Beyond Access: Exploring the Socio-Economic Impact of Girl-Child Education in Peri-Urban Communities in the Tamale Metropolitan Area

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ABSTRACT

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| While evidence has long recognized girl-child education as a catalyst for socio-economic development, existing studies have often generalized these impacts, without enough attention placed on localized dynamics. The present research investigates the socio-economic impact of girl-child schooling in two peri-urban settlements, Kanvilli-Kpawumo and Koblimahgu, in the Tamale Metropolitan Area of Northern Ghana. Both settlements provide a unique blend of traditional values and rapid urbanization, providing a rich context for understanding how education translates into household and community development. Drawing on the Human capital theory and empowerment theory, the study employs a mixed-methods design, combining in-depth interviews, household surveys, and stakeholder focus group discussions to gather data from one hundred and twenty-six (126) respondents, including girls, parents, teachers, and community leaders. Research findings indicate that girl-child education makes considerable impacts on household income diversification, delay of early marriage, health-seeking behavior, and political consciousness among adolescent girls. However, entrenched socio-cultural norms and inconsistent policy implementation continue to hinder the full achievement of these gains.By deconstructing localized outcomes and barriers, the study makes relevant contributions to education planners and development practitioners. It argued for a context-sensitive approach to education planning—more than just enrollment, but empowerment and socio-economic transformation in the long term |

*Keywords: Girl-Child Education, Community Development, Gender Equality, Sustainable Development, and Cultural Barriers.*

1. INTRODUCTION

Globally, education has been recognized as key to achieving sustainable development, especially in areas with social and economic inequalities (Tyagi et al., 2021; Kopnina, 2020). Among the transformative aspects of education recognized by many scholars is the empowerment of girls through access to quality education, which has been linked to improved health outcomes, poverty reduction, and promotion of gender equality (Chant, 2016; Sen and Mukherjee, 2017). Despite the well-acknowledged benefits of girl child education, many rural and peri-urban communities in Ghana, including Koblimahgu and Kanvilli-Kpawumo communities in the Tamale metropolitan Area, face challenges in ensuring equitable access to quality education for girls. These challenges range from deep-rooted socio-cultural norms to economic constraints and systemic barriers within the education sector. The Koblimahgu and Kanvilli-Kpawmo communities, with relatively high levels of poverty and less development of infrastructure, provide a unique lens through which the impact of girl-child education on socio-economic community development can be studied.

While national and regional policies, such as the UN charter on the rights of the child, the FCUBE programme, and Free Senior High/Technical School, have sought to address these challenges, there are massive gaps in understanding the localized impacts of these initiatives. More so, research on how girl-child education influences community development remains scant. Much of the existing literature on girl child education in Ghana has focused on access, retention, and academic performance, with little attention paid to the broader socio-economic impact on community development (Takyi et al., 2021; Nyakoa, 2023). While there is overwhelming evidence showing the linkages of education with poverty alleviation and improved livelihood (see Ma et al., 2024; Khan, 2015), little attention has been paid to how educating girls translates into tangible benefits for the broader community. The existing policy frameworks have adopted one-size-fits-all policy frameworks aimed at girl-child education, which tend to gloss over specific socio-cultural dynamics, such as early marriages, teenage pregnancies, and gendered labor roles that influence education outcomes in particular communities.

This study, therefore, tries to fill the existing gaps with a localized and holistic understanding of the impact of girl-child education on community development in Koblimahgu and Kpawumo. The research will contribute to policy by offering context-specific recommendations that accord with the realities of these communities, which is very instrumental for policymakers, development practitioners, and educational stakeholders who seek or design and implement effective interventions.

**1.1 Research Objective**

To examine the socio-economic impact of Girl-Child Education on community development in Kanvilli-Kpawumo and Koblimahgu Communities in the Tamale Metropolitan Area.

**1.2 Theoretical Framework**

The study was anchored on two theories: human capital theory and empowerment theory. These two theories provided an appropriate framework for understanding the multi-dimensional impact of girl child education on community development.

**1.2.1 Human Capital Theory**

Human capital theory, as proposed by Schultz (1961) and Becker (1964), emphasized the role of education in improving the productive capacities of individuals and societies. Human capital theory postulates that investment in education is a basic form of physical capital; it results in an increased set of skills, knowledge, and productivity that will ultimately benefit both the individual and society. This paper views girls' education as a form of vital human capital investment. This theoretical framework assumes that "education is instrumental in improving the capacity of girls to become actively engaged agents in the labor market, enhancing household incomes and thereby improving health and nutritional status outcomes benefiting girls and the community at large by yielding societal growth and advancement through development due to its ability to give them knowledge, skills, and attitude.". Furthermore, this theory also considers that education can break the vicious cycle of poverty, especially for underprivileged community groups. This study exposed how girl child education transforms the community by illustrating overcoming early marriage, societal norms, and economic hurdles. Adding to this, social progress will ensure socio-economic returns on education investment, especially for girls.

