Women's Empowerment, Community Characteristics, and Relative Resources: Exploring Intimate Partner Violence in West Africa

Abstract

Purpose

Intimate partner violence (IPV) affects 37% of women in sub-Saharan Africa, yet the influence of women's empowerment and community-level socioeconomic conditions on IPV risk remains inconclusive in West Africa. This study investigates how women's empowerment, measured by the Survey-based Women's Empowerment Index (SWPER), and community context influence IPV risk, guided by theories of empowerment and gendered power dynamics.

Methods

We used Demographic and Health Survey data from nine West African countries (2018–2022). The sample included 37,193 ever-married or cohabiting women of reproductive age who completed the domestic violence module. Descriptive statistics and multilevel binary logistic regression were used to analyze SWPER and IPV, accounting for community-level characteristics. The results are presented as odds ratios (ORs) and 95% confidence intervals (CIs), with statistical significance set at <0.05.

Results

Significant regional variations in IPV incidence were found, with Sierra Leone reporting the highest rates (34%) and Nigeria the lowest (12%). Women who rejected violence-condoning attitudes and those with decision-making autonomy had lower IPV risks, revealing the protective role of empowerment. Higher community-level poverty correlated with reduced IPV, possibly due to social cohesion, whereas dual spousal employment increased IPV odds by 22%.

Conclusions

This study highlights the interplay of individual and community factors in shaping IPV risks in West Africa. Policies should align with Sustainable Development Goal 5 to foster gender-equitable norms, empower women through skill-building, and address socioeconomic disparities to reduce IPV by 2030.

Keywords: Intimate partner violence (IPV), Women's empowerment, Community socioeconomic conditions, West Africa, Survey-based women's empowerment index (SWPER), Gendered power dynamics, Socioeconomic disparities, Sustainable development goal 5

Introduction

Violence against women, defined by the United Nations (UN) as follows:

> Any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion, or arbitrary deprivation, whether occurring in public or in private life. (World Health Organization (WHO, 2024, p. 1)

is a pervasive human rights violation. This issue is particularly acute in developing countries and significantly impacts public health and economic and social advancement (WHO, 2021).

Globally, an estimated three women (30%) have experienced either sexual intimate partner violence (IPV) or nonpartner sexual violence during their lifetime (WHO, 2021). In sub-Saharan Africa, the lifetime prevalence of IPV among women is significantly higher, at 37%, surpassing the global average and notably exceeding rates reported in Europe (16–23%) and Central, Eastern, and South-Eastern Asia (18–21%) (WHO, 2021).

Research on the prevalence and determinants of IPV in Africa is expanding (McCloskey et al., 2016; Tenkorang, 2019). However, significant gaps remain in understanding how women's empowerment and gender equality—at both the individual and community levels—affect IPV, particularly in Western Africa.

Women's empowerment is a complex, multifaceted concept, often described as a transformative process that enables women, previously constrained by societal norms, to gain agency and autonomy (Kabeer, 1999). The World Bank defines empowerment as "the process of enhancing an individual's or group's capacity to make purposive choices and to transform those choices into desired actions and outcomes" (Alsop et al., 2006, p. 1; Ewerling et al., 2017). Both definitions highlight empowerment as a process through which women can envision alternative life paths, recognize their abilities, and make correct decisions.

In the context of the Sustainable Development Goals (SDGs), particularly Goal 5, which explicitly seeks to achieve gender equality and empower all women and girls, women's empowerment has gained renewed focus. Furthermore, Onditi and Odera (2017) link empowerment to improving women's sexual and reproductive health outcomes.

However, evidence of the relationship between economic and social empowerment and IPV prevalence is mixed, complicating efforts by policymakers and practitioners to identify the most effective interventions (Campo & Steinert, 2020; Ranganathan et al., 2019). Western Africa, which is characterized by diverse cultural, socioeconomic, and colonial legacies, including Anglophone, Francophone, and Lusophone countries, represents the

main research gap. The area also faces unique challenges, such as high fertility rates, armed conflict (especially in the Sahel), rising unemployment, and economies heavily dependent on agriculture and natural resources—factors that influence both women's economic empowerment (Buvinic et al., 2020) and their vulnerability to IPV.

Despite these challenges and the severe repercussions of IPV—such as mental health issues and reproductive health complications—the region lacks comprehensive demographic and population-based policies to address violence. This shortfall hampers progress toward the SDGs, particularly Goal 5, which aims to eliminate all forms of discrimination, violence, and harmful practices against women and girls, including gender-based violence, by 2030.

In this paper, we use the newly developed Survey-based Women's Empowerment Index (SWPER), validated in 34 African countries via data from the Demographic and Health Surveys (Eweling et al., 2017), to investigate the associations and pathways between women's empowerment and the odds of IPV at both the individual and community levels. Eweling et al. (2020) also applied the index to national health surveys from other low- and middle-income countries (LMICs) across different regions. We contextualize our findings within SDG 5.2 and policies to reduce gender-based violence in Africa.

Literature Review

Prior research highlights intimate partner violence (IPV) as a profoundly complex and multifaceted issue shaped by a range of factors spanning all levels of the social-ecological model (Stockl et al., 2021; McCloskey et al., 2016). At the individual level, risk factors include behaviors and experiences such as excessive alcohol consumption, childhood exposure to violence, unemployment, lower educational attainment, and substance abuse. Household-level factors, such as economic stability and autonomy in decision-making processes, also strongly influence IPV risk (Bamiwuye & Odimegwu, 2014; Tessema et al., 2023). At the community level, persistent patriarchal norms, gendered cultural beliefs, and neighborhood socioeconomic conditions—such as poverty and community cohesion—play a significant role in shaping women's vulnerability to IPV (Cools & Kotsadam, 2017; Tessema et al., 2023).

The relationship between women's economic and social empowerment and IPV has produced mixed findings across various studies (Campo & Steinert, 2020; Leite et al., 2019; Abramsky et al., 2019; Gibbs et al., 2017). For example, Abramsky et al. (2019) reported that higher income among women correlates with an increased risk of physical and sexual IPV; women who contributed more financially to their households than did their partners

faced a heightened risk of IPV. Similarly, Koenig et al. (2003) reported that in conservative areas of Bangladesh, increased individual autonomy and participation in savings and microcredit groups were associated with a greater risk of IPV at the individual level, with no significant impact at the community level. Another study examining women's economic empowerment through microcredit and cash transfer programs demonstrated varied impacts on IPV, with reductions in physical and combined physical/sexual IPV but little to no effect on sexual IPV alone (Leite et al., 2019).

Conversely, some interventions have demonstrated positive outcomes in reducing IPV. For example, a South African program aimed at addressing both IPV and HIV achieved a 55% reduction in IPV among direct participants. However, it did not significantly affect rates of unprotected sexual intercourse or HIV incidence (Pronyk et al., 2006). In Tanzania, married and cohabiting women participating in microfinance programs presented a reduced risk of physical IPV both at baseline and over time and a reduced risk of sexual IPV at baseline only. However, there was no clear link between income and economic abuse. Greater financial contributions by women were associated with increased physical and sexual IPV at baseline, but this association persisted only among women in the control group over time (Abramsky, 2019). More recently, Donkoh et al. (2024) analyzed data from the Demographic and Health Surveys (DHS) across 19 sub-Saharan African countries and reported that respondents with high scores on the survey-based women's empowerment index (SWPER), particularly in domains such as negative attitudes toward violence and decision-making, were less likely to experience IPV.

These findings highlight important patterns, but significant gaps remain in the literature regarding the varying characteristics of women that may influence these associations. For example, the age of women could shape their vulnerability or resilience to IPV in different ways, with younger women facing distinct challenges compared with older cohorts. Similarly, economic status, especially at the community level, may mediate the impact of financial contributions, as women from lower-income communities may experience different power dynamics within relationships than those from higher-income backgrounds. The level of education also remains underexplored as a moderating factor. Education often intersects with cultural norms in ways that complicate its role in IPV outcomes despite being associated with increased empowerment.

These varied findings underscore the need for further investigation into the context-specific factors and diverse mechanisms through which economic and social empowerment interventions influence IPV risk. Moreover, employing a multidimensional and comparable measure such as the SWPER index provides a more robust

framework for overcoming the inconsistencies inherent in studies conducted across different settings. By leveraging such tools, researchers and practitioners can better guide targeted interventions to empower women and reduce IPV in developing countries.

To fully grasp the association between women's empowerment and IPV in the West African context, where patriarchal norms are shared, the prevalence of microfinance programs, and structural barriers suggest some similarities, West Africa's unique cultural, economic, and social dynamics call for deeper investigation. The region's youthful demographics, rapid urbanization, widespread conflict and violence, and variations in women's autonomy underscore the importance of examining how empowerment interacts with these specific contexts to influence IPV outcomes.

