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Article

From Skills to Agency: CBO Education Intervention and Women's Economic Empowerment in Montserrado County

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Abstract: Women in Montserrado face structural barriers that limit the translation of CBO training into income, asset control, and household decision-making, and existing evaluations rarely identify ineffective interventions. This study assessed the impact of CBO education interventions on women's economic empowerment using the Capability Approach and a mixed-methods convergent parallel design. It targeted a total of 42,990 women comprised of the beneficiaries of the program. The sample borrowed Kothari's formulae in arriving at 384. This sample was distributed proportionally across five districts. Out of the 384 who were initially targeted, 310 returned the questionnaires duly filled. The analysis first took a quantitative angle; this entailed the use of descriptive analysis as well as correlations and cross-tabulations coupled with ANOVA and multiple regressions. On the other hand, qualitative analysis was also done. This involved the data that was collected in terms of interviews, FGDs. This data was paraded thematically and analyzed. Results from the cross tabulation revealed that women received marginal gains in formal education (25% vs 11.8%), digital literacy (25% vs 8.3%), and vocational training (21.1% vs 11.1%), with inconsistent informal education effects (14%). Correlations were weak ($r = -0.10$ to 0.07), regressions showed negligible predictive effects (digital literacy $\beta = -0.144$, informal education $\beta = -0.091$), and ANOVA results were non-significant ($F = 0.98–1.72$, $p > 0.16$). Qualitative insights highlighted persistent constraints, including limited capital, market access, household barriers, and poor infrastructure. The results of the study indicated that education through CBO alone is not enough to bring about significant economic empowerment unless it is accompanied by economic and social support.

Keywords: Women's Economic Empowerment, Education Intervention, Community-Based Organizations, Montserrado County, Liberia

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1. Introduction

To the present time, international and national promises for women's equality have not succeeded in ending the disparities. Major distinctions still exist between women and men in developing countries concerning income, skills, and power. Studies correlate weak economic agency with ill health, unpredictable income and little power to adapt [1]. Such disparities lead to women's income being lower than it could be, thus limiting the implementation of development projects. They also mean that it is absolutely crucial to take another look at the ways that empower women through skill development, financial independence and resource control.

Women's access to land, credit, training, and formal employment across the continent is limited by the structural barriers. Studies have shown that there are still gender inequalities regarding productive lands, workers' qualifications and financial services, while policy commitments like CEDAW and the Maputo Protocol are still being slowly implemented (Meroka-Mutua). Unattractive social security benefits and

insufficient training programs are other factors that confine women to certain labor markets [2]. This scenario leads to the continuity of feminine poverty and restriction of income growth that is not only sustainable but also of great economic and social dynamism. Studies show that when women are the recipients, there is a demand for skill, literacy, and empowerment.

CBO education interventions are seen as filling those skill gaps through different means such as literacy training, vocational skills, business management and health education, as well as digital literacy. Participation in skills training, among other findings, is considered the principal avenue to income enhancement, empowerment in decision-making, and developing resilience [3]. However, some studies show that fragmented training curricula, short course durations, lack of follow-up, and poor alignment with the labor market all together are factors that greatly diminish the outcomes of the programs, if not completely eliminate them, particularly in the case of women [4], [5]. Moreover, the limited monitoring and lack of strong accountability mechanisms are the reasons why the quality of the programs is not up to the required standard. These gaps lead to the question of how the education interventions then transform women's capability, control over and access to income and assets, particularly in the urban settings such as Montserrado.

So far, existing studies in Liberia have focused on single interventions and do not shed light on the interaction of educational programs with economic constraints or how local regulations impact program quality [6], [7]. This, in turn, reduces the ability of policymakers and practitioners to design effective skill programs that will empower women and keep providing beneficial long-term economic outcomes. Hence, the present study takes on this issue by exploring the linkage between CBO education interventions and women's income, asset control, and decision-making in Montserrado County. It aims at producing evidence that is not only practical and usable in the creation of stronger programs but also in the support of women's skills, agency, and sustainable livelihoods.

2 Literature Review

2.1 Introduction

This section paper critically evaluates the existing literature on women's poverty, community interventions, and education programs in Liberia and similar contexts. Theoretical and empirical realms of the study are identified together with the shortcomings and limitations of the existing studies. The review is divided into three sections. First, the Capability Approach is acknowledged as a tool to measure empowerment via education and skills acquisition. Then, the condition of women, their poverty, and the intermittent roles of community-based organizations in providing social and economic support are reviewed. The review finally presents the field evidence that education interventions, whether conducted by CBOs as formal, informal, digital, and vocational training, have a positive effect on women's economic and social outcomes. The review constantly highlights the structural, institutional, and cultural factors that reduce the programs' effectiveness and points out the gaps that justify the study's focus on measurable empowerment outcomes in Montserrado County.