**1.2.2 Empowerment Theory**

The empowerment is rooted in the work of Rappaport (1987), which focused on enhancing individuals’ and communities’ control over their lives and using their capabilities to influence decisions that affect their lives. The empowerment theory emphasizes the importance of creating opportunities for the marginalized within society, such as girls, to acquire knowledge, improve their skills, and build their confidence to overcome social-cultural and institutional barriers.

The theory believes that education, particularly girl-child education, is a powerful tool to use for women's empowerment. The theory believes that education enables girls to gain a sense of agency, self-esteem, and the ability to challenge gender norms that perpetuate inequality in the Kanvilli-Kpawmo and Koblimagu. Empowerment theory highlights how educated girls serve as change makers. Through education, the girls contribute significantly to breaking generational cycles of poverty, discrimination, promoting gender equality, advocating for better health, education, and systems that enhance the empowerment of young girls, ensuring a sustainable transformation.

These two theories provide a proper framework for understanding the transformative power of education on girls. While the human capital theory emphasizes economic and developmental benefits, empowerment theory showcases the social and psychological dimensions, emphasizing the role of agency and self-determination in driving change towards achieving sustainable development goals.

2. material and methods

**2.1 Study Area**

The study was carried out in Kanvilli-Kpawmo and Koblimagu, two communities within the Tamale metropolitan area in the Northern Region of Ghana. These communities are part of the many peri-urban communities in the metropolis where socio-economic and cultural dynamics have a strong influence on the educational opportunities for girls. The communities are located within the rapidly expanding landscape of Tamale. The population in these communities is predominantly Dagombas, with Islam being the dominant religion. The communities have a youthful population, with children and adolescents forming a significant proportion of the demographic structure of the communities. The primary economic activities in Kanvilli-KPawmo and Koblimagu include petty trading, farming, artisan work, and weaving. Most families in these communities are poor, and this poses a big barrier to the education of girls, as parents find difficulty in affording school fees, uniforms, and other educational materials for their children. The poor educational infrastructure in the community is another major factor contributing to the non-attendance of school by the girls. Some of the challenges schools in the two communities face include overpopulation, a lack of adequate teaching and learning materials, and a lack of gender-sensitive facilities such as separate toilets for girls. Such situations sometimes contribute to the high dropout rates for girls.

**2.2 Research Design**

The study adopted a case study design to determine the impact of girl-child education on community development in Kanvilli-Kpawumo and Koblimahgu. The use of the case study design is particularly suitable for this research since it will enable a much closer look at the peculiar realities and dynamics in these two communities under study (Yin, 2017; Algozzine and Hancock, 2017). A case study allows the researchers to get an in-depth understanding of the lived experiences, challenges, and contributions of girl-child education to community development in the selected communities. A case study is also useful for this research as it allows the researchers to use various sources of data, which facilitates the triangulation of the data.

**2.3 Research Approach**

This research utilized a convergent parallel mixed approach in gathering the necessary data. This approach allowed the researchers to collect both qualitative and quantitative data, which were analyzed separately (Demir and Pismek, 2018). The quantitative component captures the general trends, challenges, and impact of girl-child education, while the qualitative component provides deeper insights into the lived experiences of the respondents. The use of the parallel mixed method ensures that the data collected in this study, through complementarity and triangulation, makes the findings of this study valid and reliable—a fact that has also been observed by Tomasi et al. (2018) and Almeida (2018). For instance, the quantitative data underlines the patterns statistically, while the qualitative data collected through in-depth interviews and focus group discussions with the key informants sheds light on detailed narratives as to the "why" and "how" behind the statistical patterns. Study Population: The population for this study involves the inhabitants of Kanvilli-Kpawmo and Koblimahgu communities in the Tamale metropolis. A total of 126 samples were used in this study: 120 from the two communities, and 2 representatives each from the Ghana Education Service, NGOs, and community leaders.

**2.4 Research Instruments**

In this research, three instruments were used to gather relevant data. These included questionnaires, an interview guide, and focus group discussions. Quantitative data was gathered using a closed-ended questionnaire containing pre-written responses on the challenges of girl-child education, perceived benefits of girl-child education, and its contribution to community development. Semi semi-structured interview guide was used to gather qualitative data through in-depth interviews from key informants, including representatives from NGOs, Officials of the Ghana Education Service, and community leaders. This guide ensured consistency across various interviews while allowing for flexibility to explore emerging themes. Focus group discussion was also used to conduct two focus group discussions in the two selected communities, consisting of participants from diverse backgrounds, including women and men in the communities, community leaders, and officials of the Ghana Education Service.

**2.5 Data Collection Procedure**

The data collection process spans from April to December 2024, ensuring adequate time for community engagement and data gathering. Questionnaires were administered in person to the residents to ensure a high response rate and clarify ambiguities in questions. Field assistants were trained to support the process. Key informant interviews were conducted in a conversational format in person, largely depending on the participants’ preference. Each interview lasted between 30 minutes to 1 hour. Two focus group discussions were held in each of the two communities, consisting of members of the communities and some representatives from the Ghana Education Service and NGOs. Each focus group discussion lasted for 1 hour. The consent of every participant was sought before being included in the research, and all participants were allowed to opt out or take a break during the data collection whenever they felt like doing so.