This is also because studies from other regions provide mixed findings, highlighting the complexity of these relationships. For example, in India, women with higher levels of education or income than their husbands are more likely to experience both frequent and severe IPV than women with lower education or income levels are (Pathak, 2022; Weitzman, 2014). Similarly, in Turkey, income disparity within households plays a critical role: Women who are the sole earners face an elevated risk of economic, physical, and sexual IPV compared with women whose income is either similar to or lower than that of their partners (Kayaoglu, 2022). These findings suggest that deviations from traditional gender roles in economic and educational contributions can exacerbate IPV risk in patriarchal societies.

Researchers have observed similar patterns in Sub-Saharan Africa. An analysis of data from 25 demographic and health surveys (DHSs) conducted across 15 sub-Saharan African countries revealed that higher education levels for both partners and increased household wealth were associated with a reduced risk of IPV. However, when only the woman was employed—notably if her earnings exceeded her partner's—the risk of IPV increased (Stockl et al., 2021). This finding highlights how economic empowerment for women, when not accompanied by shifts in cultural and social norms, may inadvertently increase IPV risk by challenging entrenched notions of male dominance in economic decision-making.

Other intervening variables, such as age, parity, and marriage characteristics, further complicate the relationship between empowerment and IPV. For example, in Bangladesh, older cohorts of more empowered women were more likely to experience physical violence than less empowered younger women were, potentially reflecting generational differences in societal expectations and resistance to changing gender norms. Additionally, childless

women with lower empowerment levels face a greater risk of IPV than do more empowered women with male children do, emphasizing the role of reproductive and familial expectations in shaping IPV risk (Sanawar et al., 2018).

These studies underscore the intricate and context-specific relationship between relative resources and IPV, revealing how dynamics around education and income interact with broader social and cultural factors. They also highlight the importance of examining these dynamics within the unique sociocultural and economic contexts of West Africa, where gender norms and structural inequalities may operate differently than they do in other regions. Understanding these interactions is critical for designing effective, culturally relevant interventions to empower women and reduce IPV.

Theoretical and Conceptual Framework

Relative resources theory, proposed by Goode (1971), posits that disparities in education, employment, and income between partners can significantly influence the likelihood of IPV. This theory suggests that men who lack traditional resources to assert dominance and power in a relationship may resort to violence as a compensatory mechanism. Specifically, when traditional gender norms are challenged—such as when a woman possesses more significant economic resources than her male partner—the risk of IPV increases. Violence is framed as an "alternative resource" for assisting masculinity and control when education, income, or employment fail to secure male dominance or when the traditional breadwinner role is perceived to be under threat (Macmillan & Gartner, 1999; Atkinson & Greenstein, 2005).

However, relative resources theory assumes that all men adhere to traditional gender roles or aspire to be primary breadwinners, oversimplifying the interplay between economic dynamics and IPV. A more nuanced perspective, gendered resource theory, extends this framework by emphasizing the moderating role of gender ideologies. According to this theory, the husband's beliefs about masculinity and femininity mediate the effect of resource disparities on IPV (Atkinson & Greenstein, 2005). Men with egalitarian gender ideologies may not perceive their partner's relative economic advantage as a threat, thereby reducing the likelihood of violence. Conversely, men with traditional or rigid gender ideologies may react violently when resource disparities undermine their sense of masculinity. This framework highlights the importance of considering the interplay between resource dynamics and individual attitudes toward gender roles.

We adopt a community-level perspective to complement these individual-level theories and capture the broader structural and cultural context. This approach acknowledges that socioeconomic conditions and patriarchal structures at the community level profoundly shape women's risk of IPV. Women in socioeconomically disadvantaged communities—characterized by high poverty rates, limited access to education, and patriarchal norms—face heightened risks of IPV. For example, in many areas of West Africa, women do not have the freedom to choose their marriage partners and are often forced into early marriages (Morrell et al., 2012). Norms surrounding violence in families tend to change more slowly in rural areas than in urban centers because of stronger community cohesion, slower access to modernization, and entrenched cultural practices (Murphy et al., 2021).

Community-level factors such as poverty, unemployment, and limited access to education exacerbate power imbalances between men and women, reinforcing traditional gender roles that justify male dominance and control (Conroy, 2014). These socioeconomic conditions also weaken social support networks and restrict women's access to resources and services that could mitigate abuse (Tessema et al., 2023; Cools & Kotsadam, 2017). Additionally, communities with high levels of inequality and rigid gender norms foster environments where violence is both more likely to occur and less likely to be condemned, perpetuating cycles of abuse (Tessema et al., 2023; Gao et al., 2021).

By integrating relative resources theory, gendered resource theory, and a community-level framework, this study provides a comprehensive understanding of how macrolevel social and economic forces intersect with individual and relational dynamics to shape women's vulnerability to IPV. This multilevel approach allows for a nuanced exploration of the interplay between individual empowerment, resource dynamics, and the broader sociocultural environment influencing IPV risk.

At the policy level, this multilevel conceptual framework suggests interventions that address individual- and community-level factors. For instance, financial independence programs and access to education can help reduce resource disparities between men and women. Moreover, community-wide campaigns can challenge harmful masculinity norms, promote egalitarian gender ideologies, and address the cultural acceptance of IPV. Integrating poverty alleviation initiatives with efforts to shift gender norms offers a pathway for reducing the structural drivers of IPV and empowering women in ways that mitigate their vulnerability. While this study focuses on relative resources theory and gendered resource theory as central frameworks for understanding the relationship between women's empowerment and IPV, it acknowledges the contributions of other theoretical perspectives. For example,

ecological systems theory considers the interplay of individual, relational, community, and societal factors in shaping IPV risk (Voith, 2019). Similarly, intersectionality emphasizes how overlapping identities such as race, ethnicity, class, and age intersect with gender to influence women's experiences of empowerment and IPV risk (Bagwell et al., 2020). These complementary perspectives enrich the understanding of IPV's structural and systemic drivers, situating this study's framework within a larger theoretical landscape.

While not comprehensive, this study highlights specific pathways through which relative resource dynamics and community-level factors contribute to IPV risk. Focusing on these mechanisms provides a foundation for targeted multilevel interventions and policies to reduce IPV and empower women in relational and structural contexts.

Methods

This study draws data from the most recent Demographic and Health Surveys (DHS) conducted in nine West African countries: Burkina Faso (2021), Mali (2018), Ghana (2022), Nigeria (2018), Benin (2018), Ivory Coast (2021), Gambia (2019), Liberia (2019), and Sierra Leone (2019). These surveys include information on experiences of intimate partner violence (IPV). Four selected countries, Burkina Faso, Mali, Benin, and Ivory Coast, are French-speaking nations in Francophone West Africa and are located in the central Sahel (the Ivory Coast and Benin are coastal countries but are bounded to the Sahel in North China). This region faces recurrent and expanding violence perpetrated by Islamic jihadist groups, which exacerbates the low status of women, has high fertility, and hinders women's empowerment. The other five countries, Ghana, Nigeria, Gambia, Sierra Leone, and Liberia, are English-speaking nations in Anglophone West Africa. Although they are making progress in their demographic transition, Nigeria also faces jihadist activities in North China, threatening its security, stability, and economy and endangering healthcare delivery. Sierra Leone and Liberia are two decades removed from brutal civil wars and rank very low on the UNDP's Human Development Index (UNDP, 2024).

DHS sampling involves a two-stage process. In the first stage, the DHS uses stratified sampling techniques to select clusters as the primary sampling unit (PSU). In the second stage, researchers systematically sampled households within each PSU and interviewed individual women between the ages of 15 and 49. Since 2000, the DHS has collected information on IPV, and the DHS has developed a standard questionnaire and methodology for gathering data on domestic violence derived from the modified Conflict Tactics Scale (Kishor, 2005; Straus, 2017). For countries that implemented the IPV module, the DHS randomly selected one woman per household for the

individual questionnaire in this module. Thus, the number of women who have information about domestic violence will always be less than the number of women selected for the complete DHS individual interview (DHS, 2008). Previously, a large part of the domestic violence module was implemented only for ever-married women and had questions about violence perpetrated by the current husband/partner for women who are currently married and the most recent husband/partner for women who are currently divorced, separated, or widowed. However, starting with surveys implemented in 2021, the DHS-8 domestic violence module now includes never-married women who, through two new screening questions, say that they currently have or have had an intimate partner.

Note that ever-married women self-report being married, divorced, separated, widowed, or living with or living with a man as if married—never-married women self-define who is an intimate partner. Nonetheless, trainers instruct interviewers to be careful not to include casual relationships without longer-term intimacy when they ask never-married women if they have or have an intimate partner. The inclusion of never-married women in intimate partner-related violence indicators implies that these indicators can no longer be called spousal violence indicators but are more accurately called intimate partner violence indicators (Hindin et al., 2008).