2.2 Theoretical Framework

The research is based on the Capability Approach, which was initially created by Amartya Sen and later augmented by Martha Nussbaum [8]. Besides the economic situation, the approach emphasizes the actual freedoms and possibilities people have to live their preferred lives [9]. It therefore provides a considerable perspective through which to view the impact of education, skills, and social conditions on women's ability to act, choose, and enhance their well-being. One of the main aspects of Nussbaum's work is to point out the basic human capacities like life itself, health of the body, friendship, and rational thinking, which are the criteria for social arrangements and women's empowerment evaluation [10]. By giving priority to real freedoms instead of

just material resources, the approach presents a detailed viewpoint on the power of women to act in the midst of structural inequalities.

The approach gives emphasis on functionings which refer to the possessions of people that can be, for example, the ability to read or having a job that one considers valuable, whereas, capabilities are the true chances given to a person to have these possessions [11]. In Montserrado County, social conventions, lack of resources, and poor governance limit women's conversion of education and training into empowerment that is meaningful [12]. The study uses the Capability Approach as a framework to evaluate formal schooling, informal education, digital skills, and vocational training, intending to see if these measures empower women financially, allowing them to diversify their businesses and have a say in family decisions. This is done by relating capabilities to observable outcomes and thus ensuring that empowerment is assessed in a practical way, grounded in the context rather than through theoretical access only.

The reason behind the employment of the Capability approach lies in its capacity to aid in evaluating not only formal education, but also informal as well as digital literacy and vocational training viewed from the realm of gender. The examination involved assessing how far these measures assist women to take charge of their income, engage more in business and be more involved in household-level decisions. The study treats capabilities as observable phenomenon while empowerment goes beyond theory to encapsulate what can be observed and measured practically.

The Capability Approach, although strong, has some weaknesses. It does not consider the structural and institutional constraints fully, such as the hard-core patriarchal culture, poor governance, and historical injustices which can prevent women from utilizing their capabilities [13]. Consequently, this research identifies these limitations but also overcomes them by applying contextual factors in the analysis, household duties, resource access, and social restrictions. Overall, the Capability Approach is used to highlight the link between capabilities and constraints; thus, it provides a rather practical viewpoint for assessing the influence of the CBO's activities in Liberia. Moreover, it permits the research to rely not merely on participation metrics but also on quality of education producing results like income generation, business expansion and women's decision-making power being more or less than prior, all of which can be quantified and hence, empowerment outcomes.

2.3 Women, Poverty, and Community-Based Interventions

Poverty remains a very serious issue in Sub-Saharan Africa where it impacts women most severely as they are the ones who have to face the brunt of the above-mentioned systemic exclusion and deprivation [14]. The case of Liberia is a perfect example of the above where, despite the positive improvement measures being implemented in the area, poverty and lack of movement still remain the main issues for women living in Montserrado County [15]. The local social and economic programs are among the many factors that facilitate the identification of the very poor and marginalized women by the community-based organizations (CBOs) [16]. On the other hand, the study that resulted under delving into the longevity and the real impact of these interventions has not yet provided conclusive findings. Women's activities are mostly limited to the informal sectors which are almost entirely unprotected and the CBO efforts are rarely connected to the formal structures or backed by the long-term institutions which makes it very hard for them to create durable impacts of empowerment that are strong enough to last [17]. Most of the studies carried out so far have been concentrated on the evaluation of the program outputs rather than on whether participation has been translated into benefits such as income, business, or resilience growth.

The education programs of Community-Based Organizations (CBO), which include formal, non-formal, vocational, and digital training, provide women with a perfect opportunity to get the necessary knowledge and skills for economic participation

[18]. Digital and vocational training have become the main ways to guarantee one's income in the post-COVID world [19]. However, cultural norms that are difficult to change, weak policy frameworks, and insufficient institutional support are the main factors limiting the scope of participation. These limitations result in less skill retention, less economic empowerment, and less ability to scale up. Meanwhile, most of the research focuses on access or participation rather than how women translate their acquired skills into income, engage in entrepreneurship, or assert their power in decision-making. Therefore, the existing gap indicates the need for context-specific research to not only evaluate the educational exposure but also the economic and social outcomes of community-based organization-led interventions in Montserrado County, thereby influencing directly the design and policy relevance of the programs.

2.4 Empirical Literature Review: CBO Education Interventions and Women's Empowerment

In Liberia, community-based organizations run education-based interventions and in so doing, assist in managing challenges of structural inequality, a legacy of conflicts coupled with poverty which inhibit schooling. According to the World Bank, these challenges that face schooling have their roots in limited economic involvement coupled with indecisiveness [20]. Evidence points that in the midst of these constraints, then education cannot yield social and economic empowerment. However, when looked at critically, these studies fail to bring to the fore the constraints that CBOs face. In so doing, this limits the use of the findings from the studies for policy guidance in Montserrado County.

