number of pupils sampled meanwhile the male population constitutes 47.45%. This shows that the sampling was not gender bias and therefore the findings from this study can provide some useful policy guidance in terms of the relationship between socio-economic status and the academic performance of pupils in Cameroon.

Table 5. Summary Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Log of performance score	3817	6.211093	0.189743	5.406109	6.688428
Performance score	3817	507.1504	94.46756	222.7632	803.0587
SES	3715	53.02132	9.716591	17.54449	88.34007
Functional Library	3817	0.139639	0.346657	0	1
Multimedia hall	3817	0.121561	0.326821	0	1
Recreation ground	3817	0.877915	0.327427	0	1
School Fence	3817	0.255698	0.43631	0	1
Infirmary First aid	3817	0.701074	0.457847	0	1
Infirmary	3817	0.064973	0.24651	0	1
Portable water	3817	0.406078	0.491164	0	1
Other water sources	3817	0.311501	0.463168	0	1
Electricity	3817	0.34294	0.474754	0	1

Source: Author’s Computation using 2014 PASEC grade 6 data.

The summary descriptive statistics table presented on table v shows that the average academic performance score of the pupils is 6.211 percentage score with a deviation from this score of 0.189 percentage score. On the average, parents’ socio-economic status is 53.0213 score with a deviation of 9.716 scores from the average. On percentage points, the average of schools with functional library, multimedia hall, recreation ground, school fence, infirmary first aid, infirmary, portable water, other water sources, and electricity is 34.665 percent, 32.682 percent, 32.742 percent, 43.631 percent, 45.784 percent, 24.651 percent, 49.116 percent, 46.316 percent, 47.475 percent respectively.

Table 6. Pairwise Correlation Matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
SES (1)	**1.0000**									
Functional library (2)	**0.2054**	**1.0000**								
Multimedia Hall (3)	**0.3191**	**0.3151**	**1.0000**							
Playground (4)	**-0.0644**	**0.0348**	**0.0408**	**1.0000**						
School Fence (5)	**0.3907**	**0.1814**	**0.4141**	**-0.0181**	**1.0000**					
Infirmary 1st Aid (6)	**0.3093**	**0.0847**	**0.1168**	**0.0222**	**0.2306**	**1.0000**				
Infirmary (7)	**0.2625**	**0.1729**	**0.3768**	**0.0983**	**0.3547**	**0.0816**	**1.0000**			
Portable water (8)	**0.3707**	**0.1871**	**0.2230**	**-0.0241**	**0.4056**	**0.3570**	**0.2322**	**1.0000**		
Other water (9)	**0.0021**	**-0.0098**	**0.0527**	**0.1402**	**0.1309**	**-0.0328**	**0.0912**	**-0.0090**	**1.0000**	
Electricity (10)	**0.4664**	**0.1835**	**0.5149**	**0.0334**	**0.5697**	**0.3162**	**0.3223**	**0.4669**	**0.0551**	**1.0000**

Source: Constructed by author using 2014 PASEC grade 6 data.

The findings presented on table vi are the pairwise correlation matrix for multicollinearity assessment. The findings show that there is a weak relationship among the explanatory variables given that most of the correlation coefficients are less than 0.5. We can observe from the correlation matrix that all the correlation coefficients of the leading diagonals stand at 1.000. This shows that each explanatory variable included in this study's specific objective is perfectly collinear to itself. Therefore, each explanatory variable included in this study's specific objective is having a 1 by 1 relationship with itself and not with any other explanatory variable. This suggests the absence of the econometric problem of multicollinearity among the explanatory variables in this study's specific objective. Again, we note that all the correlation coefficients are less than 0.75 indicating the absence of the problem of multicollinearity among the explanatory variables in this study's specific objective.

Table 7. Further Evidence on Multicollinearity Assessment Through the Variance Inflation Factor Test

Variable	VIF	1/VIF
Electricity	2.07	0.483924
School fence	1.70	0.588903
Multimedia hall	1.61	0.622920
Portable water	1.46	0.683431
SES	1.44	0.696845
Infirmary 1st aid	1.27	0.784846
Infirmary	1.23	0.815298
Functional library	1.15	0.867104
Other water sources	1.05	0.949476
Recreation ground	1.05	0.951597
Mean VIF	1.40	

Source: Constructed by author using 2014 PASEC grade 6 data.