Measures

This study examined four outcomes, namely, whether the respondents experienced physical violence, sexual violence, or emotional violence, and a composite of all three in the 12 months prior to the survey, referred to as the IPV. The DHS derived these outcomes from the modified Conflict Tactics Scale, which is part of the domestic violence module in the DHS.

Physical violence was measured by asking women whether their partner had ever "pushed, shaken, slapped, kicked, thrown something at you, attempted to strangle or burn you, or threatened or attacked you with a knife, gun, or other weapon." Researchers classified women who reported at least one of these behaviors in the past 12 months as having experienced physical violence.

Researchers assessed **sexual violence** by asking women if they had ever forced them into unwanted physical intercourse or other sexual acts or if their partner had forced them to perform sexual acts through threats or in any other manner. Researchers classified women who reported at least one of these behaviors in the past year as having experienced sexual violence.

Emotional violence was measured by asking if their partner had ever been humiliated, insulted, made them feel bad, or threatened them with harm. We recorded all four outcomes as binary variables (0 = No, 1 = Often/Sometimes).

The first critical explanatory variable is the survey-based women's empowerment index (SWPER), developed specifically for African countries (Ewerling et al., 2017). This index includes three dimensions of empowerment: attitudes toward violence, social independence, and decision-making autonomy. The SWPER has been statistically validated and is a suitable measure of women's empowerment in low- and middle-income countries (Ewerling et al., 2020). This measure is associated with various maternal and child health interventions and modern contraception (Ewerling et al., 2017, 2020; 2021).

The SWPER index consists of fourteen variables, grouped as follows:

1. **The attitudes toward violence are as follows**: (i) being not justified if the wife goes out without telling the husband, (ii) beating is not justified if the wife neglects the child, (iii) beating is not justified if the wife argues with the husband, (iv) beating is not justified if the wife refuses sex with the husband, and (v) not being justified if the wife burns the food.
2. **Social independence**: (vi) Frequency of reading newspapers or magazines, (vii) women's education, (viii) age at cohabitation, (ix) age at first birth, (x) age difference (woman's age minus husband's age), (xi) education difference (woman's years of schooling minus husband's).
3. **Decision-making autonomy**: (xii) Who decides on the respondent's healthcare, (xiii) who decides on large household purchases, (xiv) who decides on visits to family or relatives?

Researchers categorize scores for the attitude toward violence domain as low (≤ -0.700), medium (> -0.700 and ≤ 0.400), and high (> 0.400), with high scores indicating strong rejection of violence and low scores indicating strong acceptance of violence. Researchers categorized scores for social independence as low (≤ -0.559), medium (> -0.559 and ≤ 0.293), or high (> 0.293). For decision-making and autonomy, researchers categorize scores as low (≤ -1.000), medium (> -1.000 and ≤ 0.600), or high (> 0.600) (Ewerling et al., 2017).

The second critical explanatory variable is community-level socioeconomic characteristics, including aggregate education, employment, and poverty measures.

1. We represented **community-level education** by the percentage of women in the community with secondary or higher education. Community-level education was calculated by aggregating individual educational attainment within each primary sampling unit (PSU), and we then categorized the mean proportion of educated women into low, medium, and high education levels for each community.

2. We coded **community-level employment** by the percentage of women working in the community. It was derived by calculating the average employment status of women within each PSU and then categorizing the mean scores into low, medium, and high to represent the level of women's employment within the community.
3. We measured **community-level poverty** as the percentage of poor women in the community. Community-level poverty was calculated by aggregating individual poverty status within each PSU and categorizing the resulting mean scores into low, medium, and high to reflect the community's poverty level.

These community-level variables are associated with women's status and reproductive outcomes (Kravdal, 2002; Adedini et al., 2014).

This study acknowledges the potential limitation of aggregating individual-level data within each primary sampling unit (PSU), which assumes homogeneity in characteristics such as education, poverty, and employment levels. In practice, however, PSUs with similar average educational attainment and employment levels may still exhibit substantial intracommunity variation, affecting the accuracy of community-level representations. To address this, we employed multilevel modeling via hierarchical logistic regression in Stata, utilizing the *meqrlogit* command to analyze the relationships between empowerment and community-level variables and covariates while accounting for the nested structure of the data.

We also included several **covariates** in the model that have been demonstrated in the literature to influence IPV, spouses' marital control behaviors, partners' alcohol consumption, exposure to interparental violence, women's relative occupational status (compared with their husband/partner), whether the husband works, women's educational attainment (categorized as no education, primary education, and secondary or higher), household wealth status (using the DHS wealth index), rural or urban residence, and respondents' age group.

Statistical Model

To analyze the data, we first conducted descriptive statistics (frequencies and crosstabulations with Pearson chi-square tests) to explore potential associations between the empowerment domains, community characteristics, and intimate partner violence (IPV) measures. Next, we used multilevel modeling via hierarchical logistic regression to assess the significance of these associations while controlling for covariates.

Given the hierarchical nature of the data and the complex sampling design, we specified individuals as Level 1 units and primary sampling units (PSUs) as Level 2 clusters/community level. The analysis adjusts for hierarchical dependencies to provide robust estimates of the effects of predictors on the outcome variable.

Sampling weights were incorporated to account for the complex survey design and ensure that the results represented the underlying population (women who completed the domestic violence module). The weights were generated by first aggregating individual weights at the PSU level to calculate the total weights for each PSU. The total weight for each PSU was then normalized on the basis of its size.

The PSU weights were saved separately and merged into the individual dataset for multilevel models. Finally, we used the *meqrlogit* command in Stata, incorporating weights to account for design effects and varying selection probabilities across clusters. This approach allows for proper estimation of standard errors and unbiased parameter estimates while accounting for hierarchical dependencies and sample design effects. *meqrlogi*c is preferred over *melogit,* as it allows for greater flexibility in specifying the integration method for random effects, which can be advantageous in achieving more accurate and computationally efficient estimates (Raudenbush, 2002; Rabe-Hesketh & Skrondal, 2012).

We conducted multivariate analysis with four models:

1. **Model 0**: without any predictors.
2. **Model 1** includes the three dimensions of empowerment (SWPER).
3. **Model 2**: Adds the community-level variables.
4. **Model 4**: Adds all the covariates.

We assessed multicollinearity among the variables via the variance inflation factor (VIF) and found no significant collinearity issues. We present adjusted odds ratios with 95% confidence intervals, considering a significance level of $p < 0.05$.

Results

Descriptive Findings

Table 1 summarizes the descriptive statistics of the variables included in the analysis. Approximately 15% of the women reported experiencing physical violence in the past 12 months, 27% reported experiencing emotional violence, and 5% reported experiencing sexual violence. Among the empowerment indicators, rejecting violence against women was the most prevalent, with 59% of women demonstrating high levels of negative attitudes toward such violence. Approximately 32% of women reported high levels of decision-making autonomy, whereas only 24% reported high levels of social autonomy.

For community-level characteristics, 38% of communities had a high proportion of women with secondary or higher education, whereas 30% had no education. Communities with low poverty levels accounted for 39%, whereas 32% of women, on average, were employed in these communities.

Regarding the covariates, 41% of the women reported controlling behaviors by their spouses. A majority (90%) of the male partners worked outside the household. Additionally, 22% of the male partners reported consuming alcohol, and 12% of the women witnessed interparental violence during their childhood.

At the individual level, 40% of women had attained secondary or higher education, whereas 44% had never attended school. Approximately 35% of the sample lived in poverty, as measured by the wealth index. Most women (72%) were between 25 and 49 years old.

Table 2 presents the bivariate relationships between IPV and the explanatory variables. Women with low empowerment in rejecting violence were significantly more likely to experience IPV in all its forms, with rates decreasing as empowerment levels increased. For example, high empowerment corresponded to the lowest IPV rates: physical (11.6%), emotional (23.5%), and sexual (4.0%).

Similarly, higher levels of social autonomy were consistently associated with lower IPV rates. Women with high autonomy reported the lowest IPV rates: physical (12.7%), emotional (23.9%), and sexual (3.8%). Decision-making autonomy was significant only for physical violence, with 14% of women who participated in decision-making reporting physical abuse.

Women in communities with lower poverty rates reported a lower IPV incidence than did those in medium- or high-poverty communities did, linking community-level poverty to IPV. However, sexual violence was not significantly associated with community poverty levels.

Higher education levels were associated with a lower prevalence of IPV, particularly emotional violence and overall IPV, although not sexual violence. Communities with higher employment levels had slightly higher IPV rates, especially for emotional violence, possibly reflecting tensions related to changing economic dynamics. Among the covariates, controlling behaviors by partners was strongly associated with higher IPV rates across all forms (e.g., physical: 22.3% vs. 7.7% for women without controlling partners). Exposure to interparental violence during childhood was also significantly correlated with IPV, with exposed women reporting higher rates (physical: 33.7%; emotional: 47.2%; sexual: 9.3%). Partner alcohol consumption was another key predictor, with women whose partners drank alcohol experiencing markedly higher IPV rates than those whose partners did not.