The areas in education that are of concern for CBOs are usually adult literacy, digital literacy and vocational training. Several authors acknowledge the gains that have been accrued in the educational interventions. For example, Kamara and Johnson cite gains accrued in digital literacy that have translated into engagement in constructive income generating activities that have transformed people's lives. In the same vein, Akeju et.al revealed that these programs are heavily dependent on donor funds and are delinked from the state regulations [21]. The shortcoming with reliance on donor funds is that it perpetuates a system of instability and the outcomes of the program are often negligible once the funds begin to decline. This, in itself reveals that there is a problem related to the structures charged with the responsibility of delivering. This, in itself, poses a sustainability challenge to these programs because of being established on a weak base.

In addition to these insights, regional studies also compliment the argument of the linkage between education and the structures in place to manage it. Kabubo-Mariara et.al opined that there was linkage between high dropout and unpaid care together with absence of childcare [22]. The study finds that when domestic pressures are high, the education programs falter. They also show that the gains made through instruction cannot be outmaneuvered by the structural care burden. At the same time, any program that fails to factor in social support ends up weak in its impacts. Digital learning, on the other hand, extends learning beyond the traditional market to include access to market as well as online finance. Digital learning, especially in rural areas, is usually affected by weak signals data costs and limited device [23]. These factors reduce the active participation of the users besides lowering the economic benefits of digital skills. The evidence shows infrastructure as a binding constraint. Digital training produces limited returns when basic access remains unequal.

Nguyen-Phung and Nthenya used an exogenous policy reform in Kenya to estimate gains from additional schooling [24]. They reported longer schooling, delayed fertility, lower FGM risk for daughters, reduced IPV, and stronger household decision-making. The results link formal schooling to reproductive and domestic empowerment. The study did not examine economic empowerment, enterprise outcomes, or market engagement. It also did not include non-formal learning, which dominates in Liberia.

The heavy reliance on national-level data masks local variation. These limits reduce the study's relevance for contexts driven by informal learning and persistent social barriers. The present study responds by focusing on CBO-led non-formal education in Montserrado and by expanding empowerment to income control, enterprise growth, and resilience to shocks. This addresses gaps in Nguyen-Phung and Nthenya by grounding analysis in local structures and by capturing outcomes that have economic and social significance [24]. The study also examines how norms and institutional support influence the translation of skills into empowerment.

In Uganda, a study was carried out by Kan and Klassen on how the removal of levies at primary school affected household decision-making and the educated women's cognitive ability [25]. The study revealed that when it comes to labor market participation, there was no progress made with regards to the attitudes towards gender-based violence. However, the study omitted income, resilience and entrepreneurship outcomes. Furthermore, the study also omitted how poverty, early marriages and the locally generated interventions affect the pathways for empowerment. The failure to capture these very critical factors delimits the study's relevance to Montserrado, a place where there are low levels of education, whether formal or informal. This gap is what this study seeks to fill through examining the extent to which literacy, vocational skills and financial knowledge are linked to income control and decision making, particularly in an urban area that has a high population. In addition, it exposes the linkage between empowerment outcomes are shaped by institutional constraints and social norms hence producing a nuanced understanding of the outcomes of education.

In Liberia, there are mixed results on vocational programs. For example, Konneh and Fahnbulleh found positive results of vocational training as seen through business formation initiatives as well as catering services and engagement in agriculture by the beneficiaries . All these efforts managed to enhance food security and income at the household level. On the negative side, Tewahido pointed out that due to strong social norms, female education was undervalued [26]. As a result, these norms negatively affect the program impact.

What comes out of these studies is that the programs that are run by CBOs do promote and enhance economic activity, social awareness and decision participation. However, they also face institutional as well as financial shortfalls. These shortfalls include: donor dependency, resource scarcity, gender discrimination, gaps in childcare, and digital durability. This raises pertinent questions pertaining their sustainability. Other studies focus on whether educational gains are directly linked to income growth, resilience or expansion of businesses. The evidence to validate this assertion is thin and as such makes it difficult to evaluate the long-term value. Besides, it throws a challenge on the policy options given the fact that it is difficult to design interventions when there is lack of clarity on which pathways deliver results.

Therefore, this gap is filled by the present study which focuses on the economic and social effects that are measurable. It does this by evaluating the CBO interventions versus income gains, enterprise growth, stronger household decision power and higher resilience to shocks. Besides, the study tests whether social norms, program design and institutional support lead to the deliberate conversion of skills into empowerment. In so doing, it provides actionable evidence that can be used by policy and program design in Liberia.