**2.6 Data Analysis**

Quantitative data from the questionnaire were analysed using descriptive statistics. Excel was used to compute frequencies and percentages to provide insight into the trends and relationships between girl-child education and community development indicators. The qualitative data gathered from the interviews and focus group discussions were analysed using thematic analysis. The researchers identified key themes, patterns, and insights that explain or complement the quantitative findings.

**2.7 Validity and reliability**

In this research, data were gathered using questionnaires, focus group discussions, and interview guides. The use of these instruments enabled the researchers to cross-check information from various perspectives, enabling us to validate the precision of the responses. By observing the level of consistency in the responses, the researchers established the robust foundation for asserting the trustworthiness and uniformity of the data collection instruments.

3. results and discussion

**3.1 Demographic Characteristics**

The data below presents data on the demographic characteristics of respondents. Variables such as gender, age, marital status, educational level, and occupation of respondents were considered in this research. Table 1 presents the data

**Table 1: Demographic information of Respondents**

|  |  |  |  |
| --- | --- | --- | --- |
| **Questions**  | **Variables**  | **Frequency (N)** | **Percentage (%)** |
| Gender | Male | 46 | 38.3 |
| Female  | 74 | 61.7 |
| **Total**  | **120** | **100** |
| Age (Years) | Below 20 | 10 | 8.3 |
| 21-30 | 40 | 33.3 |
| 31-40 | 45 | 37.5 |
| Above 40  | 25 | 20.8 |
| **Total**  | **120** | **100** |
| Marital Status  | Single  | 50 | 41.7 |
| Married  | 60 | 50.0 |
| Divorced  | 10 | 8.3 |
| **Total**  | **120** | **100** |
| Educational Level | Basic  | 15 | 12.5 |
| Senior High  | 50 | 41.7 |
| Tertiary  | 40 | 33.3 |
| None  | 15 | 12.5 |
| **Total**  | **120** | **100** |

**Source: Field Survey, 2024**

**Figure 1: Respondents’ Occupation**

**Source: Field Survey, 2024**

The data shows that out of the 120 respondents in the study, 46, representing 38.3%, were males, and 74, representing 61.7%, were females. 10 (8.3%) fall below the age of 20 years, 40 (33.3%) fall between 21-30 years, 45 (37.5%) are within the age range of 31-40 years, and 25 (20.8%) are above 40 years of age. With regards to the marital status, 50 (41.7%) indicated they were single, 60 (50.0%) said they were married, and 10 (8.3%) indicated they were divorced. The data also shows that 15 (12.5%) of the respondents had their education level as basic, 50 (41.7%) indicated senior high as the highest education level, 40 (33.3%) indicated that their highest education level is tertiary, and 15 (12.5%) indicated that they have attained no formal education. Relative to respondents’ occupation, 25% were farmers, 33.3% were traders, 16.7% were teachers, 8.3% were health workers, and 16.7% indicated others as their occupation.

The demographic profile indicates that the study sample is predominantly female, with most of the respondents falling within the age range of 21to40 years. The majority of the respondents are either married or single, have completed at least high school education, and work as traders or farmers. This data provides a wide-based demographic snapshot of the respondents, reflecting diversity in gender, age, marital status, education, and occupation. This diversity enhances the reliability of the findings by highlighting perspectives from various societal segments. It also contextualises the findings of the study, helping in understanding how demographic factors influence views on girl child education and community development in the Tamale metropolis.

**3.2 Economic Contributions of Girl-Child Education**

One of the key drivers of community development is girl-child education. The Tamale Metropolitan Area has observed that girl-child education significantly shapes livelihoods, enhances income generation, and fosters entrepreneurship. We established the study to uncover the economic benefits of girl-child education and its wider implications for community development. The findings provide insight into how educating girls creates employment opportunities, supports entrepreneurial activities, and contributes to income generation in communities in the Tamale Metropolitan Area. The data in this regard is presented in Table 2 below:

**Table 2: Economic Contributions of Girl-Child Education**

|  |  |  |  |
| --- | --- | --- | --- |
| **Questions**  | **Response Options**  | **Frequency (N)** | **Percentage (%)** |
| Are you aware of any girls in your community who have benefited from education? | Yes | 110 | 91.7 |
| No | 10 | 8.3 |
| **Total**  | **120** | **`100** |
| How has girl child education contributed to income generation in your community? | High Contribution | 50 | 41.7 |
| Moderate contribution  | 40 | 33.3 |
| Minimal contribution  | 20 | 16.7 |
| No contribution  | 10 | 8.3 |
| **Total**  | **120** | **100** |
| What type of employment opportunities are created due to girl child education? | Formal employment  | 64 | 53.3 |
| Informal employment  | 33 | 27.5 |
| Entrepreneurship  | 23 | 19.2 |
| Total  | 120 | 100 |
| How has girl child education influenced entrepreneurial activities in the community?  | Positively | 90 | 75.0 |
|  | Negatively  | 10 | 8.3 |
| No Impact | 20 | 16.7 |
| **Total**  | **120** | **100** |

**Source: Field Survey, 2024**

The data from Table 2 shows that out of the 120 respondents, 91.7% reported being aware of girls in the community who have benefited from education, while only 8.3% reported being unaware of girls who have benefited from education. This overwhelmingly high level of awareness reflects the visibility of educational impacts within the community, suggesting that educational initiatives targeting girls have had tangible results, making their benefits evident to most residents.