Figure 1 illustrates the varying levels of IPV prevalence across nine West African countries. Sierra Leone has the highest prevalence at approximately 34.2%, followed by Gambia and the Ivory Coast at 28.3% and 27.8%, respectively. Ghana, Mali, and Liberia have moderate levels of IPV, ranging from 23% to 24.4%. Benin and Burkina Faso have lower prevalence rates, approximately 20.9% and 19.1%, respectively, whereas Nigeria has the lowest prevalence, at 12.4%. These findings highlight significant disparities in IPV prevalence within the region, underscoring the need for targeted interventions and policies to address IPV in the most affected countries.

Associations between Dimensions of the SWPER Index and Physical Violence

Table 3 presents the results of the associations between the dimensions of the SWPER Index and physical violence in the last 12 months.

Model 0: The baseline model, which includes no predictor variables (intercept only), shows that the odds of experiencing physical violence in the past 12 months are 0.17 (95% CI: 0.16, 0.17). This result is statistically significant ($p < 0.001$). Expressed as a probability, 14.3% of the population experienced physical violence in the last 12 months. The random intercept at the PSU level is 0.11 and statistically significant, indicating variability in the baseline odds across different PSUs.

Model 1: This model includes measures of women's empowerment. Women who reject violence against women at medium levels have a 9.9% decrease in the odds of experiencing physical violence (odds = 0.90; 95% CI: 0.83, 0.98), which is statistically significant ($p < 0.05$). The odds decrease further at higher levels of rejecting attitudes toward violence (odds = 0.53; 95% CI: 0.50, 0.56). Social autonomy is statistically significant at both medium and higher levels of empowerment. At medium levels, it increases the odds of physical violence (odds =

1.07; 95% CI: 1.00, 1.14), whereas at higher levels, it decreases the odds (odds = 0.88; 95% CI: 0.82, 0.96). Higher levels of decision-making power increase the risk of violence (odds = 1.15; 95% CI: 1.07, 1.23).

Model 2: This model includes measures of women's empowerment and community-level socioeconomic characteristics. All three measures of empowerment are statistically significant at higher levels. The odds decrease further at higher levels of rejecting attitudes toward violence (odds = 0.52; 95% CI: 0.49, 0.56). Higher levels of social autonomy decrease the odds of physical violence (odds = 0.87; 95% CI: 0.80, 0.94), whereas higher levels of decision-making power increase the risk of violence (odds = 1.12; 95% CI: 1.04, 1.20).

Community characteristics increase the likelihood of physical violence. Women in communities with middle levels of education had a 22.9% increase in odds (odds = 1.23; 95% CI: 1.14, 1.33), and those in communities with high levels of education had a 26.1% increase (odds = 1.26; 95% CI: 1.13, 1.41). Women in communities with middle levels of poverty have a 12.9% increase in odds (odds = 1.13; 95% CI: 1.03, 1.24), and those in communities with high levels of poverty have an 18.7% increase (odds = 1.19; 95% CI: 1.07, 1.32). Similarly, women in communities with middle levels of employment have a 15.7% increase in odds (odds ratio = 1.16; 95% CI: 1.07, 1.25), and those in communities with high levels of employment have a 29.6% increase (odds ratio = 1.30; 95% CI: 1.20, 1.40).

The likelihood ratio test indicates that the mixed-effects model fits significantly better than a standard logistic regression model ($p < 0.0001$).

Model 3: The complete model incorporates covariates, empowerment, and community-level variables. Women who reject violence against women at high levels have a 34.4% decrease in the odds of experiencing physical violence (odds = 0.64; 95% CI: 0.56, 0.72), which is statistically significant ($p < 0.05$). Social autonomy is no longer statistically significant. Decision-making power at both medium and high levels decreases the odds of physical violence. The medium level results in a 24.2% decrease in odds (odds = 0.76; 95% CI: 0.66, 0.86), and the high level results in a 24.9% decrease (odds = 0.75; 95% CI: 0.66, 0.85).

Among the covariates, women with controlling partners had the highest odds of experiencing physical violence—5.73 times higher (95% CI: 4.98, 6.60). Exposure to interparental violence increases the odds by 150% (odds = 2.50; 95% CI: 2.22, 2.81). Other significant factors include age group (older women decrease the odds), residence (rural residence increases the odds), and when the husband works, the odds of violence decrease. Having a husband who drinks alcohol is associated with increased odds of violence (odds = 2.31; 95% CI: 2.10, 2.61). If both partners work, the odds of physical violence are 1.12 times greater (95% CI: 1.07, 1.40).

The only community-level measure statistically significant in the full model is poverty, which decreases the odds of violence. Women in communities with middle levels of poverty have a 21.3% decrease in odds (odds = 0.79; 95% CI: 0.64, 0.97), and those in communities with high levels of poverty have a 33.7% decrease (odds = 0.66; 95% CI: 0.51, 0.86). The likelihood ratio test indicates that the mixed-effects model fits significantly better than a standard logistic regression model ($p < 0.001$).

In summary, the comprehensive model highlights the importance of women's empowerment (rejecting violence and decision-making) and community-level poverty as mitigating factors of physical violence. Other significant risk factors include controlling and drinking behaviors of husbands, interparental violence, rural residence, both partners working, and the age group of the woman.

Associations between the Dimensions of the SWPER Index and Emotional Violence

Table 4 presents the results of the associations between the dimensions of the SWPER Index and emotional violence in the last 12 months.

Model 0: The baseline fixed effects model shows that the probability of experiencing emotional violence is approximately 25.52% (odds = 0.34; 95% CI: 0.33, 0.35; $p < 0.001$). The random effect estimate (0.094) and standard error (0.011) suggest some intercept variability across different PSU groups. The likelihood ratio test indicates that the mixed-effects model fits the data significantly better than a model without random effects does.

Model 1: Both medium and higher levels of rejecting attitudes toward violence against women reduce the odds of emotional abuse. At the medium level, the odds of emotional violence for women who reject attitudes supporting violence against women are 0.92 times greater (95% CI: 0.858, 0.989) than those for women with low empowerment. At higher levels of empowerment, the odds are even lower (odds = 0.678; 95% CI: 0.641, 0.717). Both are statistically significant. At the medium level, social autonomy does not significantly affect the likelihood of experiencing emotional violence. High empowerment is associated with a 6.4% decrease in the odds of experiencing emotional violence (odds = 0.94; 95% CI: 0.88, 0.997). With respect to decision-making, both medium and high levels of empowerment increase the odds of emotional violence (odds = 1.07; 95% CI: 1.01, 1.14; odds = 1.11; 95% CI: 1.04, 1.17). Both are statistically significant.

Model 2: This model includes community-level variables. Higher attitudinal empowerment significantly reduces the odds of experiencing emotional violence (odds = 0.68; 95% CI: 0.64, 0.72). Higher social empowerment also reduces the odds of emotional violence (odds = 0.93; 95% CI: 0.88, 0.997), but medium social empowerment is

insignificant. Higher decision-making empowerment increases the odds of experiencing emotional violence (odds = 1.08; 95% CI: 1.02, 1.15). All community-level characteristics are significant in this model and increase the odds of emotional violence. Higher levels of community education, poverty, and work participation are associated with increased odds of experiencing emotional violence. This model suggests that both individual empowerment and the community context play significant roles in the likelihood of experiencing emotional violence.

Model 3: In the final model, two of the three dimensions of empowerment are significantly associated with reduced emotional violence. Rejecting violence against women continues to significantly reduce the odds of experiencing emotional violence (odds = 0.761; 95% CI: 0.68, 0.85). Social empowerment does not have a significant effect, and decision-making empowerment at medium and high levels reduces the odds of experiencing emotional violence (odds = 0.820; 95% CI: 0.73, 0.93 and odds = 0.75; 95% CI: 0.67, 0.85, respectively).

With respect to the covariates, experiencing partner-controlled behavior and alcohol consumption significantly increased the odds of experiencing emotional violence (odds = 5.60; 95% CI: 4.94, 6.36; odds = 2.55; 95% CI: 2.28, 2.86). Experiencing interparental violence and rural residence also significantly increased the risk (odds = 2.061; 95% CI: 1.84, 2.31 and odds = 1.22; 95% CI: 1.03, 1.44, respectively). If both partners are employed, the odds of experiencing emotional violence are 1.17 times greater (95% CI: 1.04, 1.32). In contrast, if the husband/partner is employed, higher education reduces the odds of experiencing emotional violence (odds = 0.734; 95% CI: 0.54, 0.996 and odds = 0.86; 95% CI: 0.74, 0.99, respectively).