2.5 Conceptual Framework

The study was guided by a conceptual framework that modeled women's economic empowerment as the dependent variable. The dependent variable, women's economic empowerment, has been assessed using financial independence, employment, decision-making, and household food security as the main indicators. The moderating factors are cultural norms, social roles, and institutional backing, which can either reinforce or reduce the effect of education on empowerment results. The theory behind

the framework is the Capability Approach, which emphasizes the woman's right to transform her acquiring skills and knowledge into actual opportunities. Hence, the model articulates skills, social context, and personal agency, while at the same time accepting its limitations such as the belief that skills will always generate income or that social networks can entirely bypass structural barriers, by concentrating on the constraints of the context. Figure 1 present the conceptual framework.

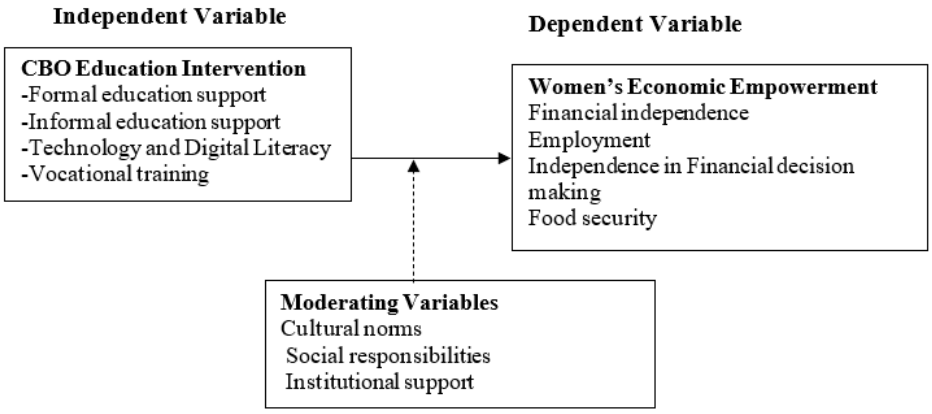


Figure 1. Conceptual Framework for the Study.
Source: Author (2025).

2. Methodology

The study employed a mixed-methods strategy to find out how far the poverty reduction measures of the community-based organizations in Montserrado County, Liberia, have assisted the women in getting stronger. The study population consisted of women from Montserrado County who had received direct support from the CBOs' poverty alleviation projects. Montserrado was chosen due to its status as the most densely populated county in Liberia, which also contains the capital city where the majority of CBOs and women under empowerment programs reside. Five administrative districts formed the sampling design. These were Todee, Monrovia, St. Paul River, Careysburg and Commonwealth. These districts, as Johnson and Sakyi aver have up to 42, 990 beneficiaries who are registered [27]. Specifically, the study narrowed down to women who were participants in the CBO programs. This ensured that responses were from primary sources since the beneficiaries had knowledge of inclusion, health, education and agricultural interventions. Computations of the sample size followed Kothari's formulae making a total of 384.

The process of choosing respondents entailed simple random sampling which was acquired from the beneficiary lists of the CBOs that were updated to guarantee everyone an equal chance of being selected.

Respondents were chosen through simple random sampling from updated beneficiary lists. The questionnaire was the main instrument of conducting the survey. These questionnaires were structured and they captured not only the demographics of the respondents, but also had sections on their involvement in interventions run by CBO's, financial outcomes such as participation in household decisions, financial independence and food security.

The secondary data gathered from CBO reports, government statistics, and UN publications was providing the contextual support and validation. Data collection through trained enumerators was conducted face-to-face and under daily supervision with random back-checks done.

The total response rate came to 80.7% as a result of 310 questionnaires filled out. Sataloff and Vontela, explain that a response rate exceeding 70% is considered very good [28]. Hence, it is possible to say that the response rate is extraordinary and characterized by the whole population that participated in the research. The opinions of

the participants are included in the data and thus the data can support a strong analysis of CBO interventions and their effects on women's economic empowerment.

Internal consistency was examined by the Cronbach's alpha method which opened up the reliability analysis. There were 75 items in the survey and various types of questions were used such as Likert-scale, multi-response, and open-ended questions. The part for CBO empowerment strategies got a Cronbach alpha of 0.879 which is above the cut-off value of 0.70, therefore, it means that this measurement is reliable and that there is a very good internal consistency of the constructs [29]. Consequently, it is justifiable to state that the device was robust enough to uncover the strategies the CBOs had been using as well as their impacts on women's economic empowerment.

The combination of survey data, qualitative insights, and secondary sources, by the way of triangulation, gave a strong backing to the credibility and interpretability of the results. Ethical practices like informed consent, voluntary participation, anonymization, and getting the go-ahead from the University of Liberia Institutional Review Board were put in place to keep the participants safe and the data confidential.

