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Mitigating the Effects of Armed Banditry on Poverty: Policy Strategies for Sustainable Development in the North-West Region of Nigeria

Abstract. Armed banditry has become a major threat to socioeconomic stability in Nigeria, particularly in the North-West region, where rural communities are increasingly vulnerable to multidimensional poverty. This study examines the impact of armed banditry on poverty incidence, intensity, and inequality, focusing on the Katsina, Sokoto, and Zamfara States before and after the crisis. Further, using an easy-cost approach, cross-sectional data were collected with the aid of a well-structured questionnaire coupled with an interview schedule from a total of 354 affected households selected through a multi-stage sampling technique. Data collection lasted for a period of three months (October-December) in the year 2024. Using a multidimensional poverty framework, the findings reveal a sharp rise in poverty levels in Katsina and Zamfara States, while Sokoto State experienced a decline, likely due to effective social safety interventions. Rural areas, which rely heavily on agriculture and informal economies, have been particularly affected, with livelihood disruptions, forced displacement, and limited access to education and healthcare exacerbating deprivation. The study further highlights regional disparities, showing that while Katsina and Zamfara bore a disproportionate poverty burden before the attacks, Sokoto experienced this burden post-crisis. Despite the decline in inequality, poverty deepened in rural areas, emphasising the need for targeted interventions to address both security challenges and economic vulnerability. The study recommends strengthening social protection programs, enhancing rural security, promoting economic empowerment, and improving access to education and healthcare. These measures are critical for mitigating poverty, restoring rural livelihoods, and fostering sustainable development in conflict-affected regions.

Keywords: development, dynamics, insecurity, poverty, rural, Nigeria

JEL Classification: O12, O55, P25, Q01, Q18

Introduction

Background of the Study

Poverty remains one of the most pressing challenges in sub-Saharan Africa, particularly in Nigeria, where a significant proportion of the population experiences multidimensional poverty - a condition characterised by deprivations in education,

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healthcare, living standards, and economic opportunities (United Nations Development Programme [UNDP], 2023). The North-West region of Nigeria, which is predominantly rural, has long struggled with high poverty rates, driven by low literacy levels, inadequate healthcare, poor infrastructure, and economic dependence on subsistence agriculture (World Bank, 2023). In recent years, however, armed banditry has further exacerbated poverty and widened inequalities, particularly in rural communities where livelihoods are highly dependent on agriculture, livestock rearing, and informal trade (National Bureau of Statistics [NBS], 2022).

Armed banditry in Katsina, Sokoto, and Zamfara States has led to widespread displacement, the destruction of farmlands, cattle rustling, school closures, and the disruption of rural economies (International Crisis Group, 2023). As a result, rural households, which were already vulnerable, have become increasingly impoverished, facing limited access to education, declining agricultural productivity, and deteriorating social services. The situation has significantly altered poverty dynamics, making it necessary to assess the incidence, intensity, and distribution of multidimensional poverty in the region before and after the banditry crisis.

Problem Statement

Despite various government poverty reduction initiatives, poverty remains widespread and severe in rural areas of North-West Nigeria, where insecurity has further compounded socioeconomic challenges (UNICEF, 2023). Previous studies have mostly focused on income-based poverty, overlooking non-monetary aspects such as education, health, and social well-being, which are critical in rural settings (Alkire, Foster, 2021). Additionally, there is limited research on how armed banditry influences the Multidimensional Poverty Index (MPI) across different states in the North-West region. While Sokoto State experienced a decline in poverty intensity, Katsina and Zamfara States saw worsening poverty conditions, suggesting regional variations in poverty response to insecurity. Furthermore, rural communities have been disproportionately affected, as they lack the institutional support, security infrastructure, and economic resilience of urban centres. Therefore, an empirical investigation is necessary to determine how armed banditry has altered multidimensional poverty in the region and to inform targeted policy responses.

Justification

Understanding the impact of armed banditry on multidimensional poverty in rural areas is crucial for developing evidence-based policies that address both poverty and insecurity in the North-West region. Unlike previous research that focuses primarily on income poverty, this study adopts a multidimensional approach to assess education, health, living standards, and economic deprivation (Alkire et al., 2022). The findings will provide valuable insights into how different states contribute to regional poverty, how poverty has evolved post-banditry, and what interventions have been effective or inadequate.

Additionally, the study is significant for policymakers, development organisations, and security agencies, as it highlights regional disparities and the unique vulnerabilities of rural households in conflict-prone areas. It aligns with the Sustainable Development Goals (SDG 1 - No Poverty) and Nigeria's broader poverty reduction strategies by identifying practical interventions to restore livelihoods, strengthen rural economies, and mitigate the effects of insecurity. Ultimately, this research aims to support data-driven policies that promote economic resilience, social stability, and sustainable development in rural Nigeria.

Consequently, the present study attempts to assess the impact of armed banditry on multidimensional poverty in the North-West region of Nigeria.

Study Limitation

This study faces several limitations, including a small sample size and an exclusive focus on rural areas, limiting the generalisability of findings and excluding urban poverty dynamics. Security concerns in the field posed significant challenges, restricting data collection in high-risk rural communities and potentially underrepresenting the most affected populations. The cross-sectional design limits understanding of poverty trends over time, while reliance on some secondary data may affect the timeliness of results.

Future research should adopt larger, more representative samples, include urban areas, and utilise longitudinal designs to capture poverty dynamics over time. Employing innovative data collection methods, such as remote surveys and satellite data, is recommended to overcome security constraints. Additionally, collaborative, community-based approaches can enhance data accuracy and cultural relevance, supporting more effective poverty reduction and conflict mitigation strategies.

Empirical Review

Several studies have explored the relationship between armed conflict, insecurity, and multidimensional poverty, with a particular emphasis on how rural communities are disproportionately affected. This section reviews existing empirical literature on poverty measurement, the impact of insecurity on rural poverty, and state-level variations in poverty trends across conflict-affected areas, particularly in Nigeria's North-West region.

Multidimensional Poverty Measurement and Rural Deprivation

Traditional poverty assessments have primarily relied on income-based indicators, which fail to capture the non-monetary dimensions of poverty that are crucial in rural settings. The Multidimensional Poverty Index (MPI) developed by Alkire and Foster (2011) offers a more comprehensive approach by incorporating education, health, living standards, and social well-being. Alkire et al. (2022) argued that rural communities experience higher levels of non-income-based deprivation due to limited access to basic services, low infrastructure development, and restricted economic opportunities.

In Nigeria, Ajakaiye and Adeyeye (2021) found that rural poverty is more severe than urban poverty, particularly in northern states, where access to education, healthcare, and clean water is significantly lower. Similarly, Ogunleye et al. (2022) revealed that agriculture-dependent households in the North-West region face higher multidimensional poverty rates, as poor access to farmland, markets, and financial services limits their ability to escape poverty. This aligns with findings by UNDP (2023), which show that rural households suffer more from long-term deprivation than their urban counterparts, exacerbating economic and social inequalities.

Impact of Insecurity on Rural Poverty

Recent studies emphasise the negative impact of armed conflicts, including banditry, on rural poverty. Justino (2017) explains that violence and instability disrupt economic

activities, displace populations, and weaken social institutions, leading to deepened poverty, particularly in rural areas. In Nigeria, Aliyu et al. (2022) found that armed banditry in the North-West has led to a 30% decline in agricultural productivity as rural farmers abandon their lands due to insecurity.

Okonkwo and Usman (2023) further highlight that rural areas in Katsina and Zamfara States have been the worst affected, with widespread displacement, cattle rustling, and destruction of farmlands severely limiting rural livelihoods. UNICEF (2023) also reports that rural children face greater barriers to education in conflict-affected areas due to the closure of schools and targeted attacks on educational institutions. This aligns with World Bank (2023) findings, which indicate that rural poverty in Nigeria is increasingly linked to insecurity, forcing many households into deeper deprivation.

Regional and State-Level Variations in Rural Poverty Trends

Empirical studies have also documented variations in poverty trends across different states, revealing that some states experience higher multidimensional poverty burdens than others. NBS (2022) found that Katsina and Zamfara States contribute disproportionately to regional poverty, particularly in rural areas where agricultural dependence and weak economic diversification exacerbate vulnerability. In contrast, Sokoto State has demonstrated some resilience, likely due to better social safety nets and poverty alleviation programs (Adebayo, Salisu, 2023).

Oladipo et al. (2023) argued that rural areas in Sokoto have benefited from more effective social interventions, reducing poverty intensity despite the ongoing security crisis. However, Akinola and Bello (2022) noted that rural populations in Zamfara and Katsina have not received adequate government support, leading to increased displacement and economic hardship. Similarly, the International Crisis Group (2023) emphasised that rural economies are collapsing in banditry-affected states as farmers, traders, and herders face continuous violence and asset losses.

Gaps in the Literature

While several studies have examined poverty and insecurity in Nigeria, most focus on income poverty rather than multidimensional poverty in rural areas. Additionally, there is limited research on how specific states contribute to regional poverty burdens before and after security crises. This study fills these gaps by:

1. Using a multidimensional poverty framework to assess how different poverty indicators (education, health, and economic well-being) have changed over time.
2. Analysing state-specific rural poverty trends in Katsina, Sokoto, and Zamfara States, identifying how insecurity has reshaped deprivation patterns.
3. Evaluating the effectiveness of social safety programs in mitigating poverty, particularly in rural communities most affected by armed banditry.

Theoretical Framework

A theoretical framework is essential for understanding the complex interactions between armed banditry, rural poverty, and social interventions. This study is grounded in three key theories: Multidimensional Poverty Theory, Conflict-Poverty Nexus Theory, and

Social Safety Net Theory. These theories provide a foundation for examining how insecurity exacerbates rural poverty, how poverty extends beyond income deprivation, and how government interventions can influence poverty trends in rural communities.