Only high community poverty reduces the risk of emotional violence at the community level (odds = 0.75; 95% CI: 0.59, 0.96). The random intercept variance is significant, indicating variability across different PSU groups. The log-likelihood is highly significant, suggesting that the mixed-effects model fits the data significantly better than the model without random effects. In summary, the analysis highlights the importance of individual empowerment, personal and spousal characteristics, and the community context in understanding the likelihood of experiencing emotional violence.

Associations between Dimensions of the SWPER Index and Sexual Violence

Table 5 presents the results of a mixed-effects logistic regression model for sexual violence.

Model 0: The baseline model, which includes only the intercept and no other variables, shows that the odds of experiencing sexual violence are approximately 4.77% (odds = 0.048; 95% CI: 0.045, 0.05). This model is highly

significant ($p < 0.001$). The significant random effect suggests meaningful variation between the PSU groups, justifying the use of a mixed-effects model.

Model 1: This model shows the results of individual empowerment measures on sexual violence. High attitudinal empowerment significantly reduces the odds of experiencing sexual violence (odds = 0.68; 95% CI: 0.61, 0.77). High social empowerment also significantly reduces the odds (odds = 0.84; 95% CI: 0.73, 0.96). Medium levels of empowerment in all three dimensions do not significantly affect the odds of experiencing sexual violence.

Model 2: This model adjusts for community-level variables. High attitudinal empowerment significantly reduces the odds of experiencing sexual violence (odds = 0.69; 95% CI: 0.61, 0.78). High social empowerment is marginally significant ($p < 0.053$) in reducing the odds (odds = 0.871; 95% CI: 0.76, 1.00). Medium levels of empowerment in all three dimensions do not significantly affect the odds of experiencing sexual violence.
At the community level, middle-community poverty significantly increased the odds of experiencing sexual violence (odds = 1.24; 95% CI: 1.057, 1.454). Other community-level characteristics (education and work) do not have significant effects.

Model 3: In the full model, high attitudinal and decision-making empowerment significantly reduce the odds of experiencing sexual violence. Compared with those who do not reject violence against women, women who reject violence against women have 33.1% lower odds of experiencing sexual violence (odds = 0.67; 95% CI: 0.54, 0.83). Similarly, women who reported high empowerment in decision-making had a 30.60% reduction in the odds of experiencing sexual violence (odds = 0.69; 95% CI: 0.55, 0.87).

The significant covariates in this model are similar to those in the previous models. Experiencing any partner controlling behavior, partner alcohol consumption, and experiencing parental violence all increase the odds of experiencing sexual violence. Conversely, older women and those with secondary and higher education levels have reduced odds.

Finally, as in previous models, high community poverty reduces the odds of experiencing sexual violence (odds = 0.53; 95% CI: 0.33, 0.85). This model underscores the importance of individual empowerment, personal and spousal characteristics, and the community context in understanding the likelihood of experiencing sexual violence.

Associations between the Dimensions of the SWPER Index and Composite Intimate Partner Violence (IPV)

Table 6 presents the results of the composite measure of physical, emotional, and sexual violence, referred to as IPV. **Model 0**: Without considering any other variables, approximately 8.98% of the population experienced IPV in the past year (odds = 0.090; 95% CI: 0.09, 0.09). This result was statistically significant ($p < 0.0001$). The random intercept variance for PSU is estimated at 0.071 (SE = 0.008), indicating some variability across different PSU groups.

Model 1: Women who strongly reject attitudes supporting violence against women have reduced odds of experiencing IPV (odds = 0.75; 95% CI: 0.711, 0.781), indicating a 25.48% reduction. This result is statistically significant ($p < 0.001$). However, at medium levels of social autonomy, the odds of experiencing IPV increase (odds = 1.161; 95% CI: 1.11, 1.22; $p < 0.001$). Similarly, higher levels of decision-making empowerment also increase the odds (odds = 1.078; 95% CI: 1.03, 1.13), indicating a 7.83% increase. Both relationships are statistically significant.

Model 2: Including community-level variables, high empowerment by rejecting attitudes supporting violence against women remains significant and reduces the odds of experiencing IPV (odds = 0.74; 95% CI: 0.71, 0.78), indicating a 25.66% reduction. Medium levels of social empowerment significantly increase the odds of experiencing IPV (odds = 1.129; 95% CI: 1.08, 1.18), whereas high social empowerment does not have a significant effect. Decision-making empowerment does not significantly affect IPV at either medium or high levels. Community-level characteristics show that higher levels of community education, poverty, and work participation are associated with increased odds of experiencing IPV. For example, high community poverty increases the odds by 1.1 times (odds = 1.10; 95% CI: 1.02, 1.18), and higher levels of employment increase the odds by 1.40 times (odds = 1.40; 95% CI: 1.33, 1.48). All the relationships are statistically significant.

Model 3: In the full model with all covariates, high attitudinal empowerment (rejecting attitudes supporting violence against women) and decision-making empowerment significantly reduce the odds of experiencing IPV (odds = 0.73; 95% CI: 0.65, 0.82 and odds = 0.74; 95% CI: 0.66, 0.82, respectively), indicating a 27% reduction in both measures of empowerment.

With respect to covariates, experiencing partner controlling behavior, alcohol consumption, parental violence, both partners working, and rural residence increase the odds of experiencing IPV. Conversely, the odds decrease when only the husband works and for older women.

Consistent with previous models, higher community poverty significantly reduces the odds of experiencing IPV (odds = 0.64; 95% CI: 0.51, 0.82), whereas medium community work participation increases the odds (odds = 1.19; 95% CI: 1.04, 1.36).

Discussion

The latest United Nations data confirm that achieving SDG 5 in terms of gender equality by 2030 is unlikely (UN Women, 2022). Slow progress, reversals due to COVID-19, and backlash against women's sexual and reproductive health and rights have stalled efforts to reduce intimate partner violence (IPV). These setbacks underscore a critical lack of evidence-based research, especially in Sub-Saharan Africa. This study addresses this gap by analyzing the association between women's empowerment, measured via the Women's Empowerment Index (SWPER, community-level factors, resource disparities between women and their male partners, and IPV in Western Africa, a region shaped by past civil conflicts and ongoing jihadist activities where violence against women is widespread (Annan, 2014; Horn et al., 2014; Onditi & Odera, 2021).

Our results show that the prevalence of IPV varies across countries in Western Africa. Sierra Leone stands out as a hotspot, with a 34% prevalence rate, whereas Nigeria has the lowest rate at 12%. Civil wars and violent conflicts in countries such as Sierra Leone (and Liberia) may have normalized violence, particularly against women (Horn et al., 2014; Donkah et al., 2024). This pattern aligns with findings from other postconflict regions, such as Uganda and Angola (Tumwesigye, 2012; Yaya et al., 2019).

Two dimensions of the SWPER index were significantly and consistently associated with IPV. First, women who rejected attitudes supporting violence against women at high levels were less likely to report experiencing IPV, including physical, sexual, and emotional violence. This finding aligns with previous research highlighting how societal attitudes and behaviors normalize violence through observation and interaction within families, peer groups, and social networks (Bandura, 1977; Cinquegrana, Marini & Galdi, 2022; Aboagye et al., 2021). Supportive attitudes toward IPV have been linked to prior experiences such as childhood violence, partner infidelity, and controlling behaviors (Copp et al., 2019; Tenkorang & Owusu, 2018). The region's history of pervasive violence, including civil wars and ongoing jihadist activities, may have desensitized communities, fostering aggressive behaviors that extend into domestic settings (Horn et al., 2014).

Similarly, women with high decision-making autonomy were significantly less likely to experience IPV across all three typologies studied: physical, sexual, and emotional violence. Decision-making autonomy—either

joint or individual—has been linked to reduced IPV risk in prior studies, with joint decision-making fostering empowerment and healthier relationship dynamics (Zegenhagen et al. 2019; Tenkorang, 2018). Our findings reinforce the importance of empowering women to participate in household decisions as a protective factor against IPV.

In contrast to much of the literature, our study reveals that higher aggregate levels of community-level poverty are associated with reduced IPV likelihood across the three types of IPV. This finding diverges from studies suggesting that community-level poverty exacerbates IPV risk due to vulnerabilities such as inadequate living conditions and food insecurity (Edwards et al., 2014; Gibbs et al., 2018). A possible explanation is that shared economic hardship may foster stronger community ties and collective responsibility, leading to greater empathy and reduced tolerance for violence. However, this protective effect may not extend to rural areas with extreme poverty, where stressors such as unemployment and limited access to services exacerbate tensions and increase IPV risk. Further research is needed to unpack these nuances and clarify the role of poverty and IPV in different contexts.