3. Results And Discussion

3.1 Introduction

This chapter presents the analysis of community-based organization educational interventions and their relationship with women's economic empowerment. It covers descriptive statistics of respondent demographics, cross-tabulations of education support and empowerment outcomes, correlation analyses, regression models, and ANOVA tests, supplemented by qualitative insights from participants. The section is structured to explore patterns, relationships, and the contextual factors that shape the effectiveness of formal education, informal education, digital literacy, and vocational training programs.

3.2 Descriptive Statistics

The study captured key demographics of 310 female respondents in Montserrado County, Liberia. Age distribution skewed toward mid-career women (35–44 years, 38.7%), with younger (15–24 years, 24.8%) and older (45–54 years, 14.8%) groups moderately represented. Marital status was evenly split between married (35.8%) and single (35.2%) participants, while widowed, separated, and divorced women together accounted for 29.1%. Educational attainment showed moderate to high literacy, with 50.2% of respondents holding at least secondary education. It is noteworthy that 21.9% of the respondents did not possess any formal education. This scenario is likely to impact on literacy together with economic interventions engagement. Furthermore, another 57.1% of the respondents registered that they had lived in Montserrado county for over 10 years by 34% only resided for between six to ten years. It is assumed that long time residency has an influence on access to social networks and the programs run by CBOs.

When it comes to income and employment patterns, economic vulnerability suffices. This is seen in the meagre 38.4% of the respondents who indicated that they were employed out of which only 15.5% of the women indicating that they are formally employed. The remaining percentage constituted of those who work on part time, unemployed, students, retirees or home makers.

From the data on income, there was a substantive indication of poverty at 48% who earned between 0.26-2.60 US dollars monthly. Only 12.3% exceeded LRD 1,500. The non-response rate that was too high (26.8%) for income and 61.6% foe employment) was a pointer towards high sensitivity to economic questions. At the same time, CBO membership was high at 76.1%. This was partly attributed to the CBO's ties with the locals and associated revenue. Income data revealed poverty levels, with about 48.4% earning LRD 50–500 (≈USD 0.26–2.60).

Meanwhile, income data indicated substantial poverty: 48.4% earned LRD 50–500 (≈USD 0.26–2.60). The findings are summarized in Table 1.

Table 1. Demographic Characteristics of Respondents (n = 310).

Variable	Category	Frequency	Percentage (%)
Age	15–24	77	24.8
	25–34	67	21.7
	35–44	120	38.7
	45–54	46	14.8
Marital Status	Single	109	35.2
	Married	111	35.8
	Widowed	34	11
	Separated	30	9.7
	Divorced	26	8.4
Education Level	No formal education	68	21.9
	Primary	39	12.6
	Secondary	59	19
	Diploma	59	19
	Post-secondary (no degree)	21	6.9
	University degree	64	20.6
Length of Stay in Montserrado	<5 years	24	7.7
	6–10 years	108	34.8
	>10 years	177	57.1
Employment Status	Employed full-time	48	15.5
	Employed part-time	12	3.9
	Self-employed	28	9
	Unemployed	19	6.1
	Student / Homemaker / Retired	12	3.8
Income (LRD)	50–500	150	48.4
	501–1500	39	12.6
	1501–4000	31	10
	4001–6000	4	1.3
	6001–30,000	3	1
CBO Membership	Member	236	76.1
	Non-member	73	23.5
	No response	1	0.4

Overall, the dataset shows substantial non-response in sensitive variables (income, employment, sector). Any analysis relying on these data points must acknowledge potential bias. Long-term residents' higher CBO participation may amplify reported empowerment outcomes, whereas newer residents or non-respondents may be systematically excluded from interventions.

3.3 Cross-Tabulation

Building on the descriptive statistics presented in Section 4.2, the study examined how different CBO educational interventions relate to women's economic empowerment outcomes. Cross-tabulations were conducted across four dimensions of educational support: formal education, informal education, digital literacy, and vocational training. The results reveal a mixed pattern of effectiveness, highlighting both strengths and critical gaps in program implementation as shown in Table 2:

Table 2. Cross-Tabulation of CBO Educational Interventions and Women's Empowerment Outcomes.

Variable	Support Level	Low Outcome (%)	High Outcome (%)	χ^2	df	p-value
Formal Education	None	64.7	11.8	16.76	9	0.053
	High	33.3	25			
Informal Education	None	49.3	0	6.53	9	0.686
	High	41.9	14			
Digital Literacy	None	58.3	8.3	3.35	3	0.34
	High	35.7	25			
Vocational Training	None	55.6	11.1	3.19	3	0.364
	High	42.1	21.1			

*All percentages rounded to one decimal place.