1. Multidimensional Poverty Theory (Alkire and Foster, 2011)

The Multidimensional Poverty Theory (MPT) challenges the traditional view of poverty as merely income-based, arguing that poverty is a multi-faceted phenomenon that includes deprivation in education, healthcare, living standards, and economic opportunities (Alkire, Santos, 2014). This is especially relevant in rural areas, where low access to quality healthcare, poor educational facilities, and inadequate infrastructure contribute to persistent poverty (Ajakaiye, Adeyeye, 2021; Sadiq, Sani, 2022; Sadiq et al., 2024b).

Rural households in Katsina, Sokoto, and Zamfara States experience higher multidimensional poverty rates due to limited access to schools, poor healthcare services, lack of electricity, and restricted market access. The theory explains why armed banditry worsens poverty in rural communities, as it disrupts agricultural activities, displaces families, and weakens already fragile social support systems (Alkire et al., 2022). By using a Multidimensional Poverty Index (MPI) framework, this study examines how rural poverty has intensified due to insecurity and how deprivation patterns have shifted over time.

2. Conflict-Poverty Nexus Theory (Goodhand, 2001; Justino, 2017)

The Conflict-Poverty Nexus Theory explains the cyclical relationship between conflict and poverty, particularly in rural, agrarian economies where livelihoods are highly dependent on land, livestock, and informal trade (Justino, 2017). Armed conflicts destroy local economies, force rural households into displacement, and limit access to essential services, leading to deepened poverty and economic fragility (Aliyu et al., 2022).

In the context of North-West Nigeria, armed banditry has led to widespread displacement of rural farmers, loss of agricultural income, destruction of farmlands, and reduced trade activities (Okonkwo, Usman, 2023). Rural communities, which were already marginalised in terms of access to education, healthcare, and infrastructure, have become even more vulnerable due to violence and insecurity. This theory helps explain why poverty incidence and intensity increased in Katsina and Zamfara States, where banditry has been more severe, while Sokoto experienced relative stability due to stronger government interventions (NBS, 2022).

The theory also suggests that unless security is restored, rural poverty will continue to deepen as farmers abandon their land, markets collapse, and families lose their primary sources of income (World Bank, 2023). Therefore, addressing poverty in conflict-affected rural areas requires both economic and security interventions to break the cycle of violence and deprivation.

3. Social Safety Net Theory (Barrientos, 2013)

The Social Safety Net Theory highlights the role of government interventions, social programs, and aid mechanisms in reducing poverty and vulnerability (Barrientos, 2013). In rural settings, where access to formal employment, financial services, and infrastructure is limited, social protection policies such as cash transfers, food aid, and agricultural subsidies can help reduce poverty intensity and improve resilience (UNDP, 2023).

This theory is particularly relevant to Sokoto State, where poverty intensity declined despite the banditry crisis, likely due to better-implemented social safety programs (Adebayo, Salisu, 2023). In contrast, Katsina and Zamfara States - which suffered higher poverty increases - have had weaker intervention programs, suggesting that the effectiveness of social safety nets varies across states (Ogunleye et al., 2022).

Social safety net programs are especially important for rural communities, where income instability, lack of access to credit, and reliance on subsistence farming make households more vulnerable to economic shocks (Oladipo et al., 2023). This study applies the Social Safety Net Theory to evaluate how different government policies have affected poverty reduction efforts in rural areas, identifying gaps in policy implementation and resource distribution.

Table 1. Application of theories to the study

Theory	Key Concept	Application to Rural Poverty in North-West Nigeria
Multidimensional Poverty Theory	Poverty extends beyond income and includes education, health, and living standards.	Explains how rural communities suffer from multiple deprivations (e.g., poor infrastructure, lack of education, and healthcare shortages).
Conflict-Poverty Nexus Theory	Conflict disrupts livelihoods, displaces populations, and deepens economic vulnerability.	Shows how armed banditry worsens rural poverty by destroying farms, forcing displacement, and reducing access to markets.
Social Safety Net Theory	Government interventions help mitigate poverty through cash transfers, food aid, and agricultural support.	Highlights why Sokoto State experienced reduced poverty, while Katsina and Zamfara saw worsening poverty due to weaker intervention efforts.

Source: Authors' own extraction, 2024.

Conceptual Framework

The conceptual framework for this study explores the relationship between armed banditry, multidimensional poverty, and social interventions in rural communities of North-West Nigeria. Rural areas are particularly vulnerable to insecurity, economic shocks, and poor social infrastructure, making it essential to understand how armed banditry deepens poverty and how interventions can mitigate its effects.

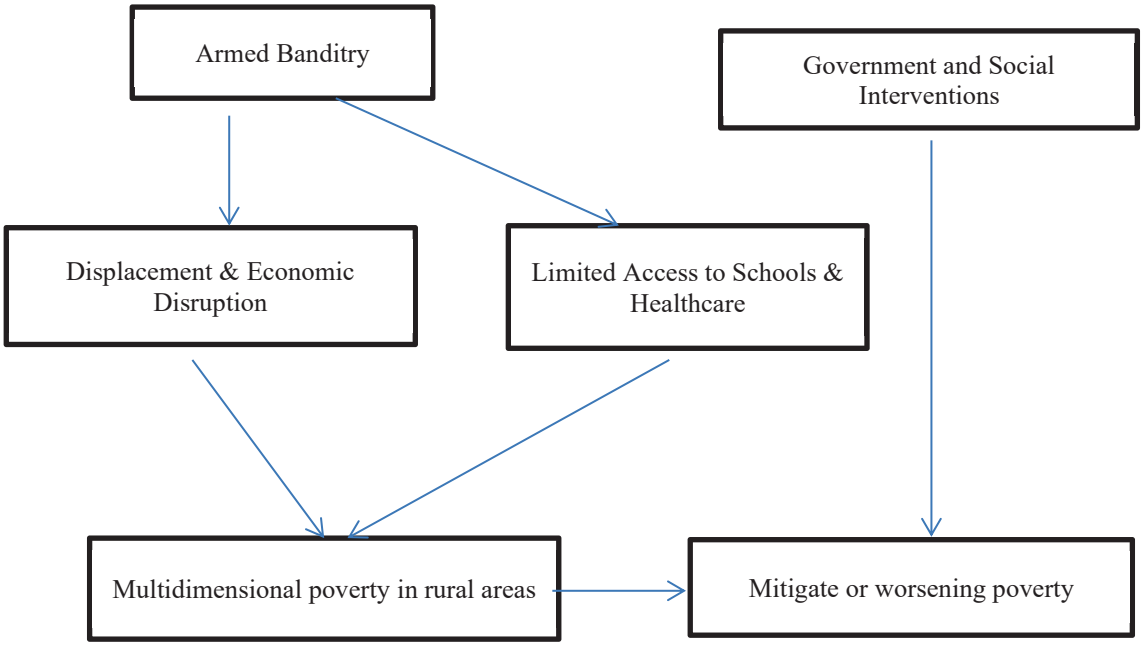


Fig. 1. Armed banditry and MPI

Source: Authors' own conceptualisation, 2024.

The conceptual framework visually represents how armed banditry exacerbates multidimensional poverty in rural areas and the role of social interventions in moderating these effects:

1. Armed Banditry (Independent Variable)
   - Leads to displacement, destruction of livelihoods, and insecurity.
   - Forces rural communities to abandon farmlands and economic activities.
2. Impact on Rural Poverty (Dependent Variable)
   - Displacement and Economic Disruption: Loss of farmlands, reduced household income, and food insecurity.
   - Limited Access to Schools and Healthcare: School closures, lack of healthcare facilities, and deteriorating social services.
   - These factors collectively increase multidimensional poverty in rural communities.
3. Government and Social Interventions (Moderating Variable)
   - Effective programs (cash transfers, food aid, security reinforcement) can mitigate poverty.
   - Weak interventions lead to worsening poverty and increased inequality.

This framework highlights the urgent need for targeted policies that address both security and economic recovery in rural areas, ensuring that affected communities can rebuild and escape poverty.

Research Methodology

The North-West region of Nigeria (Figure 2), comprising Katsina, Sokoto, and Zamfara States, is characterised by savanna vegetation, vast arable land, and proximity to the Niger Republic, making it a key hub for agriculture and trade (NBS, 2022). The region experiences a tropical continental climate with rainy (May–October) and dry (November–April) seasons, an annual rainfall of 500–1000 mm, and increasing desertification in northern areas (NiMet, 2023). Agro-ecologically, it lies within the Sudan and Sahel savanna zones, supporting crop farming (millet, sorghum, maize) and livestock rearing, but faces challenges like land degradation and soil infertility (FAO, 2022). Despite its agriculture-driven economy, the region suffers from high poverty rates, insecurity, and limited industrialisation, exacerbated by armed banditry and economic disruptions (World Bank, 2023).

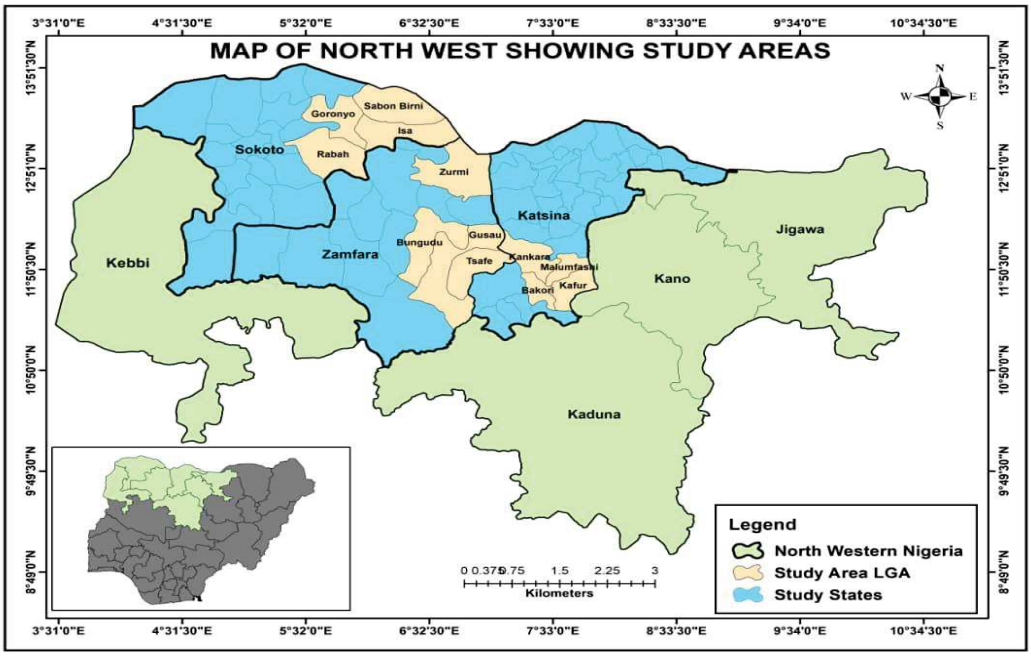


Fig. 2. Map of the Study Area

Source: Authors' own drawing, 2024.