Interestingly, when both the husband and the wife are employed, the odds of IPV increase by 22%. This finding aligns with relative resource theory, which posits that increases in women's financial resources may challenge traditional gender roles, prompting partners to reassert their status through violence (Kaukinen, 2004). Dual employment often leads to increased controlling behaviors by husbands, as evidenced in this study, reflecting the complex interplay of economic roles and household power dynamics (Del Campo & Steinert, 2020).
Finally, consistent with global findings, having a husband who drinks alcohol significantly increases the odds of experiencing IPV (Ramsoomar et al., 2021; Greene et al., 2020). This highlights the pervasive impact of substance abuse on IPV risk, underscoring the importance of addressing alcohol use within broader strategies to reduce IPV.

In summary, this study provides nuanced insights into the intersection of women's empowerment, socioeconomic context, and IPV in Western Africa. Highlighting country-specific trends, community-level influences, and household dynamics contributes to the growing evidence needed to inform targeted interventions and policy strategies.

Implications for Policy and Practice

Attaining SDG 5 goals in West Africa requires addressing the structural, cultural, and economic drivers of intimate partner violence (IPV). On the basis of this study, integrating community-based education into primary care systems from the village to district levels is essential. These campaigns should target men and women, leveraging

community leaders, faith-based organizations, and local media for legitimacy and community ownership. Community leaders wield significant influence in these settings, as they are often trusted figures who shape social norms and influence community behavior. Their involvement in IPV prevention initiatives can enhance the acceptance and effectiveness of these programs, as they can foster community-wide support and challenge harmful cultural practices that perpetuate IPV. Engaging community leaders can also help bridge gaps in communication and ensure that educational messages resonate with local values and practices.

Programs that enhance women's skills in financial literacy, household management, and marital negotiation can increase confidence and decision-making participation in a marital union. Such interventions should prioritize married or cohabiting women, particularly in rural and conflict-affected regions where empowerment opportunities may be different and limited. Male engagement programs are also crucial, especially in conflict zones, to address the psychological effects of shifting the economic roles of men.

Although community poverty has complex links to IPV, interventions should build on protective factors such as social cohesion. Initiatives such as village savings and loan associations (VSLAs) and community development projects can strengthen solidarity, increase social capital, and reduce stressors that contribute to IPV in poorer communities. Community-based alcohol reduction programs combined with family counseling can mitigate significant IPV risk factors. Additionally, regulating alcohol sales, though potentially contentious, should be explored in rural and conflict-prone areas.

Finally, governments in West Africa (represented by ECOWAS—the Economic Community of West African States) must strengthen legal frameworks in member countries and encourage all other countries that are not ECOWAS members to do likewise. This will create the context to protect women and vigorously enforce existing laws. Collaboration with member countries is crucial to harmonize policies and ensure regional accountability.

Strengths and Limitations

To the best of our knowledge, this study is among the first in West Africa to examine the relationships among the SWPER index, community-level factors, and intimate partner violence (IPV) via multilevel modeling. Thus, this study offers valuable insights and expands the literature on women's empowerment and IPV prevention in Sub-Saharan Africa.

Using a large, diverse dataset encompassing multiple countries enhances the statistical strength of the findings and supports their generalizability across the region. However, limitations exist. The SWPER index applies

exclusively to partnered or married women and excludes key empowerment indicators such as property ownership. Additionally, the reliance on self-reported data introduces the potential for recall bias. The cross-sectional design of the Demographic and Health Surveys (DHS) further limits the ability to establish causality.

Despite these limitations, this study contributes to the discourse on IPV prevention and women's empowerment in West Africa.

Conclusion

This study illuminates the intricate relationships among women's empowerment, community dynamics, and IPV in West Africa. By leveraging the SWPER index, we demonstrate that rejecting violence-supportive attitudes and fostering decision-making autonomy are critical to reducing IPV. However, the interplay of economic roles, community poverty, and cultural norms underscores the complexity of IPV prevention in the region. Our findings highlight the urgency of integrating targeted, culturally resonant interventions into broader development strategies to achieve SDG 5 goals and protect women's rights.

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Table 1: Descriptive Statistics of All Variables in Pooled Sample of Intimate Partner Violence

Variable	Percent
Dependent Variables	
Physical Violence	
Yes	14.92
No	85.08
Emotional Violence	
Yes	26.57
No	73.43
Sexual Violence	
Yes	4.93
No	95.07
Independent Variables	
Empowerment Variables	
Attitude to Violence	
Low empowerment	25.3
Medium empowerment	15.91
High empowerment	58.8
Social Independence/Autonomy	
Low empowerment	44.73
Medium empowerment	31.35
High empowerment	23.92
Decision-Making	
Low empowerment	37.23
Medium empowerment	31.25
High empowerment	31.52
Community-level characteristics	
Percentage of women poor	
Low poverty	39.31
Medium poverty	31.04
High poverty	29.64
Percentage of women educated	
Low education	29.57
Medium education	32
High education	38.43
Percentage of women working	
Low employment	32.87
Medium employment	34.82
High employment	32.31
Covariates	
Experienced Partner Controlling Behavior	
Yes	40.84
No	59.16
Exposed to Interparental Violence	
Yes	12
No	88
Partner Alcohol Consumption	
Yes	22.45
No	77.55
Partner Works	
Yes	89.59
No	10.41
Both Work	
Yes	44.92
No	55.08
Educational Level	
Never been to school	44.43
Primary	15.64
Secondary	39.93
Wealth Index	
Poorest	16.9
Poorer	18.3
Middle	19.91
Richer	21.65
Richest	23.24
Age Group	
18-24	28.37
25-34	36.01
35-49	35.62
Place of Residence	
Urban	46.16
Rural	53.84

Source: Demographic and Health Surveys of Countries in West Africa (Burkina-Faso, Benin, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone) 2018-2022

Note: Weighted percentages (%) reported

Table 2: Distribution of Intimate Partner Violence (IPV) Across Explanatory Variables

Variables	Physical Violence (%)	Emotional Violence (%)	Sexual Violence (%)	Any IPV (%)
Empowerment Variables				
Attitude to Violence	<0.001	<0.001	<0.001	<0.001
Low Empowerment	20.2	31.2	5.8	36.4
Medium Empowerment	17.7	29.4	5.2	34.6
High Empowerment	11.6	23.5	4	26.8
Social Independence/Autonomy	<0.001	<0.001	0.005	<0.001
Low Empowerment	14.8	26.6	5	31
Medium Empowerment	16.1	27.9	4.7	32.1
High Empowerment	12.7	23.9	3.8	27.4
Community-Level Characteristics				
Percentage of Women Poor	<0.005	<0.001	NS	0.056
Low Poverty	14	24.8	4.7	29.7
Medium Poverty	15.9	29.1	5.5	32.6
High Poverty	15	26	4.6	30.2
Percentage of Women Educated	<0.005	<0.005	NS	<0.001
Low Education	14.3	26.5	4.8	33.2
Medium Education	16.4	28.2	5.5	35.3
High Education	14.2	25.1	4.6	29.3
Percentage of Women Working	<0.005	<0.001	NS	<0.001
Low Employment	13.6	23.3	4.7	27.8
Medium Employment	14.9	27.8	5.3	30.5
High Employment	16.1	28.4	4.8	31.2
Covariates				
Experienced Partner Controlling Behavior	<0.001	<0.001	<0.001	<0.001
Yes	22.3	37.7	7.6	42
No	7.7	11	1.3	12.7
Exposed to Interparental Violence	<0.001	<0.001	<0.001	<0.001
Yes	33.7	47.2	9.3	40.1
No	14.5	23.9	4.4	25.8
Partner Alcohol Consumption	<0.001	<0.001	0.035	<0.001
Yes	39.5	46.3	9.7	52.6
No	14.5	24	4.1	29.9

Source: Demographic and Health Surveys of Countries in West Africa (Burkina-Faso, Benin, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone) 2018-2022

Note: Weighted percentages (%) reported. P-values indicate statistical significance for differences across IPV types

NS= Not Significant

Decision-making was only significant for Physical violence and was excluded form this table.