Women who reported high support in formal education exhibited somewhat higher economic empowerment outcomes (High Outcome: 25%) compared to those with no support (High Outcome: 11.8%). The association approached but did not reach conventional statistical significance ($\chi^2 = 16.76$, df = 9, p = 0.053), suggesting a weak trend rather than a strong effect. One participant stated, *"Even with the literacy classes, I still struggle to access loans or run my small business properly"* (Participant R002 in 2025), indicating that formal education support may not be fully translating into economic gains.

Surprisingly, the relationship between informal education support and empowerment was inconsistent. Among participants reporting no informal education support, 0% achieved high empowerment outcomes, whereas 14% of those with high support did so. The chi-square result ($\chi^2 = 6.53$, df = 9, p = 0.686) confirms that this relationship is not statistically significant. A respondent stated, "*The skills I learned in the group are interesting, but they don't help me make money right now,"* (Participant R023 in 2025), highlighting practical limitations in informal programs for immediate economic impact.

Digital literacy support showed modest improvements, with 25% of highly supported women achieving high empowerment outcomes versus 8.3% with no support. However, the association was not significant ($\chi^2 = 3.35$, df = 3, p = 0.34). This suggests that access to digital skills alone is insufficient, potentially due to low digital infrastructure, limited practical application, or lack of complementary financial or vocational resources. High support in vocational training also showed higher empowerment outcomes (21.1% vs. 11.1%), but again, the association failed to reach significance ($\chi^2 = 3.19$, df = 3, p = 0.364). It is possible that vocational training is inconsistently implemented across CBOs or that women face structural barriers, such as limited startup capital or market access, that prevent training from translating into measurable economic gains.

Overall, the cross-tabulation results indicate that CBO educational interventions, while somewhat positively associated with women's economic empowerment, do not exhibit strong, statistically significant effects. This outcome may be influenced by multiple factors: variable program quality, inconsistent participation, socio-economic constraints, and the high reliance on informal or unstructured interventions. Importantly, qualitative data confirm these limitations, with participants expressing frustration over the practical usefulness of training.

While CBO educational support contributes to empowerment, the evidence suggests that interventions are insufficiently targeted, unevenly implemented, or poorly integrated with other poverty alleviation measures. Strengthening program delivery, ensuring follow-up support, and aligning training with practical economic opportunities could improve outcomes.

3.4 Multivariate Analysis

3.4.1 Correlation Analysis of Education Interventions and Women's Empowerment

Looking at the interconnections between education-related interventions and women's economic empowerment will result in a much deeper analysis. Table 3 shows the correlation coefficients of Pearson among the four types of education support identified, including formal education, informal education, digital literacy, and vocational training, and the three indicators of women's empowerment which are food security, financial freedom, and decision-making power. The correlation matrix suggested that at none of the points was there a statistically significant relation among them at $p < .05$.

The correlations, once analyzed, expose their direction, strength, and most frequently, very weak character. The very weak association which still was considered noticeable was the extremely small yet positive correlation between digital literacy and financial freedom ($r = 0.07$), but it was not statistically significant still. Conversely, informal education and food security had a small negative correlation ($r = -0.10$), while the other correlations were nearly around zero. Hence, these weak linear associations indicate that treating different education interventions separately, they cannot be regarded as strong predictors of any empowerment outcome.

Table 3. Pearson Correlation Matrix: Education Interventions and Empowerment Variables.

Variables	Food Security	Financial Freedom	Decision-Making Power
Formal Education	-0.03	0.05	0.02
Informal Education	-0.1	0.04	0.06
Digital Literacy	0.01	0.07	0.03
Vocational Training	0.05	0.02	0.04

Note. r values represent Pearson correlation coefficients. None were statistically significant at $p < .05$.

Source. Author (2025)

These results underscore the multifaceted nature of empowerment. At the bivariate level, the data suggest that women's empowerment outcomes may be influenced not just by isolated education inputs but by broader contextual and interacting variables

3.4.2 Regression Analysis – Education Interventions Predicting Food Security

To assess the predictive capacity of community-based organization (CBO) education interventions on women's economic empowerment, multiple linear regressions were conducted across three key outcomes: food security, financial freedom, and decision-making power. Independent variables included formal education, informal education, digital literacy, and vocational training. Table 4 presents the consolidated results.

Table 4. Regression Analysis of CBO Education Interventions Predicting Women's Empowerment Outcomes.