Using a multi-stage sampling technique, a total of 354 affected households formed the sample size (Table 1b). In the region, the worst affected states, namely Katsina, Sokoto, and Zamfara, were purposively selected. Subsequently, based on the temporary security stability of affected areas, four Local Government Areas (LGAs) were conveniently selected from each of the chosen states, thus giving a total of twelve (12) sampled LGAs. The high state of banditry activities necessitates the choice of predominantly rural LGAs over those characterised as urban and peri-urban LGAs. Given the oscillating nature of security, which impaired the quality of a finite sampling frame, as proposed by Bartlett et al. (2002) and adopted by Sadiq et al. (2020; 2023, 2024a), the error margin formula was used to generate

a representative sample size for the study. Sadiq et al. (2020; 2023, 2024a) argued that in the absence of a finite population, Bartlett's sampling formula stands a better chance of deriving a more accurate and scientifically representative sample size. Except for two LGAs in Katsina State, where 30 affected households were randomly chosen, 29 affected households were randomly selected across each of the 10 LGAs, thus giving a total sample size of 350 households as recommended by Bartlett's error margin formula. However, after the field survey, four (4) extra valid digital responses across two LGAs in Zamfara State were observed. Given that this small number was unlikely to introduce bias into the results, they were included in the analysis; therefore, the total sample size stands at 354 affected households.

Furthermore, in data collection, a well-structured questionnaire coupled with an interview schedule was used to collect undated data from the affected households in the year 2024. By using an easy-route cost approach, data collection lasted for a period of three months (October to December). Moreover, the collected data were analysed using an exploratory factor analysis. Nevertheless, a k-means cluster hierarchy analysis was used to determine the population proportion in each of the clusters.

Table 1b: Sampling procedure and sample size of the affected households

States	LGAs	Sample size
Katsina	Bakori	30
	Kafur	30
	Kankara	29
	Malumfashi	29
Sokoto	Goronyo	29
	Isa	29
	Rabah	29
	Sabon-Birni	29
Zamfara	Bungudu	29
	Gusau	31
	Tsafe	29
	Zurmi	31
Total / 3	12	354

Source: Reconnaissance survey, 2024.

According to Bartlett's formula, the sample size of the unknown can be generated using the following formula:

$$N_{nb} = Z^2 * P(1-P) / e^2 \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where, N_{nb} is the sample size of the non-beneficiaries, Z is the z-statistic at a 5% probability level (1.96), P is the sample proportion (35%) and e is the error gap at 5%.

Empirical model

Multidimensional poverty index (MPI): The MPI is a composite indicator of poverty that accounts for both the distribution of deprived areas and their prevalence (Appendix 1) (Sadiq and Sani, 2022). The following are the indexes involved in the measurement:
Multidimensional headcount ratio (H): Is the proportion of persons who have been classified as multidimensionally poor, i.e. those who fall below the poverty line, and is expressed as:

$$H = q(k)/n \quad \text{(2)}$$

The number (or headcount) of multidimensionally poor persons according to parameter k is q(k).

$$(q(k) = \sum_{i=1}^{n} p_k(x_i, z)) \quad \text{(3)}$$

The average deprivation share across the poor is defined as the intensity of poverty A, often known as the breadth of poverty. This is presented as:

$$A = \sum_{i=1}^{q} c_i(k)/q(k) \quad \text{(4)}$$

The percentage of the d indicators in which the average multidimensionally poor person is deprived is the intensity of poverty.
The measure M_0 is the so-called adjusted headcount ratio when α = 0.

$$M_0 = HA \quad \text{(5)}$$

When α=1, the measure M_1, referred to as the adjusted poverty gap, is used. It is defined as the weighted average of indicator-specific poverty gaps. G is the poverty gap.

$$M_1 = HAG \quad \text{(6)}$$

$$G = \sum_{i=1}^{n}\sum_{j=1}^{d} g_{ij}^{1}(k) \Big/ \sum_{i=1}^{n}\sum_{j=1}^{d} g_{ij}^{0}(k) \quad \text{(21)}$$

Finally, when α=2, the adjusted squared poverty gap (M_2) is calculated as the weighted average of the indicator-specific squared poverty gaps. S is poverty severity.

$$M_2 = HAS \quad \text{(7)}$$

$$S = \sum_{i=1}^{n}\sum_{j=1}^{d} g_{ij}^{2}(k) \Big/ \sum_{i=1}^{n}\sum_{j=1}^{d} g_{ij}^{0}(k) \quad \text{(8)}$$

Seth and Alkire (2014), as reported by Sadiq and Sani (2022), suggested an additively decomposable inequality measure that is a positive multiple of "variance" and has within-group and between-group components. The inequality measure I^q employs the vector of deprivation scores of the q impoverished people $c_i(k)$ to quantify inequality among the poor at the national or sub-national level.

$$I^q = \frac{\tilde{\beta}}{q} \sum_{i=1}^{q} [c_i(k) - A]^2 \quad \text{(9)}$$

To calculate the measure of inequality, the difference between each poor person's deprivation score and average intensity is squared, and then the squared distances are added together and multiplied by a constant $\tilde{\beta}$. We set $\tilde{\beta}$ =1/21 since the poor's deprivation ratings vary from 1/7 to 1. This is the greatest permissible number for the inequality gauge, guaranteeing that the inequality gauge is constrained between zero and one, given the spectrum of deprivation scores. Nevertheless, a lower degree of poverty or a decline in

poverty does not necessarily mean that every region or demographic category has experienced an equal reduction in poverty (Sadiq and Sani, 2022; Sadiq et al., 2024a,b).

Absolute rate of change (Δ): The absolute rate of change is the difference in MPIs between two periods and is computed as:

$$\Delta MPI = MPI(X_{t^2}) - MPI(X_{t^1}) \quad \ldots\ldots (10)$$

Similarly, for H and A:

$$\Delta H = H(X_{t^2}) - H(X_{t^1}) \quad \ldots\ldots (11)$$

$$\Delta A = A(X_{t^2}) - A(X_{t^1}) \quad \ldots\ldots (12)$$

Note, the absolute rate of change is indifferent to the initial level.

Relative rate of change (δ): The relative rate of change is computed for the MPI (and similarly, for H and A, which are not presented) as:

$$\delta MPI = \frac{MPI(X_{t^2}) - MPI(X_{t^1})}{MPI(X_{t^1})} * 100 \quad \ldots\ldots (13)$$

Results and discussion

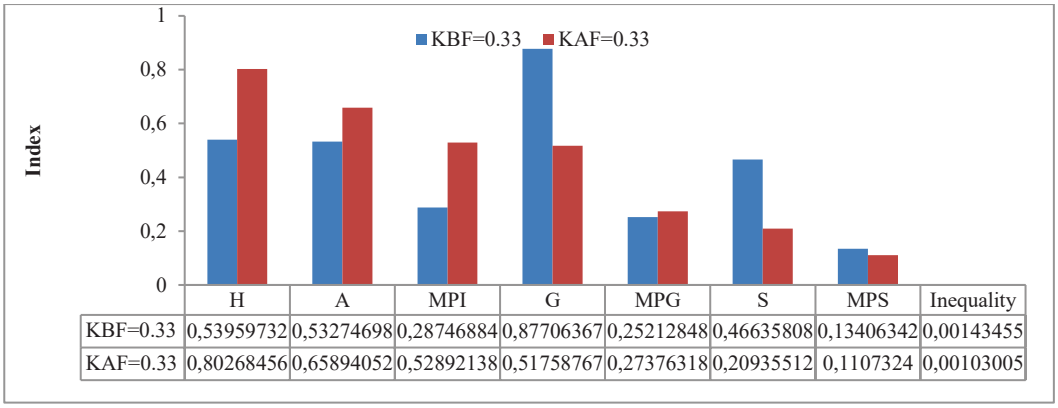
A review of the state-wise MPI results shows that at a lower poverty threshold (K=0.33), for Katsina State (see Table 2 and Figure 3a) before the armed banditry, a total of 53.96% of its population was deemed poor before the armed banditry. On average, they were deprived in three dimensions coupled with three sub-dimensions on a scale of four sub-dimensions, as evidenced by the poverty incidence (0.5396) and intensity (0.5328) indexes, respectively. Moreover, at the same time, for the adjusted headcount ratio (MPI), a proportion of two dimensions out of the total potential deprivation is experienced by the poor in the study area. In other words, there is a reduction of deprivation in two poverty dimensions among the poorest of the poor, even if they remain multidimensionally poor. Further, the adjusted poverty gap index showed that the households deemed poor need to overcome deprivation in at least two dimensions in order to escape poverty. Also, the adjusted squared poverty gap index revealed that the poorest among the poor experienced the addition of deprivation in four sub-dimensions (indicators) on a scale of five sub-dimensions. Conversely, after the banditry attacks, those classified as poor increased sharply to 80.27%, with an average deprivation across four dimensions complemented by three sub-dimensions on a scale of five sub-dimensions, as evidenced by the indexes of poverty incidence (0.8027) and intensity (0.6589), respectively. Moreover, of the total potential deprivation, the proportion of severe deprivation experienced in the study area spans three dimensions and is coupled with three sub-dimensions on a scale of four sub-dimensions, as indicated by the adjusted headcount index (0.5289). Nevertheless, for the poor households to escape poverty, they need to overcome deprivation in approximately two dimensions, as shown by the adjusted poverty gap index. Additionally, the poorest among the poor experienced additional deprivation in approximately one dimension, as evidenced by the adjusted squared poverty gap index.