Table 3: Multilevel Logistic Regression Results for Empowerment Dimensions, Community Characterstics and Covariates and Physical Violence

Variable	Model 0 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
Fixed Effect Model				
Independent Variables				
Empowerment Variables				
Attitude to Violence				
Low empowerment (ref)				
Medium empowerment		0.90** (0.83, 0.98)	0.89** (0.82, 0.97)	0.97 (0.89, 1.06)
High Empowerment		0.53*** (0.49, 0.56)	0.52*** (0.49, 0.56)	0.64*** (0.59, 0.68)
Social Independence/Autonomy				
Low empowerment (ref)				
Medium empowerment		1.07** (1.00, 1.15)	1.05	1.00 (0.93, 1.07)
High empowerment		0.88** (0.82, 0.96)	0.87** (0.80, 0.94)	0.87 (0.79, 0.96)
Decision-Making				
Low empowerment (ref)				
Medium empowerment		1.00 (0.93, 1.08)	0.99 (0.92, 1.06)	0.93*** (0.86, 1.01)
High **empowerment**		1.15*** (1.23)	1.12** (1.04, 1.20)	1.03*** (0.94, 1.12)
Community-level characteristics				
Percentage of women who are poor				
Low poverty (ref)				
Medium poverty			1.13** (1.03, 1.24)	0.78** (0.64, 0.97)
High poverty			1.19 (1.13, 1.41)	0.66** (0.51, 0.86)
Percentage of women who are educated				
Low education (ref)				
Medium education			1.23*** (1.14, 1.33)	1.03 (0.64, 0.97)
High education			1.26*** (1.13, 1.41)	0.97 (0.78, 1.21)
Percentage of women working				
Low employment (ref)				
Medium employment			1.16*** (1.07, 1.25)	1.06 (0.92, 1.23)
High employment			1.30*** (1.20, 1.40)	0.97 (0.83, 1.14)
Covariates				
Experienced Partner Controlling Behavior				
No				
Yes				5.33*** (5.0, 6.60)
Exposed to Interparental Violence				
No				
Yes				2.50*** (2.22, 2.81)
Partner Alcohol Consumption				
No				
Yes				2.32*** (2.06, 2.61)
Partner Works				
No				
Yes				0.67** (0.49, 0.93)
Both Work				
No				
Yes				1.23** (1.08, 1.39)
Educational Level				
Never been to school (ref)				
Primary				1.10 (0.95, 1.26)
Seconday/Higher				1.12 (1.07, 1.40)
Wealth Index				
Poorest (ref)				
Poorer				1.03 (0.89, 1.20)
Middle				1.09 (0.97, 1.30)
Richer				1.13 (0.90, 1.42)
Richest				1.10 (0.84, 1.44)
Age Group				
18-24 (ref)				
25-34				0.85** (0.74, 0.98)
35-49				0.56*** (0.48, 0.65)
Place of Residence				
Urban (ref)				
Rural				1.41*** (1.17. 1.68)
Random Effects Results				
Intercept	0.17*** (0.16, 0.17)	0.23*** (0.21, 0.25)	0.16*** (0.14, 0.18)	0.091**(0.06, 0.13)
PSU variance (95% CI)	0.12 (0.09, 0.15)	0.12 (0.09, 0.16)	0.115 (0.14, 0.18)	0.21 (0.14,0.30)
Wald Chi-square	Reference	444.95	542.33	1298.93
Model fitness				
Log-likelihood	-183	-157	-157.00	-4898.21
N	43,318	38,101	38101.00	10588.00
Number of clusters	1385	1384	1384.00	578.00

Source: Demographic and Health Surveys of Countries in West Africa (Burkina-Faso, Benin, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone) 2018-2022

$^{**}p < 0.05$, $^{***}p < 0.001$

Note: Odds ratios (OR) are shown with 95% confidence intervals (CI) in parentheses. Reference categories: Educational Level = Never been to school, Wealth Index = Poorest, Age Group = 18–24, Residence = Urban.

Table 4: Multilevel Logistic Regression Results for Empowerment Dimensions, Community Characterstics, Covariates and Emotional Violence

Variable	Model 0 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
Fixed Effect Model				
Independent Variables				
Empowerment Variables				
Attitude to Violence				
Low empowerment (ref)				
Medium empowerment		0.92** (0.85, 0.99)	0.92** (0.86, 0.99)	1.00 (0.87, 1.15)
High Empowerment		0.68*** (0.6, 0.72)	0.68*** (0.64, 0.72)	0.76*** (0.68, 0.85)
Social Independence/Autonomy				
Low empowerment (ref)				
Medium empowerment		1.04 (0.98, 1.09)	1.03 (0.97, 1.08)	1.03 (0.92, 1.15)
High empowerment		0.94** (0.88, 0.10)	0.93** (0.88, 0.10)	1.07 (0.93, 1.24)
Decision-Making				
Low empowerment (ref)				
Medium empowerment		1.07 (1.01, 1.13)	1.06 (0.91, 1.12)	0.82** (0.73, 0.93)
High empowerment		1.11** (1.04, 1.17)	1.08** (1.02, 1.15)	0.75*** (0.67, 0.85)
Community-level characteristics				
Percentage of women who are poor				
Low poverty (ref)				
Medium poverty			1.17*** (1.08, 1.26)	0.86 (0.71, 1.05)
High poverty			1.15** (1.05, 1.25)	0.75** (0.57, 0.96)
Percentage of women who are educated				
Low education (ref)				
Medium education			1.11** (1.04, 1.18)	0.96 (0.84, 1.09)
High education			1.14** (1.05, 1.25)	1.04 (0.84, 1.28)
Percentage of women working				
Low employment (ref)				
Medium employment			1.27*** (1.19, 1.35)	1.13 (0.99, 1.30)
High employment			1.34*** (1.26, 1.42)	1.04 (0.90, 0.13)
Covariates				
Experienced Partner Controlling Behavior				
No				
Yes				5.61*** (4.94, 6.36)
Exposed to Interparental Violence				
No				
Yes				2.06*** (1.84, 2.31)
Partner Alcohol Consumption				
No				
Yes				2.55*** (2.28, 2.85)
Partner Works				
No				
Yes				0.73** (0.54, 0.10)
Both Work				
No				
Yes				1.17** (1.04, 1.32)
Educational Level				
Never been to school (ref)				
Primary				1.10 (0.96, 1.25)
Seconday/Higher				0.86** (0.74, 0.10)
Wealth Index				
Poorest (ref)				
Poorer				1.06 (0.92, 1.22)
Middle				1.02 (0.86, 1.19)
Richer				1.08 (0.88, 1.34)
Richest				0.99 (0.77, 1.27)
Age Group				
18-24 (ref)				
25-34				0.91 (0.79, 1.04)
35-49				0.68*** (0.59, 0.78)
Place of Residence				
Urban (ref)				
Rural				1.22** (1.03, 1.44)
Random Effects Results				
Intercept	0.34***(0.33, 0.35)	0.41** (0.40, 0.44)	0.29*** (0.26, 0.33)	0.09 (0.06, 0.13)
PSU variance (95% CI)	0.09 (0.07, 0.12)	0.010 (0.08, 0.12)	0.09 (0.07, 0.12)	0.16 (0.11, 0.24)
Wald Chi-square	reference	238.49	368.02	1331.08
Model fitness				
Log-likelihood	-248	-217	-217.00	-536.00
N	43,223	38, 101	28101.00	10588.00
Number of clusters	1385	1384	1384.00	578.00

Source: Demographic and Health Surveys of Countries in West Africa (Burkina-Faso, Benin, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone) 2018-2022

$^{**}p < 0.05$, $^{***}p < 0.001$

Note: Odds ratios (OR) are shown with 95% confidence intervals (CI) in parentheses. Reference categories: Educational Level = Never been to school, Wealth Index = Poorest, Age Group = 18–24, Residence = Urban.

Table 5: Multilevel Logistic Regression Results for Empowerment Dimensions, Community Characterstics, Covariates and Sexual Violence

Variable	Model 0 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
Fixed Effect Model				
Independent Variables				
Empowerment Variables				
Attitude to Violence				
Low empowerment (ref)				
Medium empowerment		0.91 (0.78, 1.05)	0.91 (0.78, 1.06)	0.77** (0.59, 0.10)
High Empowerment		0.68*** (0.61, 0.77)	0.69*** (0.61, 0.78)	0.67*** (0.54, 0.83)
Social Independence/Autonomy				
Low empowerment (ref)				
Medium empowerment		0.95 (0.84, 1.06)	0.95 (0.85, 1.07)	1.04 (0.84, 1.30)
High empowerment		0.84** (0.73, 0.96)	0.87 (0.76, 1.00)	0.98 (0.73, 1.32)
Decision-Making				
Low empowerment (ref)				
Medium empowerment		1.08 (0.95, 1.22)	1.08 (0.95, 1.22)	0.84 (0.65, 1.04)
High empowerment		1.07 (0.95, 1.21)	1.08 (0.95, 1.23)	0.69** (0.55, 0.87)
Community-level characteristics				
Percentage of women who are poor				
Low poverty (ref)				
Medium poverty			1.24** (1.05, 1.45)	0.73 (0.50, 1.07)
High poverty			1.13 (0.94, 1.36)	0.53** (0.33, 0.85)
Percentage of women who are educated				
Low education (ref)				
Medium education			1.09 (0.95, 1.24)	1.00 (0.78, 1.29)
High education			0.99 (0.82, 1.20)	0.86 (0.57, 1.28)
Percentage of women working				
Low employment (ref)				
Medium employment			1.09 (0.96, 1.25)	1.22 (0.94, 1.57)
High employment			0.97 (0.85, 1.10)	0.89 (0.672, 1.18)
Covariates				
Experienced Partner Controlling Behavior				
No				
Yes				6.51*** (4.70, 9.04)
Exposed to Interparental Violence				
No				
Yes				1.32** (1.07, 1.63)
Partner Alcohol Consumption				
No				
Yes				2.63*** (2.16, 3.20)
Partner Works				
No				
Yes				1.27 (0.72, 2.24)
Both Work				
No				
Yes				0.84 (0.67, 1.50)
Educational Level				
Never been to school (ref)				
Primary				0.90 (0.70, 1.15)
Seconday/Higher				0.68** (0.51, 0.92)
Wealth Index				
Poorest (ref)				
Poorer				1.10 (0.85, 1.43)
Middle				0.95 (0.70, 1.30)
Richer				0.89 (0.59, 1.33)
Richest				0.88 (0.54, 1.44)
Age Group				
18-24 (ref)				
25-34				0.90 (0.70, 1.14)
35-49				0.64** (0.49, 0.84)
Place of Residence				
Urban (ref)				
Rural				1.34 (0.98, 1.84)
Random Effects Results				
Intercept	0.05*** (0.04, 0.05)	0.06*** (0.05, 0.07)	0.05*** (0.04, 0.06)	0.02*** (0.01, 0.05)
PSU variance (95% CI)	0.21 (0.15, 0.29)	0.23 (0.163, 0.33)	0.23 (0.16, 0.33)	0.39 (0.01, 0.05)
Wald Chi-square	Reference	57.68	74.84	
Model fitness				
Log-likelihood	-7743.00	-6602.00	-6593.57	-1904.80
N	39045.00	35016.00	36016.00	10.59
Number of clusters	1385.00	1384.00	1384.00	578.00