Predictor	**Food Security (β, p)**	**Financial Freedom (β, p)**	**Decision-Making Power (β, p)**
Formal Education	0.018, 0.698	0.006, 0.924	–0.021, 0.538
Informal Education	–0.091, 0.091	–0.023, 0.732	0.033, 0.641

Digital Literacy	–0.144, 0.074	0.072, 0.309	0.046, 0.498
Vocational Training	–0.041, 0.534	–0.045, 0.516	–0.006, 0.929
Constant	2.834, <0.001	3.143, <0.001	2.911, <0.001

Note. Dimensions of the Empowerment (Food Security, Financial Freedom, Decision-Making Power) β = standardized coefficient; p = significance level.
Source. Author (2025)

The regression analysis revealed that none of the education interventions—formal education, informal education, digital literacy, or vocational training—achieved conventional statistical significance ($p < .05$) in predicting women's food security, financial freedom, or decision-making power. *Marginal effects were observed for digital literacy (β = –0.144, p = 0.074) and informal education (β = –0.091, p = 0.091), which showed weak negative associations with food security, suggesting that higher levels of education alone do not necessarily translate into improved access to nutrition or household resources.* Formal education and vocational training exhibited negligible effects across all outcomes, with β values near zero, highlighting their minimal direct impact on empowerment indicators. Similarly, financial freedom and decision-making power were largely unaffected by educational interventions, reinforcing the observation that skills acquisition or literacy gains do not automatically shift household economic or power dynamics. One participant stated that despite literacy classes, the challenge of accessing loans was still there hence making it difficult to run business (R002 in 2025). This, in itself, demonstrated the missing link between the education that the people were exposed to and measurable economic benefits.

This was also voiced by another respondent as follows: *'In spite of completing my digital skills course, I am still unable to benefit from it in terms of income increase or customer base'* (R014 in 2025). When it comes to technology training and persistence of constraints in the market, the third participant averred as follows: '*As much as the vocational training skills were infused in me, it is a big challenge to use them because of lack of capital'*. (R027 in 2025). This was an indication that there is a disconnect between the structures that enhance empowerment.

The deduction from the above findings is that whereas the education programs by CBOs do facilitate the acquisition of knowledge, they do not translate to economic empowerment. The weak links related to informal education and digital literacy are a pointer to the larger structural barriers such as inadequate capital, social norms which constrain women's quest for economic participation. At the same time, it could also be possible seen from a reverse causality perspective that those who face the challenges of food insecurity or financial strain may enroll in the programs hence causing negative associations.

Practically, it can be argued that for educational interventions to be successful, they should be complimented by broader initiatives. These include: social support, access to microfinance, business development, social protection programs as well as household gender-sensitization. The managers of CBO's and policy makers should go beyond the assumption that literacy and vocational education alone translate into economic empowerment but should address structural and contextual constraints.

These regression results also capture nuances that correlation analyses cannot: the interplay of sociocultural, economic, and systemic factors shapes empowerment outcomes in ways that education alone cannot explain.

In conclusion, the analysis highlights the multidimensional and context-dependent nature of women's empowerment. Sole reliance on CBO education programs is unlikely to substantially improve food security, financial autonomy, or decision-making power. Strategic integration of educational interventions with complementary economic, social, and household-level supports is essential to produce meaningful and sustainable empowerment outcomes.

3.4.3 ANOVA Analysis of Education Interventions and Women's Empowerment Outcomes

To complement correlation and regression analyses, a one-way ANOVA was conducted to examine whether differences in levels of CBO educational support significantly influence women's empowerment outcomes. Separate models were run for food security, financial freedom, and decision-making power, with four education intervention types as independent factors: formal education, informal education, digital literacy, and vocational training. Table 5 summarizes the findings.

Table 5. ANOVA Results.

Empowerment Outcome	Source of Variation	SS	df	MS	F	p-value
Food Security	Between Groups	0.634	3	0.211	1.72	0.164
	Within Groups	37.41	306	0.122		
Financial Freedom	Between Groups	0.541	3	0.18	1.29	0.277
	Within Groups	42.64	306	0.139		
Decision-Making Power	Between Groups	0.378	3	0.126	0.98	0.403
	Within Groups	39.21	306	0.128		

The ANOVA results show no statistically significant differences across levels of educational support for any empowerment outcome. For food security, the F-statistic of 1.72 with $p = 0.164$ indicates that variation in formal education, informal education, digital literacy, or vocational training does not explain differences in household nutritional outcomes. Financial freedom ($F = 1.29$, $p = 0.277$) and decision-making power ($F = 0.98$, $p = 0.403$) also show no significant effects, indicating that educational support alone does not improve these outcomes.

These results confirm the patterns observed in correlation and regression analyses. The marginal negative coefficients for digital literacy ($\beta = –0.144$, $p = 0.074$) and informal education ($\beta = –0.091$, $p = 0.091$) suggest underlying factors limit the impact of education on food security. Formal education and vocational training have negligible effects across all outcomes.

Qualitative evidence supports these findings. A participant noted, "*The skills I learned help me a little, but without money or customers, I cannot improve my life*" (R045 in 2025). Another reported, "*I completed the vocational training, yet I still depend on my husband for financial decisions*" (R0267 in 2025). A third participant stated, "*Even after digital literacy sessions, I cannot use online tools to increase sales because there's no internet or devices at home*" (R089 in 2025). These statements highlight that training alone does not overcome financial, infrastructural, or sociocultural constraints.