When asked about the contribution of girl-child education to income generation, 41% responded high contribution to income generation, 33.3% reported a moderate contribution, and 16.7% indicated a minimal contribution, while 8.3% observed no contributions. The high and moderate contributions, which together account for 75%, indicate that education for girls is a significant driver of economic activity, largely through equipping them with skills for employment or entrepreneurship.

The data also reveal that 53.3% of the respondents attributed formal employment opportunities to girl-child education, while 27.5% pointed to informal employment, and 19.2% indicated entrepreneurship. The data shows that the majority of the respondents identified formal employment as the outcome of girl-child education, suggesting that educated girls are entering professional fields, contributing to the economic structure of communities in the metropolitan area. However, the significant response of informal employment and entrepreneurship suggests that education also enables alternative livelihood paths, which are critical in developing economies. This diversity of outcomes shows the multifaceted role of girl-child education in economic empowerment, emphasizing the need for policy frameworks that support both formal and informal sectors, as well as entrepreneurial ventures.

In terms of the impact of girl-child education on entrepreneurial activities, 75.0% of the respondents reported a positive influence of girl-child education, while 8.3% indicated a negative influence, and 16.7% observed no impact. The data shows an overwhelming positive influence of girl-child education on entrepreneurial activities, suggesting that education equips girls with the knowledge, skills, and confidence to engage in entrepreneurial activities, which drives local innovation, creates jobs, and stimulates economic growth.

In an interview with key informants, they provided narratives that highlighted the economic impact of girl-child education in the selected communities. One of the respondents narrated

*that “…we have seen in these communities educated girls growing up to become economically active and are contributing to their household income. Many of these educated young girls have established small businesses, and others you will find have secured employment in sectors like teaching, administration, and healthcare. These women are seen as role models, inspiring other younger girls to pursue education and break through the cycle of poverty. The effects go beyond household support and extend to economic growth of the communities*” (KI 2).

An official of the GES narrated that

*“Girlchild education in Kanvilli Kpawumo and Koblimahgu has a direct impact on economic growth through skill development. Educated girls are better equipped to engage in modern farming techniques, vocational skills, and even digital platforms for trade.”* (KI 1).

A community leader narrated in an interview

*“In our community, we have seen how girls who completed their education and returned home with knowledge that is benefiting us all. For instance, some of the girls teach other women how to save and manage small loan associations. Others are seen assisting in community health outreach programmes, helping to improve productivity. Education has empowered these young girls economically, and brought pride and hope to our community”* (KI 3).

Both the quantitative and qualitative data underscore the impact of girl-child education on the economic development of the selected communities. These data support the works of Wangamti (2020) and Wakesah et al. (2019), which found that awareness of girl-child education’s benefits in sub-Saharan African communities is often high due to advocacy campaigns by both the government and NGOs. The research also supports the findings of Adom and Asare-Yeboa (2016) and Ge et al. (2022), who found a direct correlation between educational attainment among girls and an increased income-generating potential, particularly through formal employment and entrepreneurial activities. The diversity in employment as found in the research strongly mirrors the findings of Kabeer (2021), who noted that education opens up opportunities for women in least developed countries, helping them to transition into formal employment while also taking advantage of informal and entrepreneurial pathways. The findings also align with the works of Baah-Mintah et al. (2018), Adom et al. (2018), and Demedeme and Opoku (2022), which highlighted the role of education in promoting entrepreneurial skills among women in Ghana. These findings collectively underscore the need for policies that support formal and informal sectors, entrepreneurial ventures, and community-based skill development programmes. This is in line with the global calls for a holistic approach to girl-child education, emphasizing on integration of vocational and life skills training into formal education systems to enhance economic empowerment of women (Murphy-Graham, 2024; Otieno et al., 2024; Stromquist, 2022).

**3.3 Employment Opportunities created by Girl-Child Education**

The figure below presents data on the employment opportunities created by Girl-Child Education;

**Figure 2: Employment Opportunities created by Girl-Child Education**

**Source: Field Survey, 2024**

Figure 2 shows that out of 120 respondents, 58% of the respondents indicated that girl-child education creates formal employment for girls, 30% indicated that girl-child education creates informal employment, and 12% indicated that girl-child education creates entrepreneurial opportunities for girls. The findings from the data above illustrate how girl-child education drives economic empowerment of girls and supports various employment pathways that collectively contribute to community development. Formal employment strengthens local institutions, informal employment sustains grassroots economies, and entrepreneurship drives innovations and economic diversification. These factors together reduce poverty, promote gender equality, and enhance community development.