Furthermore, at the severe poverty threshold level (K=0.50) (see Table 2 and Figure 3c), before the banditry attacks, 20.27% of the population was deemed poor, whereas, after the attacks, the poverty rate steeply increased by more than 300%, i.e., approximately 67.85% of the population being caught in the vicious cycle of poverty as evidenced by their respective poverty headcount index. Surprisingly, on average, a gentle decline in deprivation was observed after the attacks compared to before the attacks. Moreover, at the adjusted poverty headcount index, the proportion of severe deprivation from the potential deprivation experienced by the poor households was one dimension before the attacks and thereafter steeply increased to three dimensions, coupled with a sub-dimension on a scale of four sub-dimensions after the attacks. Likewise, for the adjusted poverty gap index, the gap needed to escape deprivation steeply inclined after the attacks (0.2044) compared to before the attacks (0.0569). The distance between the poverty level and cut-off point before and after the attacks, respectively, are approximately two sub-dimensions on a scale of five sub-dimensions and one dimension coupled with one sub-dimension on a scale of two sub-dimensions. In the same direction, for adjusted squared poverty, comparatively, there is a steep increase in the proportion of additional deprivation experienced by the poorest among the poor after the attacks compared to before the attacks. Thus, before and after the attacks, respectively, the poorest among the poor experienced an addition of approximately one dimension and three sub-dimensions on a scale of five sub-dimensions.

Nevertheless, in assessing the state of inequality at the benchmark and severe poverty thresholds, low inequalities existed across the periods. Additionally, the transition between the periods (i.e., before and after the banditry attacks) for each of the thresholds was marked by a gentle decline. However, the low level of inequality among the poor may not mean that poverty has uniformly plummeted in both periods.

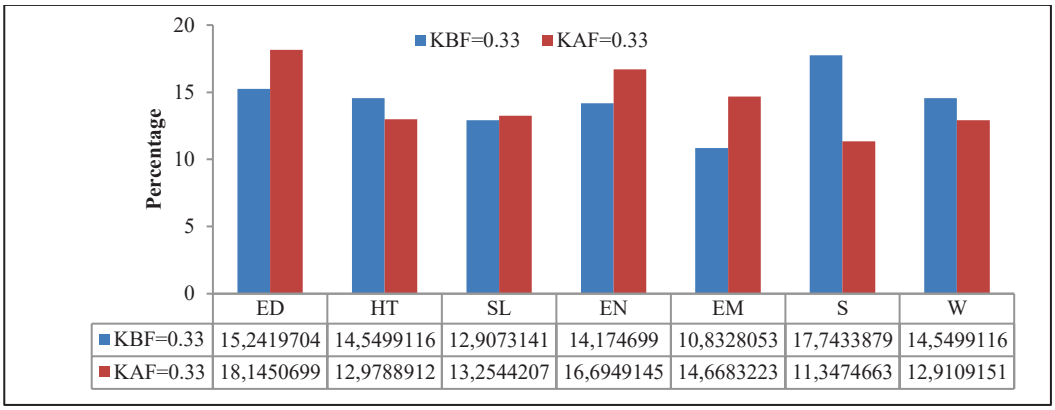
Moreover, the indicator-wise results of Katsina State showed that between before and after the banditry attacks at the lower poverty threshold (see Table 3 and Figure 3b), the most deprived dimensions faced in the study area are social connectedness/linkage and education, respectively. At higher poverty levels between before and after the attacks (see Table 3 and Figure 3d), the same trend prevails.

Generally, the findings reveal a drastic surge in multidimensional poverty in Katsina State following the armed banditry, with poverty incidence rising from 53.96% to 80.27% and severe poverty increasing by over 300%. The crisis has deepened deprivation across key dimensions, particularly education and social connectedness, making it harder for affected households to escape poverty. Despite low inequality among the poor, the overall worsening of deprivation underscores the urgent need for targeted interventions in security, education, and social welfare to mitigate the long-term effects of the crisis.



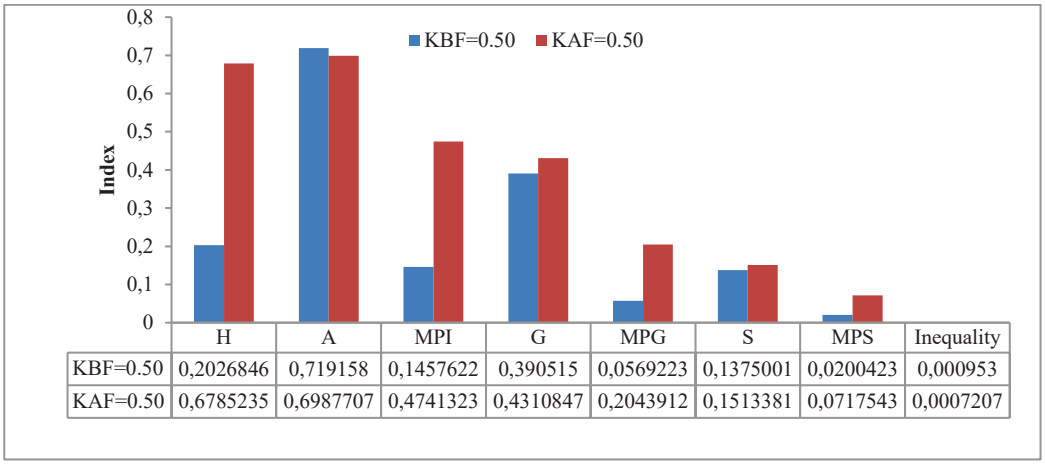
	H	A	MPI	G	MPG	S	MPS	Inequality
KBF=0.33	0,53959732	0,53274698	0,28746884	0,87706367	0,25212848	0,46635808	0,13406342	0,00143455
KAF=0.33	0,80268456	0,65894052	0,52892138	0,51758767	0,27376318	0,20935512	0,1107324	0,00103005

Fig. 3a. MPI of before vs. after for Katsina State (k=0.33)



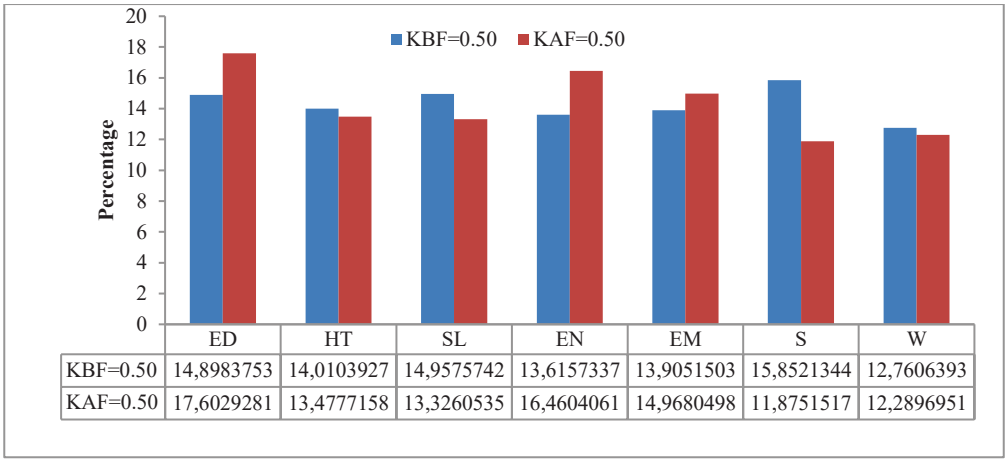
	ED	HT	SL	EN	EM	S	W
KBF=0.33	15,2419704	14,5499116	12,9073141	14,174699	10,8328053	17,7433879	14,5499116
KAF=0.33	18,1450699	12,9788912	13,2544207	16,6949145	14,6683223	11,3474663	12,9109151

Fig. 3b. MPI dimensions of before vs. after for Katsina State (k=0.33)



	H	A	MPI	G	MPG	S	MPS	Inequality
KBF=0.50	0,2026846	0,719158	0,1457622	0,390515	0,0569223	0,1375001	0,0200423	0,000953
KAF=0.50	0,6785235	0,6987707	0,4741323	0,4310847	0,2043912	0,1513381	0,0717543	0,0007207

Fig. 3c. MPI of before vs. after for Katsina State (k=0.50)



	ED	HT	SL	EN	EM	S	W
KBF=0.50	14,8983753	14,0103927	14,9575742	13,6157337	13,9051503	15,8521344	12,7606393
KAF=0.50	17,6029281	13,4777158	13,3260535	16,4604061	14,9680498	11,8751517	12,2896951

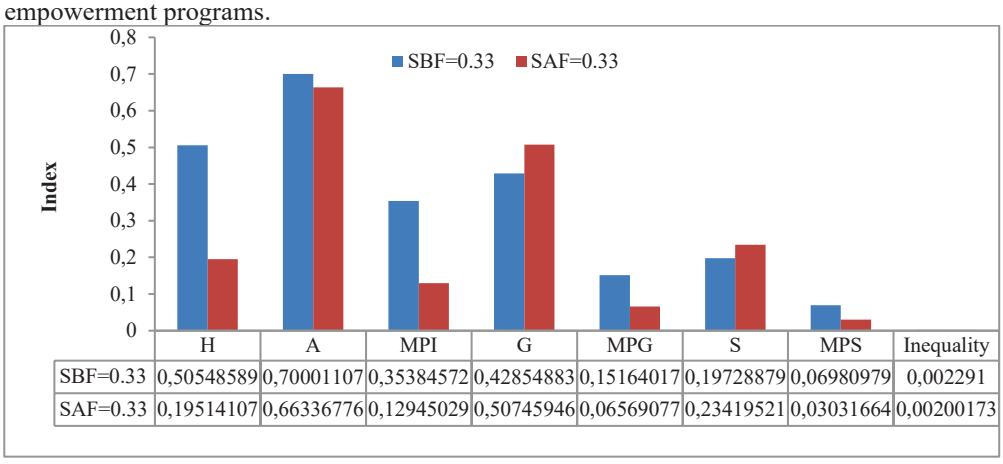
Fig. 3d. MPI dimensions of before vs. after for Katsina State (k=0.50)

Source: Field survey, 2024.