The ANOVA confirms that CBO educational interventions alone do not improve food security, financial autonomy, or decision-making power. Education interventions require integration with access to capital, market opportunities, social support, and household-level gender programs to produce measurable empowerment outcomes.

3.4.4 Synthesis of the findings

The findings indicate that CBO educational interventions in Montserrado, formal education, informal learning, digital literacy, and vocational training, have limited direct impact on women's economic empowerment. Quantitative results show weak or non-significant effects on food security, financial autonomy, and decision-making power, while qualitative evidence reveals that skills acquisition often fails to translate into income, enterprise growth, or household authority. Structural barriers such as limited capital, market access, infrastructure gaps, and entrenched gender norms constrain the practical benefits of training.

Framed through the Capability Approach, the study shows that CBO-led educational interventions in Montserrado expand women's capabilities by providing

literacy, digital skills, and vocational training, yet these do not automatically convert into realized functionings such as income control, food security, financial autonomy, or enterprise growth. This aligns with Kamara and Johnson, who found that literacy and technical skills support entry into income-generating activities.

Regional evidence from Afolabi and Akinlolu shows that women in CBO programs gained access to credit, enterprises, and household decision-making, while Kabubo-Mariara et al. documented how domestic responsibilities reduce program effectiveness, illustrating that capabilities alone are insufficient under high care burdens [22]. Vocational programs in Liberia, as reported by Toe generated enterprise activity and improved household food security, which reinforces the potential for functionings when skills are applied [30]. The study also builds on Nguyen-Phung and Nthenya, who linked formal schooling to reproductive and domestic empowerment but did not examine economic outcomes or non-formal learning [24]. By focusing on CBO-led non-formal education, this study captures local realities, including enterprise engagement, income control, and resilience to shocks, and examines how social norms and institutional support influence the conversion of capabilities into functioning.

Overall, the findings suggest that while CBO programs increase women's potential freedoms, structural, social, and economic constraints limit the translation of these capabilities into sustainable economic empowerment, illustrating the central insight of the Capability Approach that freedom to achieve "functionings" depends on both personal capacities and enabling contexts.

4. Conclusions

This research was centered on the connection between the educational programs led by CBOs and the economic empowerment of women in Montserrado County, Liberia. The study examined formal and informal education, digital literacy, and vocational training and used the areas of food security, financial freedom, decision-making power, and enterprise engagement as the impact measure areas. The findings reveal that even though women acquire skill and knowledge through the CBO programs, the economic empowerment that comes with it is still quite uncommon. There are small improvements linked to program participation, but statistical analysis did not find any major effects. Qualitative data indicate that there are still some obstacles such as lack of capital, limited access to the market, heavy household work, and poor infrastructure which prevent women from using their skills to earn income or gain power in their decision-making. Training in itself does not lead to significant results.

The findings are innovative in indicating that education outside the formal system develops capabilities but does not necessarily result in economic functionings getting derived from such capabilities. Women are knowledgeable but still limited by the local socio-economic and structural realities. Institutional support, access to credit, market connections, and household level cooperation are essential for transforming skills into empowerment that can be felt. The study indicates that the only emphasis on skill acquisition is not enough; empowerment is complex and therefore requires simultaneous interventions in economic, social, and institutional areas.

The results are consistent with the Capability Approach. Women's participation in education lifts their Capabilities, but their transitioning into financial independence, business growth, and food security is still constrained by structural and situational barriers. Most of the time, women are denied access to the necessary resources, markets, or the progressive social standards that would let them partake in making economic decisions; hence, they cannot benefit from the digital or vocational skills that they have been taught. In some cases, the programs have even had slight negative correlations with particular outcomes, thereby indicating that under such circumstances the participation of the women may lead to nothing but frustration and unrealized aspirations.

On the other hand, the research point outs its restrictions. A major drawback of the cross-sectional design is that it limits the assessment of long-term effects or makes it difficult to draw causal relationships clearly. The way participants were selected meant only beneficiaries from the CBO program were included which could very well have led to the omission of women who are part of or near these networks. Self-report measures are bound to have some degree of bias even though the qualitative data does provide some extent of triangulation. Researchers wishing to look at the long-term effects of economic empowerment will have to go the route of longitudinal studies, which will also allow them to explore the interactions of non-formal education with financial and social supports, as well as how local norms and institutional arrangements either facilitate or hinder the conversion of skills into outcomes. By conducting comparative studies in different counties, not only will it be possible to find out how transferable these results are, but also qualitative inquiries could be made to get a picture of women's interactions with local norms and institutional arrangements.

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