A representative of an NGO in an interview narrated that

*“Through our programmes, we have seen that girl-child education has contributed to local economic growth. Many of these young girls/women in Kanvile-Kpawumo have started their business in tailoring, hairdressing, and weaving, which employ other community members, including men”* (K.I. 10)

*“Education provides girls with the confidence and skills to take initiatives of their own. Some girls who have benefited from our sponsored schools are now running NGPs focused on community health and literacy*” (K.I. 6)

GES official narrated that

*“Over the past years, we have observed an increase in female graduates returning to teach in some of our local schools. They inspire young girls and serve as role models in the community.*

A community leader narrated that

*“in our community, many educated girls who could not progress to tertiary are now engaged in tailoring, soap-making, and other vocational trades. They have become employers, training other young girls*” (KI 5).

Both the quantitative and qualitative data above highlight the distribution of employment opportunities that girl-child education creates with formal, informal employment, and entrepreneurial opportunities as the major pathways. The finding is consistent with the work of Kabeer (2012), who revealed that education enables girls to acquire skills and qualifications that meet the demand of the formal labor market. The findings also support the work of Hilson et al. (2018), who found that informal work often serves as a stepping stone for women toward economic independence.

**Table 3 Social Impact of Girl-Child Education**

|  |  |  |  |
| --- | --- | --- | --- |
| **Question**  | **Response Options**  | **Frequency (n)** | **Percentage (%)** |
| Has girl-child education led to a reduction in early marriages in your community?  | Yes | 100 | 83.3 |
| No  | 20 | 16.7 |
| **Total** | **120** | **100** |
| To what extent has girl child education improved access to healthcare services?  | Very High  | 40 | 33.3 |
| High  | 30 | 25.0 |
| Moderate  | 30 | 25.0 |
| Low  | 10 | 8.3 |
| None  | 10 | 8.3 |
| **Total**  | **120** | **100** |
| Has girl child education improved gender equality in your community?  | Yes | 90 | 75.0 |
| No | 20 | 16.7 |
| Not Sure  | 10 | 8.3 |
| **Total**  | **120** | **100** |

**Source: Field Survey, 2024**

Table 3 shows that out of the 120, a significant majority of the respondents, 100 (83.3%), believe that girl-child education contributes to a reduction in early marriages in their communities. Suggesting a strong correlation between girl-child education and reduced incidences of early marriage. However, 20 (16.7%) of respondents disagree, suggesting that girl-child education does not contribute to a reduction in early marriages.

The data also reveal that 58.3% of the respondents rate the improvement in access to healthcare service due to girl-child education as either “very high” (33.3%) or High (25.0%). Twenty-five (25%) perceive that impact on access to health care services as moderate, while a smaller proportion of the respondents (16.6%) believe that improvement in access to healthcare services is either “low” (8.3%) or non-existent (8.3%). The data suggest that girl-child education is seen as positively impacting healthcare access for many in the community, even though some communities may not be experiencing the same level of benefits.

Regarding girl-child education improving gender equality, a substantial majority (75%) of respondents agree that girl-child education has improved gender equality in their community, showing a strong positive impact. However, 16.7% disagreed, and 8.3% indicated their uncertainty about the impact of girl-child education in improving gender equality.

**Table 4: Decision-Making and Leadership**

|  |  |  |  |
| --- | --- | --- | --- |
| **Question**  | **Response Option**  | **Frequency (n)** | **Percentage (%)** |
| Are educated girls or women involved in household decision-making in your community?  | Yes | 100 | 83.3 |
| No | 20 | 16.7 |
| **Total**  | **120** | **100** |
| What leadership roles do educated women/girls hold in your community?  | Local Assembly  | 52 | 43.3 |
| School Board  | 38 | 31.7 |
| Religious Leadership  | 28 | 23.3 |
| None  | 2 | 1.7 |
| **Total**  | **120** | **100** |
| Do you believe girl-child education has enhanced the leadership capacity of women?  | Strongly Agree  | 50 | 41.7 |
| Agree | 40 | 33.3 |
| Neutral  | 20  | 16.6 |
| Disagree  | 5 | 4.2 |
| Strongly  | 5 | 4.2  |
| **Total**  | **120** | **100** |

**Source: Field Survey, 2024**

From the table above, the data shows that out of 120 respondents, 100 (83.3%) responded “yes” to the fact that educated girls or women are highly involved in household decision-making in the community, 20 (16.7%) responded “No” to the fact that educated girls or women are not involved in household decision making in community. The data suggest a positive correlation between education and women’s involvement in domestic decisions.

The data also reveal that educated women in the community hold various leadership roles, with the most common being positions in local assemblies (43.3%). This demonstrates their active participation at the grassroots level. A substantial number of respondents believe that educated girls/women serve on school boards (31,7%), highlighting their contribution to educational development. Religious leadership roles are less common (23.3%), perhaps due to traditional constraints. A small fraction (1.7%) reported that educated women hold no leadership roles in the community.

Regarding the impact of girl-child education on leadership capacity, the majority of the respondents 75% (41.7% strongly agree and 33.3% agree), believe that girl-child education has significantly enhanced women’s leadership, highlighting the transformative impact of education on women’s leadership potential in the community. However, 16.6% remain neutral, and a minority (8.4%) either disagree or strongly disagree, suggesting the need for more targeted efforts to demonstrate the benefits of education in leadership development. The data shows a strong belief among respondents in the positive impact of education on women’s decision-making and leadership roles in the community.