For Sokoto State, at lower and higher poverty thresholds (see Table 2; Figures 4a, c) between the two periods, the incidence of poverty steeply declined by 31.03 and 22.65%, respectively. Likewise, a steep decline in both poverty and the adjusted headcount ratio was observed across the periods at both the lower and higher poverty thresholds. For the poverty intensity, at lower and higher poverty thresholds, the average poor households experienced a decline in deprivation on one indicator on a scale of four indicators and almost two indicators on a scale of five indicators, respectively. Also, for the adjusted poverty headcount ratio (MPI), at lower and higher poverty thresholds, respectively, the poor experienced a proportion of 22.44 (one-dimension coupled with two indicators on a scale of four indicators) and 18.91% (one-dimension coupled with one indicator on a scale of four scale indicators) deprivation reduction from the total potential deprivation suffered in the study area. Nevertheless, across the two periods at both poverty levels, both the adjusted poverty gap and the squared poverty gap plummeted steeply. Thus, for the adjusted poverty gap at lower and higher poverty thresholds, respectively, the gap of deprivation reduction to escape poverty was reduced to three indicators on a scale of five indicators and one indicator on a scale of four indicators. Nevertheless, at the adjusted squared poverty gap for the lower and higher thresholds, respectively, the poorest among the poor experienced a reduction in additional deprivation by 3.95 (one indicator on a scale of four indicators) and 1.12% (almost no indicator on a scale of five indicators). Further, at both poverty thresholds across the two periods, the state of inequality declined. Despite the low level of inequality across the periods at different poverty thresholds, this might not mean that poverty has reduced between the two periods in the study area. Surprisingly, unlike for the sister states where poverty tends to incline after the banditry attacks, as reported by NBS (2022), the state of poverty across its indices was on the decline, and the possible reason might be connected with a viable and effective social safety provision to the affected area by the Sokoto State government. This is in line with the findings of Adebayo and Salisu (2023) and Oladipo et al. (2023).

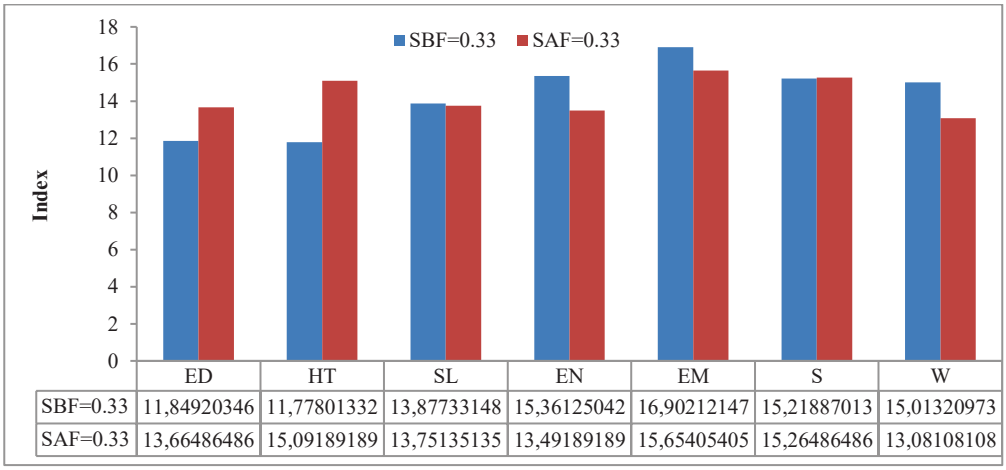
The indicator-wise results of Sokoto State between before and after the banditry attacks at a lower poverty level showed that the most deprived dimension in the study area is empowerment (see Table 3 and Figure 4b). Nevertheless, before and after the banditry attacks at a higher poverty level, the most deprived dimensions that affected the study area were empowerment and health, respectively (see Table 3 and Figure 4d).

Generally, the decline in poverty incidence and intensity across both poverty thresholds in Sokoto State suggests that effective social safety programs have mitigated the impact of the banditry crisis, setting it apart from neighbouring states where poverty worsened. Despite reduced inequality and improved deprivation levels, empowerment and health remain critical areas of concern, requiring targeted interventions to sustain progress. The findings highlight the importance of government-led poverty alleviation initiatives, emphasising the need for continued investment in social welfare, healthcare, and economic empowerment programs.



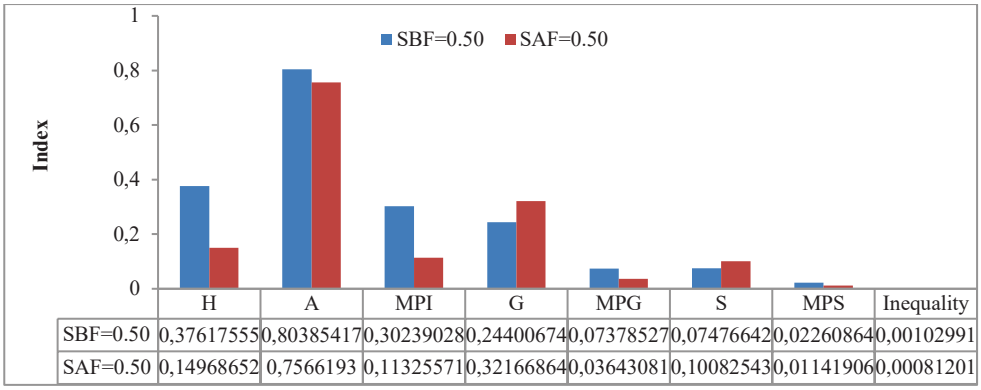
	H	A	MPI	G	MPG	S	MPS	Inequality
SBF=0.33	0,50548589	0,70001107	0,35384572	0,42854883	0,15164017	0,19728879	0,06980979	0,002291
SAF=0.33	0,19514107	0,66336776	0,12945029	0,50745946	0,06569077	0,23419521	0,03031664	0,00200173

Fig. 4a. MPI of before vs. after for Sokoto State (K=0.33)



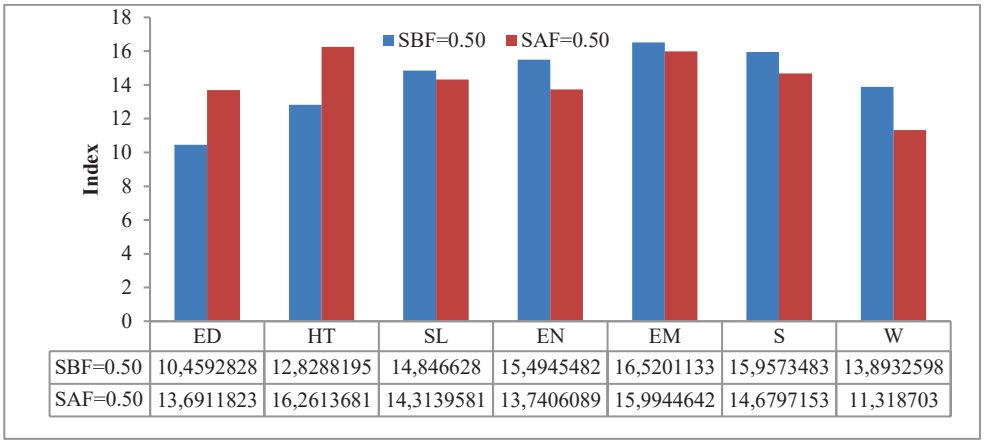
	ED	HT	SL	EN	EM	S	W
SBF=0.33	11,84920346	11,77801332	13,87733148	15,36125042	16,90212147	15,21887013	15,01320973
SAF=0.33	13,66486486	15,09189189	13,75135135	13,49189189	15,65405405	15,26486486	13,08108108

Fig. 4b. MPI dimensions of before vs. after for Sokoto State (K=0.33)



	H	A	MPI	G	MPG	S	MPS	Inequality
SBF=0.50	0,37617555	0,80385417	0,30239028	0,24400674	0,07378527	0,07476642	0,02260864	0,00102991
SAF=0.50	0,14968652	0,7566193	0,11325571	0,32166864	0,03643081	0,10082543	0,01141906	0,00081201

Fig. 4c. MPI of before vs. after for Sokoto State (K=0.50)



	ED	HT	SL	EN	EM	S	W
SBF=0.50	10,4592828	12,8288195	14,846628	15,4945482	16,5201133	15,9573483	13,8932598
SAF=0.50	13,6911823	16,2613681	14,3139581	13,7406089	15,9944642	14,6797153	11,318703

Fig. 4d. MPI dimensions of before vs. after for Sokoto State (K=0.50)

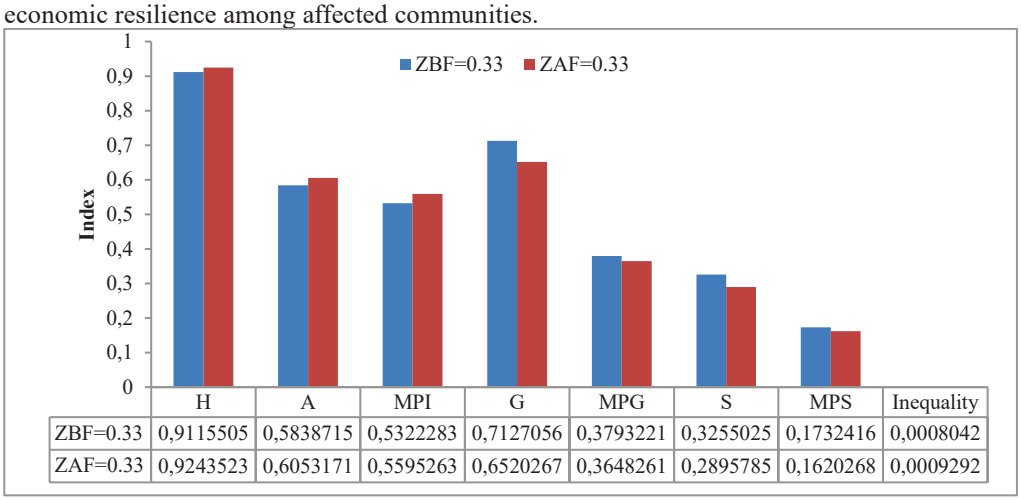
Source: Field survey, 2024.