Source: Demographic and Health Surveys of Countries in West Africa (Burkina-Faso, Benin, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone) 2018-2022

$^{**}p < 0.05$, $^{***}p < 0.001$

Note: Odds ratios (OR) are shown with 95% confidence intervals (CI) in parentheses. Reference categories: Educational Level = Never been to school, Wealth Index = Poorest, Age Group = 18–24, Residence = Urban.

Table 6: Multilevel Logistic Regression Results for Empowerment Dimensions, Community Characterstics, Covariates and Intimate Partner Violence (IPV)

Variable	Model 0 OR (95% CI)	Model 1 OR (95% CI)	Model 2 OR (95% CI)	Model 3 OR (95% CI)
Fixed Effect Model				
Independent Variables				
Empowerment Variables				
Attitude to Violence				
Low empowerment (ref)		1.05 (0.99, 1.12)	1.04 (0.98, 1.11)	1.09 (0.95, 1.25)
Medium empowerment		0.75*** (0.71, 0.78)	0.74*** (0.71, 0.78)	0.73*** (0.66, 0.82)
High Empowerment				
Social Independence/Autonomy				
Low empowerment (ref)				
Medium empowerment		1.16*** (1.11, 1.21)	1.13*** (1.08, 1.18)	0.97 (0.87, 1.08)
High empowerment		1.04 (0.98, 1.09)	0.99 (0.94, 1.05)	0.93 (0.80, 1.07)
Decision-Making				
Low empowerment (ref)				
Medium empowerment		1.04 (0.99, 1.09)	1.02 (0.97, 1.07)	0.82** (0.73, 0.93)
High empowerment		1.08** (1.03, 1.13)	1.03 (1.02, 1.08)	0.73*** (0.66, 0.82)
Community-level characteristics				
Percentage of women who are poor				
Low poverty (ref)				
Medium poverty			1.12*** (1.05, 1.19)	0.77** (0.64, 0.93)
High poverty			1.10** (1.02, 1.18)	0.64*** (0.51, 0.82)
Percentage of women who are educated				
Low education (ref)				
Medium education			1.19*** (1.13, 1,26)	0.95 (0.83, 1.07)
High education			1.23*** (1.13, 1,32)	0.95 (0.77, 1.15)
Percentage of women working				
Low employment (ref)				
Medium employment			1.27***(1.20, 1.33)	1.19** (1.04)
High employment			1.40*** (1.33, 1.48)	1.00 (0.87, 1.15)
Covariates				
Experienced Partner Controlling Behavior				
No				
Yes				5.89*** (5.26, 6.60)
Exposed to Interparental Violence				
No				
Yes				2.30*** (2.06, 60)
Partner Alcohol Consumption				
No				
Yes				2.58*** (2.30, 2.89)
Partner Works				
No				
Yes				0.72** (0.54, 0.96)
Both Work				
No				
Yes				1.22** (1.09, 1.37)
Educational Level				
Never been to school (ref)				
Primary				1.08 (0.95, 1.23)
Seconday/Higher				0.96 (0.83, 1.11)
Wealth Index				
Poorest (ref)				
Poorer				1.06 (0.93, 1.21)
Middle				1.03 (0.88, 1.21)
Richer				1.18 (0.96, 1.44)
Richest				1.02 (0.80, 1.31)
Age Group				
18-24 (ref)				
25-34				0.90 (0.79, 1.02)
35-49				0.62*** (0.54, 0.71)
Place of Residence				
Urban (ref)				
Rural				1.46*** (1.24, 1.72)
Random Effects Results				
Intercept	0.09*** (0.09, 0.09)	0.14*** (0.13, 0.14)	0.10*** (0.09, 0.10)	0.15*** (0.11, 0.21)
PSU variance (95% CI)	0.07 (0.06, 0.09)	0.07 (0.05, 0.09)	0.06 (0.05, 0.08)	0.17 (0.12, 0.25)
Wald Chi-square	Reference	282.49		
Model fitness				
Log-likelihood	-44849.23	-35545.81	-35422.66	-5714.80
N	151, 322	98661.00	98661.00	10588.00
Number of clusters	1390.00	1390.00	1390.00	578.00

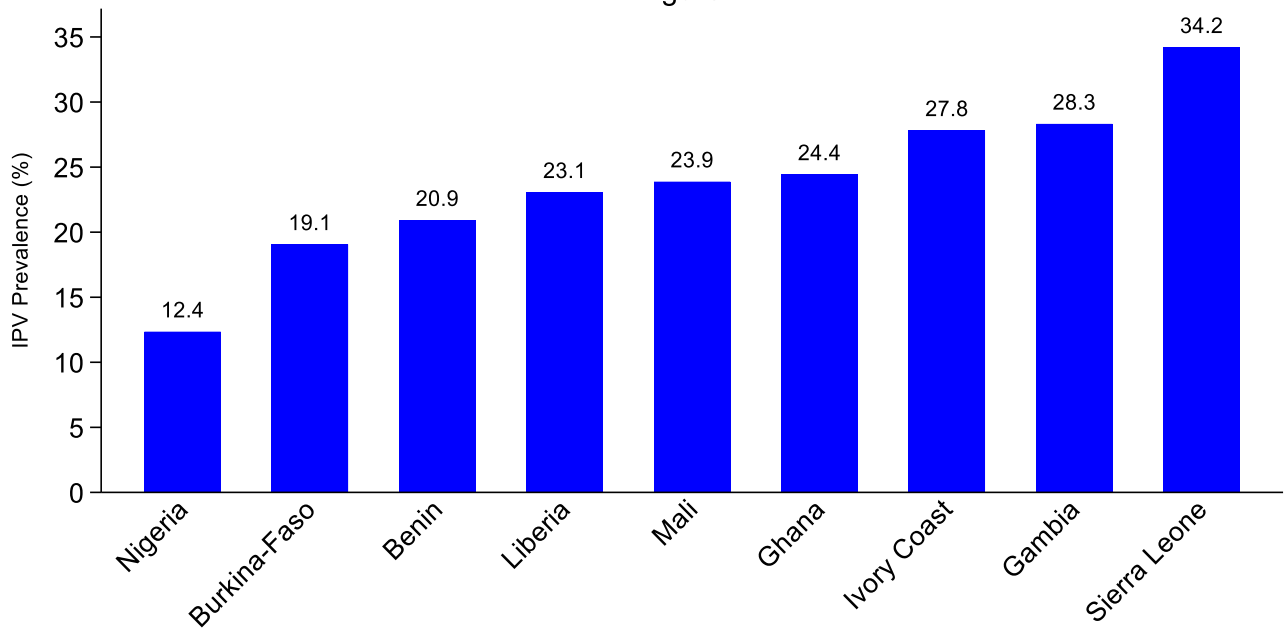
Source: Demographic and Health Surveys of Countries in West Africa (Burkina-Faso, Benin, Gambia, Ghana, Ivory Coast, Liberia, Mali, Nigeria, Sierra Leone) 2018-2022

$^{**}p < 0.05$, $^{***}p < 0.001$

Note: Odds ratios (OR) are shown with 95% confidence intervals (CI) in parentheses. Reference categories: Educational Level = Never been to school, Wealth Index = Poorest, Age Group = 18–24, Residence = Urban.

Prevalence of Intimate Partner Violence in West Africa, 2018-2022

Figure 1



Source: Demographic and Health Surveys, 2018-2022