Interviews response from key informants provided detailed narratives on the social impact of girl child education on community development. the following are some excerpts of the narratives:

“*Through our interventions in some of these communities, we have realized significant social changes. Early marriages and teenage pregnancies have reduced drastically, because educated girls are more aware of their rights and available opportunities. Equally so, families have also realized the value of keeping their girl-child in school as educated girls have become role models and entering professions like nursing and teaching”* (NGO Respondent KI 1).

We have witnessed a gradual but positive improvement. Educated girls are becoming more vocal in their communities and are actively participating in your forums and even taking leadership roles in their school and community. This has brought about a shift as parents are beginning to treat their daughters equally to their male children when it comes to education” (GES official, KI 6).

 A community member narrated that

*“Our community is seeing a new generation of young women who are empowered. Girls who were once confined to domestic roles are now supporting their families with the knowledge they gain in school, such as basic health practices. Educated girls can now communicate better in society and solve conflicts peacefully”.*

The quantitative and qualitative data provide compelling evidence of the powerful role of girl-child education in fostering significant social and development outcomes in the selected communities. The data strongly aligns with the findings of Samuels and Ghimire (2021), who argue that education is one of the most effective vehicles for preventing child marriages. It also supports the findings of Gordon (2023), which emphasized that educated girls are more likely to be aware of their rights, have greater aspirations, and resist societal pressures. The results also support the findings of Kabeer (2021) and Vijayan (2024) argument that education promotes social equity by helping to challenge traditional gender norms. Likewise, the findings are in support of the works of Ngulube et al. (2024), who noted that educated girls are more likely to participate in decision-making, gain economic independence, and advocate for equal treatment.

**3.4 Discussion of Findings**

**3.4.1 Navigating Empowerment and Resistance: Unpacking the Localised Outcome of Girl-Child Education**

The study discovers that families with educated girls demonstrated more income diversification, notably through formal employment or business enterprises. Education enabled girls to acquire skills that translated into enhanced employment prospects and, in some cases, income contributions to parents and siblings. This is also in line with the Human capital theory and empowerment theory that emphasise that education empowers women by increasing their real-life opportunities. Nonetheless, some girls—even after school completion—are jobless because of labor market constraints. This is a demonstration of a structural mismatch between education and economic opportunities in Northern Ghana.

Respondents noted a trend towards delayed marriage and greater decision-making authority among educated daughters. Girls with higher education were more likely to negotiate family planning, reproductive choices, and household roles. These trends challenge conventional norms but are not universal. In some households, girls continue to face pressure for early marriage despite education, suggesting an incomplete transformation.

Despite national-level policy, retention at the local level remains inconsistent. Inadequate school infrastructure, lack of menstrual facilities, and teacher absenteeism were prevalent issues. Support programs such as school feeding and scholarships are also politicized or irregular, reducing impact on retention among girls in Kanvili Kpawmo and Koblimagu. These limitations reinforce the need to move beyond enrollment-driven interventions toward a rights-based and capability-enhancing education system.

4. Conclusion

The study explores the impact of girl-child education on community development in the Kanvilli Kpawumo and Koblimahgu communities within the Tamale metropolis. The study established that girl-child education has a profound and transformative power for community development. The findings indicated that the education of girls contributes much to better health outcomes, economic growth, and the general well-being of the family and communities at large. The study shows that formally educated girls are more likely to take part in the community decision-making process, which in turn makes a push toward gender equality and social change. While great strides have been made, cultural norms, early marriages, and a lack of educational resources are some of the barriers that threaten to undermine the full realization of the most desirable outcomes of girl-child education. These can only be overcome by using a multi-pronged intervention approach, including community engagement, policy interventions, and sustained investment in education infrastructure.

Lastly, the empowerment of girls through education is a moral and, at the same time, seen as a strategic means to achieving sustainable development. Since these two communities continue to give priority to the girl-child education, the ripple effects will provide a brighter future characterized by reduced poverty, improved livelihoods, and enhanced social cohesion. In so doing, these communities will be showing the way to ensure that there is inclusive and sustainable development for every girl with access to quality education.

Consent

The consent of all participants was sought before their inclusion in the study.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

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2.

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References

Adom, K., & Asare-Yeboa, I. T. (2016). An evaluation of human capital theory and female entrepreneurship in sub-Sahara Africa: Some evidence from Ghana. *International Journal of Gender and Entrepreneurship*, *8*(4), 402-423.

Adom, K., Asare-Yeboa, I. T., Quaye, D. M., & Ampomah, A. O. (2018). A critical assessment of work and family life of female entrepreneurs in Sub-Saharan Africa: Some fresh evidence from Ghana. *Journal of Small Business and Enterprise Development*, *25*(3), 405-427.

Ahinkorah, B. O., Hagan Jr, J. E., Seidu, A. A., Bolarinwa, O. A., Budu, E., Adu, C., ... & Schack, T. (2023). Association between female genital mutilation and girl-child marriage in sub-Saharan Africa. *Journal of Biosocial Science*, *55*(1), 87-98.

Akwero, P. (2023). *Educating a Girl Child: Community Perceptions on Educating Girl Children in Rural Uganda* (Master's thesis, Norwegian University of Life Sciences).