For Zamfara State, between before and after the banditry attacks at lower and higher poverty levels, respectively (see Table 2 and Figures 5a, c), the incidence of poverty increased by 1.28 and 5.08%. Likewise, the intensity of poverty at lower and higher poverty levels, respectively, increased by 2.15 and 1.68%. In a nutshell, over time, the average poor in the study area experienced deprivation in one indicator and three indicators on a scale of five indicators at lower and higher poverty levels, respectively. Further, a similar scenario of increasing trends permeates the adjusted poverty ratio index across both the lower and higher poverty thresholds. At lower and higher poverty thresholds, respectively, of the total potential deprivation in the study area, the poor faced an additional deprivation of 2.73 (deprivation of one indicator on a scale of five indicators) and 4.45% (deprivation of two indicators on a scale of five indicators). Moreover, at a lower poverty level, the adjusted poverty gap decreased by 1.45%; contrarily, at a higher poverty level, it increased by 0.062%. Similarly, at lower and higher poverty levels, the adjusted poverty severity declined by 1.12%, whereas at a higher poverty level, it increased by 0.06%. This inverse

trend between the lower and higher poverty levels that permeate the adjusted poverty severity might be attributed to the passive implementation of social safety nets for the affected households in the study area. In other words, it shows that social intervention aimed at cushioning deprivation among the affected households didn't trickle down effectively. However, it would be inappropriate to associate it with sabotage as there is no empirical evidence of it despite speculation/insinuation by the key informants.

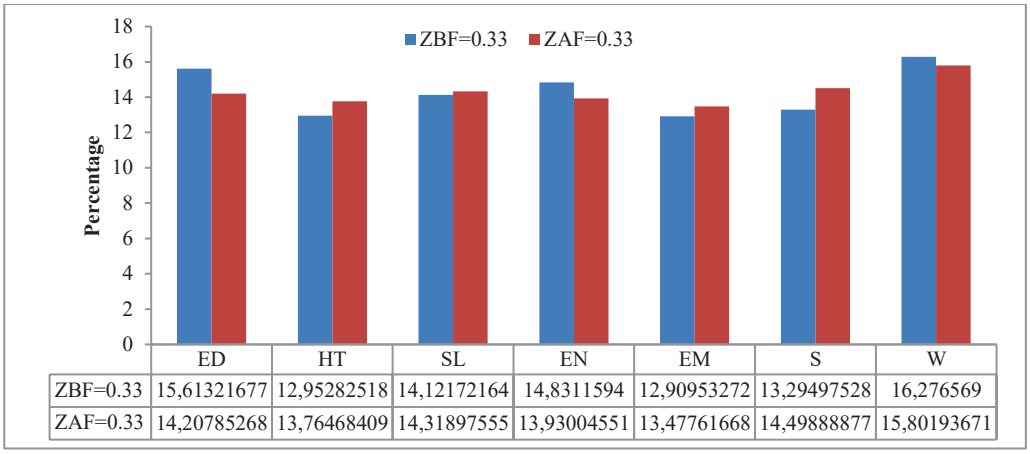
Furthermore, the indicator-wise results of Zamfara State at lower poverty levels before and after the attacks showed that the most deprived dimension that affected the study area was wealth (see Table 3 and Figure 5b). Likewise, before and after the banditry attacks at a higher poverty level, the most deprived dimension that affected the study area was wealth (see Table 3 and Figure 5d).

Generally, the increase in poverty incidence and intensity in Zamfara State after the banditry attacks indicates worsening deprivation, particularly in wealth, which remained the most deprived dimension at both poverty levels. The ineffectiveness of social safety nets suggests that government interventions failed to sufficiently reach or benefit the poorest households, leading to continued economic hardship. To reverse this trend, more inclusive and well-targeted social programs are needed to address wealth inequality and enhance economic resilience among affected communities.



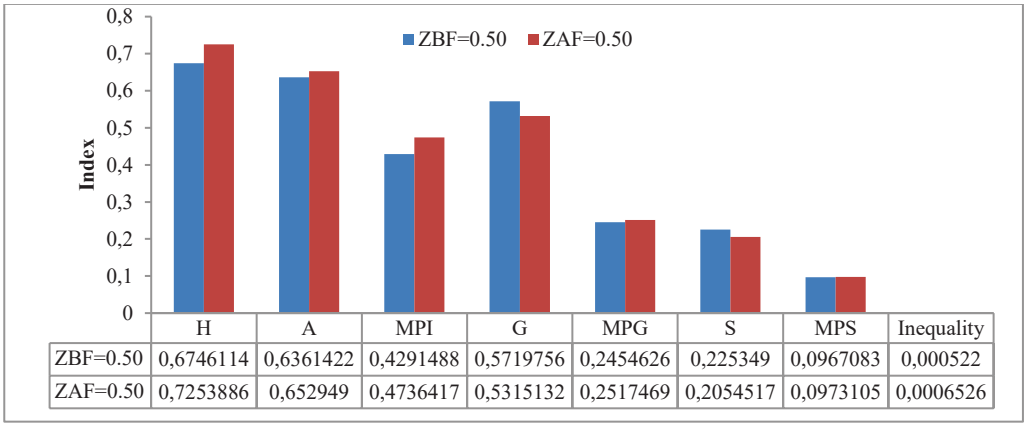
	H	A	MPI	G	MPG	S	MPS	Inequality
ZBF=0.33	0,9115505	0,5838715	0,5322283	0,7127056	0,3793221	0,3255025	0,1732416	0,0008042
ZAF=0.33	0,9243523	0,6053171	0,5595263	0,6520267	0,3648261	0,2895785	0,1620268	0,0009292

Fig. 5a. MPI of before vs. after for Zamfara State (K=0.33)



	ED	HT	SL	EN	EM	S	W
ZBF=0.33	15,61321677	12,95282518	14,12172164	14,8311594	12,90953272	13,29497528	16,276569
ZAF=0.33	14,20785268	13,76468409	14,31897555	13,93004551	13,47761668	14,49888877	15,80193671

Fig. 5b. MPI dimensions of before vs. after for Zamfara State (K=0.33



	H	A	MPI	G	MPG	S	MPS	Inequality
ZBF=0.50	0,6746114	0,6361422	0,4291488	0,5719756	0,2454626	0,225349	0,0967083	0,000522
ZAF=0.50	0,7253886	0,652949	0,4736417	0,5315132	0,2517469	0,2054517	0,0973105	0,0006526

Fig. 5c. MPI of before vs. after for Zamfara State (K=0.50)

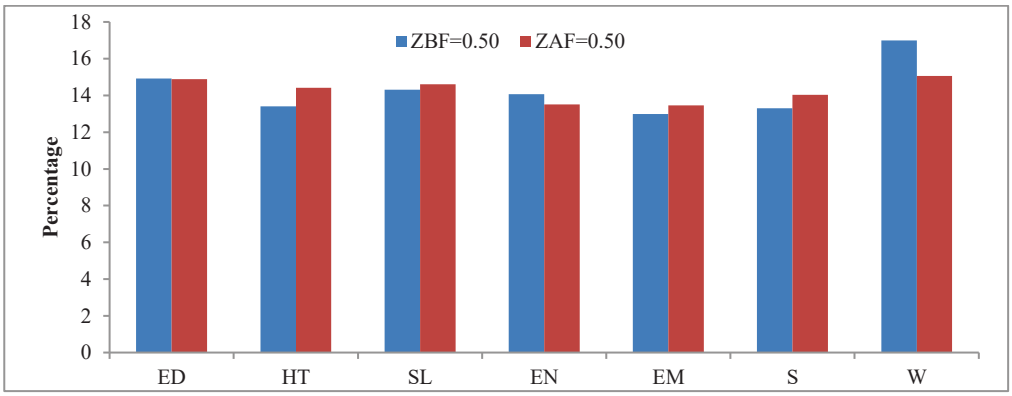


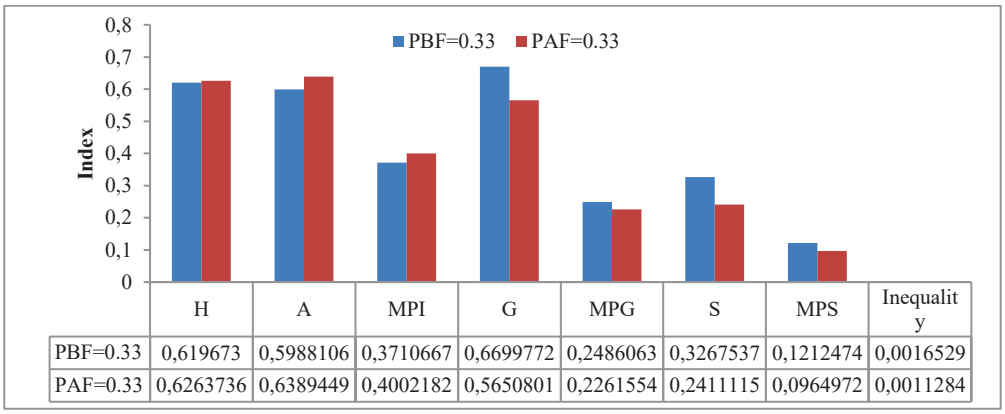
Fig. 5d. MPI dimensions of before vs. after for Zamfara State (K=0.50)

Source: Field survey, 2024.