After haven ascertained the fact that there is the absence of the econometric problem of multicollinearity among the explanatory variables for the effects of parents' socio-economic status on academic performance of pupils in Cameroon, it is important to justify this claim through a proper econometric test such as the VIF test. The test results reported on table 4.8 indicates that the average VIF statistics stand at 1.40. This value is below the bench mark VIF statistics of 2.5 that shows the presence of multicollinearity. Given that this value is less than this bench mark of 2.5, we conclude that there is the absence of the problem of multicollinearity among the explanatory variables for the effects of parents' socio-economic status on academic performance of pupils in Cameroon.

Table 8. Heteroskedasticity Test

Breuch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance

Variables: fitted values if Lperformance score		
Chi 2(1)	=	28.51
Prob > Chi 2	=	0.0000

Source: Constructed by author using 2014 PASEC grade 6 data.

No constancy of the variance of the error term constitutes a fundamental problem in econometric analysis. This econometric problem leads to biased regression results if not addressed in running linear regression models. The Breusch-Pagan/Cook-Weisberg test for heteroscedasticity has as null hypothesis that the variance of the error term is constant. The results of the Breusch-Pagan/Cook-Weisberg test for heteroscedasticity statistics presented on table viii stands at 28.51 and it is significant at 1 percent level of significance. We therefore reject the null hypothesis of constant variance of the error term in our model and conclude that there is the presence of the problem of heteroscedasticity in the regression model for this specific study objective on the effects of parents' socio-economic status on the academic performance of pupils in Cameroon.

Table 9. Regression Results on the Effects of Parents' Socio-Economic Status (SES) on Academic Performance of Pupils in Cameroon

	(1)	(2) Lperformance_score
VARIABLES	Lperformance_score	(Robust Standard Errors)
SES	0.00507***	0.00507***
	(0.000302)	(0.000304)
Functional Library	0.0350***	0.0350***
	(0.00759)	(0.00725)
Multimedia hall	0.0440***	0.0440***
	(0.00945)	(0.00770)
Recreation ground	-0.0269***	-0.0269***
	(0.00768)	(0.00853)
School Fence	0.0578***	0.0578***
	(0.00734)	(0.00721)
Infirmary First aid	0.0456***	0.0456***
	(0.00594)	(0.00601)
Infirmary	0.00163	0.00163
	(0.0112)	(0.00962)
Portable water	0.0100*	0.0100*
	(0.00604)	(0.00588)
Other water sources	-0.000305	-0.000305
	(0.00546)	(0.00554)
Electricity	0.0859***	0.0859***
	(0.00743)	(0.00690)
Constant	5.875***	5.875***
	(0.0169)	(0.0176)
Observations	3,715	3,715
R-squared	0.383	0.383

Standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1.

Source: Constructed by author using 2014 PASEC grade 6 data.

Haven noted earlier from the findings on heteroscedasticity test that the variance of the error term is not constant; the robust standard error approach is required for valid regression analysis. This therefore implies that the regression results reported in column 1 of table 4.10 are not valid for policy inference. Thus, the results of interest on table 4.10 are those coefficients reported in column 2 of table ix. The results suggest that 38.3 percent of variations in the academic performance of pupils in Cameroon are due to variations in SES and other control variables included in the model of this study. This approach aligns with the practices advocated by Reardon (2011), who emphasised the need for robust methodologies when studying socio-economic disparities in education.

The findings align with existing research that underscores the significant role family background plays in shaping educational outcomes. Specifically, the study reveals a positive and significant impact of SES on pupils' academic performance, with an increase in parental SES corresponding to a 0.51-point improvement in academic scores. This outcome echoes the findings of Reardon (2011), who identified family income as a key determinant of academic achievement, noting a widening achievement gap between students from low-income and high-income families. Duncan et al. (2007) also found that parental SES strongly influences educational and economic outcomes, and the current study reinforces this relationship by demonstrating its impact in the context of Cameroon. The results suggest that improving parental SES can lead to better academic performance, highlighting the importance of policies aimed at raising the socio-economic standing of families to improve educational outcomes.