Algozzine, B., & Hancock, D. (2017). *Doing case study research: A practical guide for beginning researchers*. Teachers College Press.

Ali, M. A., & Kamrajum, M. (2023). Ethical Dimensions of Promoting Girl Child Education for Social Empowerment. *Deccan Geographer*, *61*(3), 205-217.

Almeida, F. (2018). Strategies to perform a mixed methods study. *European Journal of Education Studies*.

Baah-Mintah, R., Owusu-Adjei, E., & Koomson, F. (2018). Education and training of small-scale entrepreneurs: A tool for poverty reduction in the Nkoranza South Municipality, Ghana. *Journal of Business*, *6*(4), 143-151.

Beck-Peter, T., & Wenzel, N. G. (2020). Educating Girls, Educated Women: Dehomogenizing the Impact of Education in Development. *Journal of Women's Entrepreneurship & Education*.

Binuomote, O. E. (2023, May). Interconnectedness of Girl-Child Education and Poverty Alleviation: Exploring the Dynamics. In *Lead City University Postgraduate Multidisciplinary Conference Proceedings* (Vol. 1, No. 2, pp. 400-408).

Boateng, A., & Sottie, C. A. (2021). Harmful cultural practices against women and girls in Ghana: Implications for human rights and social work. *The tensions between culture and human rights*, 105

Chant, S. (2016). Women, girls and world poverty: empowerment, equality or essentialism?. *International Development Planning Review*, *38*(1), 1-24.

Chemtai, D. (2018). Impact of girl child education on community development: a case study of Suam and Kapyoyon Primary Schools in Suam Sub County, Bukwo District.

Dasgupta, D. P. (2024). *Girls'education and Empowerment in Rural Areas*. Notion Press.

Demedeme, G., & Opoku, C. B. (2022). Economic empowerment of rural women: Assessing the effectiveness of the rural enterprise program (REP) in Ghana, West Africa. *Journal of Agricultural Extension and Rural Development*, *14*(1), 13-23.

Demir, S. B., & Pismek, N. (2018). A Convergent Parallel Mixed-Methods Study of Controversial Issues in Social Studies Classes: A Clash of Ideologies. *Educational Sciences: Theory and Practice*, *18*(1), 119-149.

Dhiman, D. B. (2023). Education's Role in Empowering Women and Promoting Gender Inequality: A Critical Review. *Available at SSRN 4556375*.

Erikitola, J. O., & Atoba, B. O. (2023, May). Roles of Parental Involvement in Promoting Girl Child Education in Nigeria. In *Lead City University Postgraduate Multidisciplinary Conference Proceedings* (Vol. 1, No. 1, pp. 397-408).

Fatima, S. (2023). Rural development and education. *critical strategies for ending child marriages*.

Feyissa, G. T., Tolu, L. B, Soboka, M, & Ezeh, A. (2023). Effectiveness of interventions to reduce child marriage and teen pregnancy in sub-Saharan Africa: A systematic review of quantitative evidence. *Frontiers in Reproductive Health*, 5, 1105390.

Ge, T., Abbas, J., Ullah, R., Abbas, A., Sadiq, I., & Zhang, R. (2022). Women’s entrepreneurial contribution to family income: innovative technologies promote females’ entrepreneurship amid COVID-19 crisis. *Frontiers in Psychology*, *13*, 828040.

Gitari, J. W. (2024). *Influence of Social-Economic Factors on Secondary School Dropout Among Girls in Mariani Ward, Tharaka-Nithi County, Kenya* (Doctoral dissertation, St. Paul's University).

Gordon, R. (2023). ‘Your mind becomes open with education’: exploring mothers’ aspirations for girls’ education in rural Bihar. *Compare: A Journal of Comparative and International Education*, *53*(5), 837-854.

Gordon, R. J. (2018). *Why has economic growth slowed when innovation appears to be accelerating?* (No. w24554). National Bureau of Economic Research.

Hilson, G., Hilson, A., Siwale, A., & Maconachie, R. (2018). Female faces in informal ‘spaces’: Women and artisanal and small-scale mining in sub-Saharan Africa. *Africa Journal of Management*, *4*(3), 306-346.

Kabeer, N. (2021). Gender equality, inclusive growth, and labour markets. In *Women's Economic Empowerment* (pp. 13-48). Routledge.

Khan, M. T. (2015). Role of education in poverty reduction (A literature review). *International Journal of Information, Business and Management*, *7*(3), 124.

Kober, M. J. (2016). Educational Opportunities for Adolescent Girls' Empowerment in Developing Countries.

Kopnina, H. (2020). Education for the future? Critical evaluation of education for sustainable development goals. *The Journal of Environmental Education*, *51*(4), 280-291.

Ledwith, M. (2020). *Community development: A critical and radical approach*. Policy Press.

Lianyu, C., & Msafiri, M. (2022). Analysis of sociocultural factors for schools drop out among girls in Tanzania: A case study of junior secondary school. *Asian Journal of Education and Social Studies*, *33*(4), 15-29.