For the pooled results, between the transitional periods of before and after the banditry attacks at lower and higher poverty thresholds, respectively, the empirical evidence showed that the incidence of poverty increased by 0.67 and 12.57% (see Table 2; Figures 6a, c). Almost in the same vein, between the transitional periods (before the attacks and after the attacks), at a lower poverty threshold, the intensity of poverty increased by 4.01%, whereas at a higher poverty threshold, the poverty intensity declined by 2.21%. It can be inferred that at lower and higher poverty thresholds, respectively, the average poor are deprived of two indicators and one indicator on a scale of five indicators. Moreover, between the transitional periods at lower and higher poverty levels, respectively, the adjusted poverty headcount ratio increased by 2.92 and 7.79%. Thus, the potential deprivation out of the total deprivation experienced by the poor in the study area at a lower poverty level is one indicator on a scale of five indicators, while at a higher poverty level, it is one indicator on a scale of two indicators. Furthermore, between the transitional periods at a lower poverty level, both the adjusted poverty gap and severity plummeted by 2.25 and 2.48%, respectively. Contrarily, at a higher poverty level, both the adjusted poverty gap and severity increased by 1.52 and 1.69%, respectively.

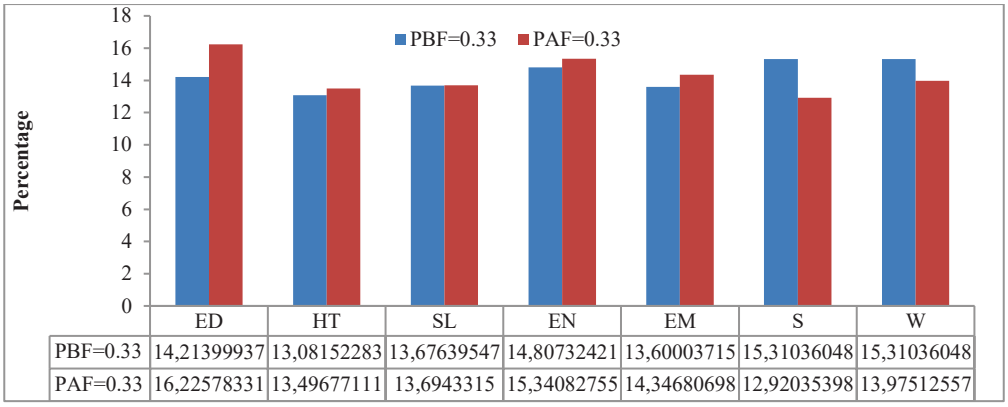
Moreover, the indicator-wise results of before and after the banditry attacks at a lower poverty level showed that the most deprived dimensions in the study area are social wealth (note, the two dimensions are at par) and education, respectively (see Table 3 and Figure 6b). Nevertheless, at a higher poverty level between before and after the attacks, the most deprived dimensions that affected the study area were wealth and education, respectively (see Table 3 and Figure 6d).

Generally, the overall increase in poverty incidence and intensity after the banditry attacks suggests that deprivation worsened, particularly at higher poverty thresholds, where economic conditions deteriorated significantly. The persistent deprivation in wealth and education highlights structural inequalities that social interventions have failed to address effectively. To mitigate further decline, targeted policies focusing on economic empowerment, wealth redistribution, and education investment are crucial for improving long-term resilience in affected communities.



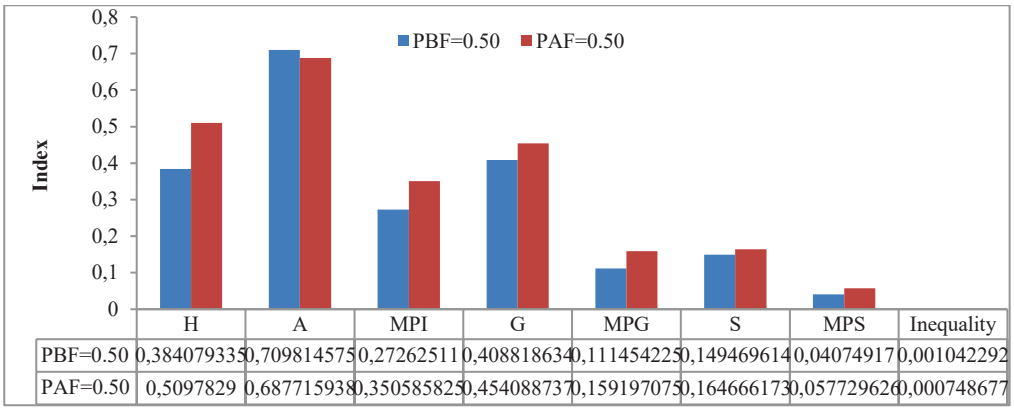
	H	A	MPI	G	MPG	S	MPS	Inequality
PBF=0.33	0,619673	0,5988106	0,3710667	0,6699772	0,2486063	0,3267537	0,1212474	0,0016529
PAF=0.33	0,6263736	0,6389449	0,4002182	0,5650801	0,2261554	0,2411115	0,0964972	0,0011284

Fig. 6a. MPI of before vs. after for pooled results (K=0.33)



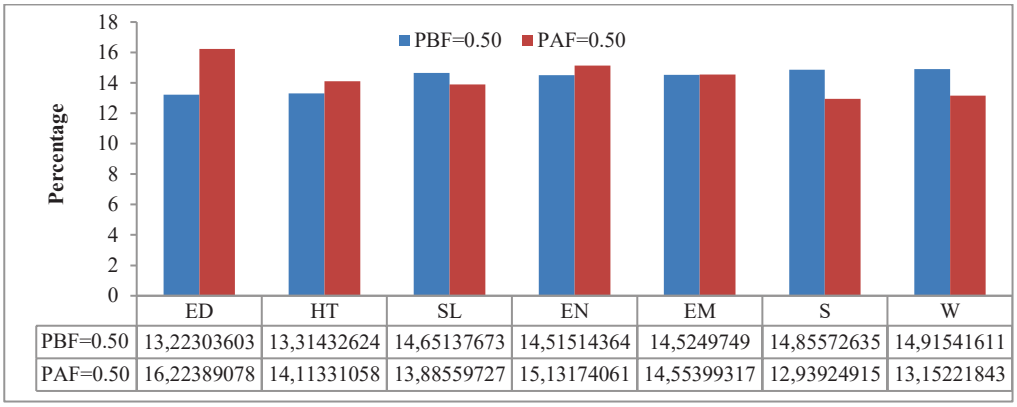
	ED	HT	SL	EN	EM	S	W
PBF=0.33	14,21399937	13,08152283	13,67639547	14,80732421	13,60003715	15,31036048	15,31036048
PAF=0.33	16,22578331	13,49677111	13,6943315	15,34082755	14,34680698	12,92035398	13,97512557

Fig. 6b. MPI dimensions of before vs. after for pooled results (K=0.33)



	H	A	MPI	G	MPG	S	MPS	Inequality
PBF=0.50	0,384079335	0,709814575	0,272625110	0,408818634	0,111454225	0,149469614	0,040749170	0,001042292
PAF=0.50	0,5097829	0,687715938	0,350585825	0,454088737	0,159197075	0,164666173	0,057729626	0,000748677

Fig. 6c. MPI of before vs. after for pooled results (K=0.50)



	ED	HT	SL	EN	EM	S	W
PBF=0.50	13,22303603	13,31432624	14,65137673	14,51514364	14,5249749	14,85572635	14,91541611
PAF=0.50	16,22389078	14,11331058	13,88559727	15,13174061	14,55399317	12,93924915	13,15221843

Fig. 6d. MPI dimensions of before vs. after for pooled results (K=0.50)

Source: Field survey, 2024.

Table 2. MPIs of affected households

State/Item	K=0.33				K-0.50			
Katsina(K)	KBF	KAF	ARC	RRC (%)	KBF	KAF	ARC	RRC (%)
H	0.539597	0.802685	0.263087	48.75622	0.202685	0.678523	0.475839	234.7682
A	0.532747	0.658941	0.126194	23.68733	0.719158	0.698771	-0.02039	-2.83489
MPI	0.287469	0.528921	0.241453	83.9926	0.145762	0.474132	0.32837	225.2779
G	0.877064	0.517588	-0.35948	-40.9863	0.390515	0.431085	0.04057	10.38876
MPG	0.252128	0.273763	0.021635	8.580827	0.056922	0.204391	0.147469	259.0702
S	0.466358	0.209355	-0.257	-55.1085	0.1375	0.151338	0.013838	10.06397
MPS	0.134063	0.110732	-0.02333	-17.403	0.020042	0.071754	0.051712	258.0138
Inequality	0.001435	0.00103	-0.0004	-28.197	0.000953	0.000721	-0.00023	-24.3771
Sokoto (S)	SBF	SAF	SARC	RRC (%)	SBF	SAF	SARC	RRC (%)
H	0.505486	0.195141	-0.31034	-61.3953	0.376176	0.149687	-0.22649	-60.2083
A	0.700011	0.663368	-0.03664	-5.23468	0.803854	0.756619	-0.04723	-5.87605
MPI	0.353846	0.12945	-0.2244	-63.4162	0.30239	0.113256	-0.18913	-62.5465
G	0.428549	0.507459	0.078911	18.41345	0.244007	0.321669	0.077662	31.82777
MPG	0.15164	0.065691	-0.08595	-56.6798	0.073785	0.036431	-0.03735	-50.6259
S	0.197289	0.234195	0.036906	18.7068	0.074766	0.100825	0.026059	34.85389
MPS	0.06981	0.030317	-0.03949	-56.5725	0.022609	0.011419	-0.01119	-49.4925
Inequality	0.002291	0.002002	-0.00029	-12.6264	0.00103	0.000812	-0.00022	-21.1568
Zamfara(Z)	ZBF	ZAF	ARC	RRC (%)	ZBF	ZAF	ARC	RRC (%)
H	0.91155	0.924352	0.012802	0.014044	0.674611	0.725389	0.050777	7.526882
A	0.583871	0.605317	0.021446	0.03673	0.636142	0.652949	0.016807	2.641985
MPI	0.532228	0.559526	0.027298	0.05129	0.429149	0.473642	0.044493	10.36773
G	0.712706	0.652027	-0.06068	-0.08514	0.571976	0.531513	-0.04046	-7.07414
MPG	0.379322	0.364826	-0.0145	-0.03822	0.245463	0.251747	0.006284	2.560159
S	0.325502	0.289578	-0.03592	-0.11036	0.225349	0.205452	-0.0199	-8.82955
MPS	0.173242	0.162027	-0.01121	-0.06474	0.096708	0.097311	0.000602	0.622752
Inequality	0.000804	0.000929	0.000125	0.155343	0.000522	0.000653	0.000131	25.02895
Pool (P)	PBF	PAF	ARC	RRC (%)	PBF	PAF	ARC	RRC (%)
H	0.619673	0.626374	0.006701	1.081315	0.384079	0.509783	0.125704	32.72854
A	0.598811	0.638945	0.040134	6.702348	0.709815	0.687716	-0.0221	-3.1133
MPI	0.371067	0.400218	0.029152	7.856137	0.272625	0.350586	0.077961	28.59631
G	0.669977	0.56508	-0.1049	-15.6568	0.408819	0.454089	0.04527	11.0734
MPG	0.248606	0.226155	-0.02245	-9.0307	0.111454	0.159197	0.047743	42.83628
S	0.326754	0.241111	-0.08564	-26.21	0.14947	0.164666	0.015197	10.16699
MPS	0.121247	0.096497	-0.02475	-20.413	0.040749	0.05773	0.01698	41.67068
Inequality	0.001653	0.001128	-0.00052	-31.7321	0.001042	0.000749	-0.00029	-28.1701