Pupils in schools with better facilities, such as functional libraries, multimedia halls, school fences, and access to utilities like electricity and portable water, consistently performed better than their peers in schools lacking these amenities. This finding is consistent with the work of Dearden et al. (2010), which emphasised the importance of both socio-economic status and educational environment in shaping academic outcomes. The provision of resources like libraries and multimedia halls enables students to engage with learning materials and technologies that enhance their educational experiences. Reardon and Portilla (2016) also supported this view, noting that school resources are critical in bridging socio-economic disparities in academic achievement. The most pronounced effect was observed for schools with electricity, where students scored 8.6 points higher, aligning with the argument made by Hanushek and Woessmann (2016) that high-quality education systems can mitigate the impact of socio-economic disparities. These findings underscore the importance of investing in school infrastructure as a means of promoting equitable academic outcomes.

Paradoxically, the study presents some counterintuitive findings particularly regarding the negative coefficients for schools with recreation (play) grounds and other water sources. The coefficients of schools with recreation ground and other water sources are negative indicating that within the ambits of improvements in SES, pupils in schools with playgrounds and other water sources will perform lesser than those in schools without recreational facilities and other water sources. Statistically, pupils in schools with recreation ground are expected to score 2.7 points less than those in schools without recreation ground meanwhile pupils in schools without other water sources are expected to score 0.031 points lesser than those who have access to other water sources. The coefficient of recreation ground is significant at 1 percent level of statistical significance likewise that of other water sources.

However, while it might seem surprising that pupils in schools with these amenities performed worse than those without them, this could reflect deeper systemic issues. The presence of recreational facilities and other water sources does not necessarily equate to better educational outcomes, especially if these resources are underutilised or poorly maintained. In fact, these findings might suggest that the availability of such amenities does not directly translate into academic success unless accompanied by other factors, such as effective use of these resources and overall school quality. This may align with the work of Mulryan-Kyne (2024) who suggests that playground can be a frightening and dangerous place in which aggressive behaviour and bullying can be experienced or witnessed by children. She then proposed that facing the issues and problems presented by negative playground behaviour and dealing with them in a positive way is better than avoiding them with policies that restrict the freedom of children to interact and engage with peers in the playground as this is essential for the well-being of children and school staff.

In a similar line, although water is essential for proper functioning of a school, the results of this study showed a negative relationship between non-potable water sources and academic performance of pupils. This suggests that the negative effects of contaminated water and other consequences of water scarcity may interfere with the objectives of this study. Komarulzaman et al. (2017) conducted a study on the direct and indirect effects of access to good quality water and a nearby water source on primary school absenteeism and school enrolment. The study reveals that many enrolled pupils appear to be absent from school due to illnesses, child labour, and household responsibilities that come with water scarcity.

These counterintuitive cases presenting a paradox with respect to the relationship between playground and academic performance, and non-potable water sources and academic performance are worthy of further investigation and may suggest that other variables like teaching quality or parental involvement, might have a more direct influence on academic performance. Kim and Saxberg (2018) explored how parental involvement can mediate the relationship between SES and academic achievement, and the current findings might imply that the quality of school facilities, rather than their mere presence, plays a more significant role in shaping student outcomes.

5. Conclusion and Policy Implications

The paper sought to investigate the effects of parents' socio-economic status on academic performance of pupils in Cameroon. To attain this objective, cross sectional secondary data are collected from the PASEC survey conducted across 10 Francophone African countries is employed. The data collected were then analysed through descriptive statistics and robust Ordinary Least Squares. The findings revealed that Socio-economic status has a strong positive effect on academic performance. By establishing the link between study environments, socio-economic status of families and academic performance of pupils in Cameroon, this researcher intends to reveal the best ways of perceiving the value of educational performance on the entire community. He therefore hopes that educational policies can be designed such that educational services become more accessible to a greater majority of households in Cameroon given that education is vital for development. This can improve on the welfare of households and thus lead to growth in GDP.

The study recommended the need of considering multiple factors beyond SES and addressing systemic issues within the educational system to promote equitable educational opportunities for all pupils. Also, some of the nuance presented by the results suggest that it is not just sufficient to have resources like playgrounds in schools but it is important to manage them effectively in order to achieve desired objectives.

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