Liu, Z., Hasan, M. M, Xuan, L. I, Saydaliev, H. B, Lan, J, & Iqbal, W. (2022). Trilemma association of education, income and poverty alleviation: managerial implications for inclusive economic growth. *The Singapore Economic Review*, 1-24.

Ma, L., Zhang, Y., Li, T., Zhao, S., & Yi, J. (2024). Livelihood capitals and livelihood resilience: Understanding the linkages in China's government-led poverty alleviation resettlement. *Habitat International*, *147*, 103057.

Murphy-Graham, E. (2024). From Girls' Education to Gender-Transformative Education: Lessons from Different Nations. *Dædalus*, *153*(4), 267-285.

Musambachime, L. (2022). *The impact of the free education policy on the infrastructure and learning materials at primary school level: a case of selected schools of Solwezi district* (Doctoral dissertation, The University of Zambia).

Nasiry, F. (2024). *Exploring the Impact of lack of Wash facilities on Girls' Education and Health in Higher Secondary Schools in Afghanistan* (Doctoral dissertation, AUW).

Ngulube, L., Thelma, C. C., Gilbert, M. M., Sylvester, C., Mpolomoka, D. L., & Mulenga, D. M. (2024). Gender Equality and Economic Growth: A Case of Lusaka District, Zambia. *Asian Journal of Education and Social Studies*, *50*(7), 181-196.

Nyarkoa, A. (2023). *What household and community factors help us understand the educational success of a small group of Ghanaian girls from disadvantaged backgrounds?* (Doctoral dissertation, University of Warwick).

Otieno, D., Nyerere, J., Shisanya, C., Mutuma, W., Kariuki, D., Bula, H., ... & Onyango, J. (2024). Impact of integration of transferable skills into education and training on employability of women in Kenya: case for CAPYEI. *Quality Education for All*, *1*(1), 364-384.

Presler-Marshall, E., Jones, N., Dutton, R., Baird, S., Yadete, W., Woldehanna, T., ... & Gezaghne, K. (2020). Girls don’t shout if they are raped… that is taboo’: exploring barriers to Ethiopian adolescents’ freedom from age-and gender-based violence. *Report. London: Gender and Adolescence: Global Evidence*.

Psaki, S., Haberland, N., Mensch, B., Woyczynski, L., & Chuang, E. (2022). Policies and interventions to remove gender‐related barriers to girls' school participation and learning in low‐and middle‐income countries: A systematic review of the evidence. *Campbell Systematic Reviews*, *18*(1), e1207.

Ralte, M. H. (2024). *Womens Empowerment And Gender Equality*. Academic Guru Publishing House.

Sallah, A. A. (2021). *International Imposition vs. Domestic Assimilation: The Criminalization of Female Genital Cutting in Ghana* (Master's thesis, University of Windsor (Canada)).

Samuels, F., & Ghimire, A. (2021). Preventing school dropout and early marriage in Nepal. UNICEF

Sang, E. J. (2023). *Effect Of Sanitation and Hygiene Practices on Students’academic Performance in Public Secondary Schools in Muhoroni Sub-County, Kenya* (Doctoral dissertation, University of Eldoret).

Sen, G., & Mukherjee, A. (2017). No empowerment without rights, no rights without politics: Gender-equality, MDGs and the post-2015 development agenda. In *The MDGs, Capabilities and Human Rights* (pp. 92-106). Routledge.

Stromquist, N. P. (2022). Women’s Education in the 21st Century. *Comparative education: The dialectic of the global and the local*, *187*, 00076-7.

Takyi, S. A., Amponsah, O., Asibey, M. O., & Ayambire, R. A. (2021). An overview of Ghana’s educational system and its implication for educational equity. *International Journal of Leadership in Education*, *24*(2), 157-182.

Tomasi, J., Warren, C., Kolodzey, L., Pinkney, S., Guerguerian, A. M., Kirsch, R., ... & Trbovich, P. (2018). Convergent parallel mixed-methods study to understand information exchange in paediatric critical care and inform the development of safety-enhancing interventions: a protocol study. *BMJ open*, *8*(8), e023691.

Tyagi, R., Vishwakarma, S., Rishi, M., & Rajiah, S. (2021). Reducing inequalities through education and skill development courses. In Reduced Inequalities (pp. 746-758). Cham: Springer International Publishing.

UNICEF. (2006). *The state of the world's children 2007: women and children: the double dividend of gender equality* (Vol. 7). Unicef.

Vijayan, V. (2024). *Unveiling the Power of Teacher Education Promoting Gender Equality in Education*. Research Culture Society and Publication.

Wangamati, C. K. (2020). Comprehensive sexuality education in sub-Saharan Africa: adaptation and implementation challenges in universal access for children and adolescents. *Sexual and Reproductive Health Matters*, *28*(2), 1851346.

Wekesah, F. M., Nyakangi, V., Onguss, M., Njagi, J., & Bangha, M. (2019). *Comprehensive sexuality education in sub-Saharan Africa*. African Population and Health Research Center.

Yin, R. K. (2017). *Case study research and applications: Design and methods*. Sage Publications.

Definitions, Acronyms, Abbreviations

Here is the Definitions section. This is an optional section.

**Term**: Definition for the term