Note: H= Headcount ratio/Incidence; A= Intensity; MPI= Adjusted headcount ratio; G=Gap; MPG=Adjusted poverty gap; S=Severity; MPS=Adjusted squared poverty gap/Adjusted poverty severity; BF = Before attacks; AF= After attacks; ARC= Absolute rate of change; RRC=Relative rate of change.

Source: Field survey, 2024.

Table 3. MPI dimensions of affected households

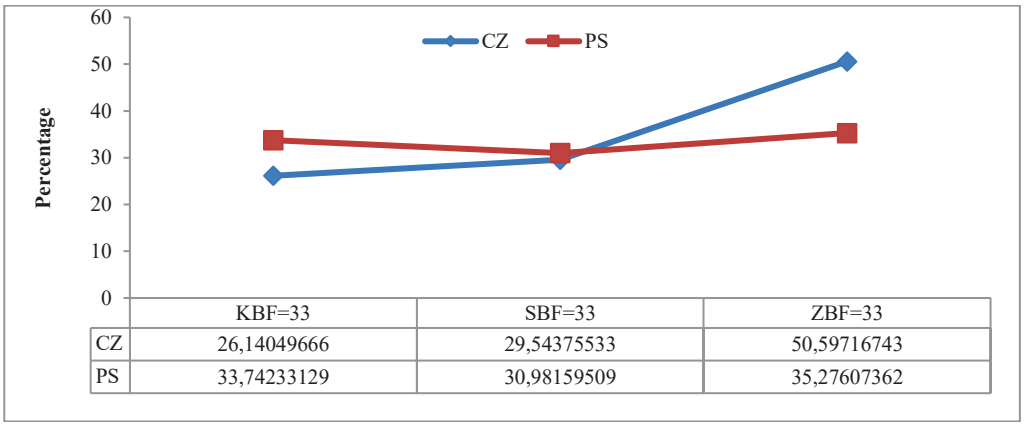
Dimension	Katsina				Sokoto			
	KBF=0.33	KAF=0.33	KBF=0.50	KAF=0.50	SBF=0.33	SAF=0.33	SBF=0.50	SAF=0.50
ED(Index)	0.043816	0.095973	0.021716	0.083461	0.041928	0.017689	0.031628	0.015506
HT	0.041826	0.068648	0.020422	0.063902	0.041676	0.019536	0.038793	0.018417
SL	0.037105	0.070105	0.021802	0.063183	0.049104	0.017801	0.044895	0.016211
EN	0.040748	0.088303	0.019847	0.078044	0.054355	0.017465	0.046854	0.015562
EM	0.031141	0.077584	0.020268	0.070968	0.059807	0.020264	0.049955	0.018115
S	0.051007	0.060019	0.023106	0.056304	0.053851	0.01976	0.048253	0.016626
W	0.041826	0.068289	0.0186	0.058269	0.053124	0.016933	0.042012	0.012819
Total	0.287469	0.528921	0.145762	0.474132	0.353846	0.12945	0.30239	0.113256
ED(%)	15.24197	18.14507	14.89838	17.60293	11.8492	13.66486	10.45928	13.69118
HT	14.54991	12.97889	14.01039	13.47772	11.77801	15.09189	12.82882	16.26137
SL	12.90731	13.25442	14.95757	13.32605	13.87733	13.75135	14.84663	14.31396
EN	14.1747	16.69491	13.61573	16.46041	15.36125	13.49189	15.49455	13.74061
EM	10.83281	14.66832	13.90515	14.96805	16.90212	15.65405	16.52011	15.99446
S	17.74339	11.34747	15.85213	11.87515	15.21887	15.26486	15.95735	14.67972
W	14.54991	12.91092	12.76064	12.2897	15.01321	13.08108	13.89326	11.3187
Total	100	100	100	100	100	100	100	100
	Zamfara				Pool			
	ZBF=0.33	ZAF=0.33	ZBF=0.50	ZAF=0.50	PBF=0.33	PAF=0.33	PBF=0.50	PAF=0.50
ED(Index)	0.083098	0.079497	0.064027	0.07054	0.052743	0.064939	0.036049	0.056879
HT	0.068939	0.077017	0.057513	0.068283	0.048541	0.054017	0.036298	0.049479
SL	0.07516	0.080118	0.061406	0.069223	0.050749	0.054807	0.039943	0.048681
EN	0.078936	0.077942	0.0604	0.064027	0.054945	0.061397	0.039572	0.05305
EM	0.068708	0.075411	0.055751	0.063745	0.050465	0.057419	0.039599	0.051024
S	0.07076	0.081125	0.057106	0.066469	0.056812	0.05171	0.0405	0.045363
W	0.086629	0.088416	0.072946	0.071355	0.056812	0.055931	0.040663	0.04611
Total	0.532228	0.559526	0.429149	0.473642	0.371067	0.400218	0.272625	0.350586
ED(%)	15.61322	14.20785	14.91945	14.89318	14.214	16.22578	13.22304	16.22389
HT	12.95283	13.76468	13.40164	14.41654	13.08152	13.49677	13.31433	14.11331
SL	14.12172	14.31898	14.30888	14.61501	13.6764	13.69433	14.65138	13.8856
EN	14.83116	13.93005	14.0743	13.51795	14.80732	15.34083	14.51514	15.13174
EM	12.90953	13.47762	12.99113	13.45856	13.60004	14.34681	14.52497	14.55399
S	13.29498	14.49889	13.30677	14.03366	15.31036	12.92035	14.85573	12.93925
W	16.27657	15.80194	16.99783	15.06509	15.31036	13.97513	14.91542	13.15222
Total	100	100	100	100	100	100	100	100

Note: ED=Education; HT=Health; SL=Standard of living; EN=Environment; EM=Empowerment; S=Social connectedness/link; W=Wealth.

Source: Field survey, 2024.

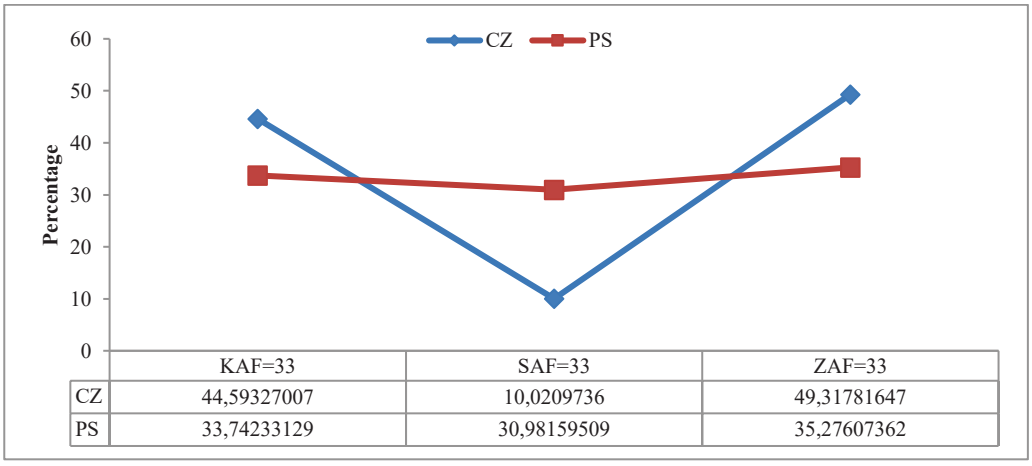
In assessing the contribution of each affected state to the overall poverty of the region (North-West), at a lower poverty level, before the banditry attacks (Figure 7a), except Zamfara State, the contribution to the poverty of Katsina and Sokoto States widely

exceeded their population share. Thus, this indicates that there is a serious unequal distribution of poverty in the region, with some Katsina and Sokoto States bearing a disproportionate share of poverty. In a nutshell, at a lower poverty level, before the attacks, two states (Katsina and Sokoto) experienced a disproportionate share of poverty compared to after the banditry attacks (Figure 7b), when only Sokoto State bears a disproportionate share of poverty. On the other hand, at a higher poverty level, before the banditry attacks (Figure 7c), only Katsina State bears a disproportionate share of poverty, while after the banditry attacks (Figure 7d), only Sokoto State bears a disproportionate share of poverty. Generally, there is a serious unequal distribution of poverty in the North-West region of Nigeria.



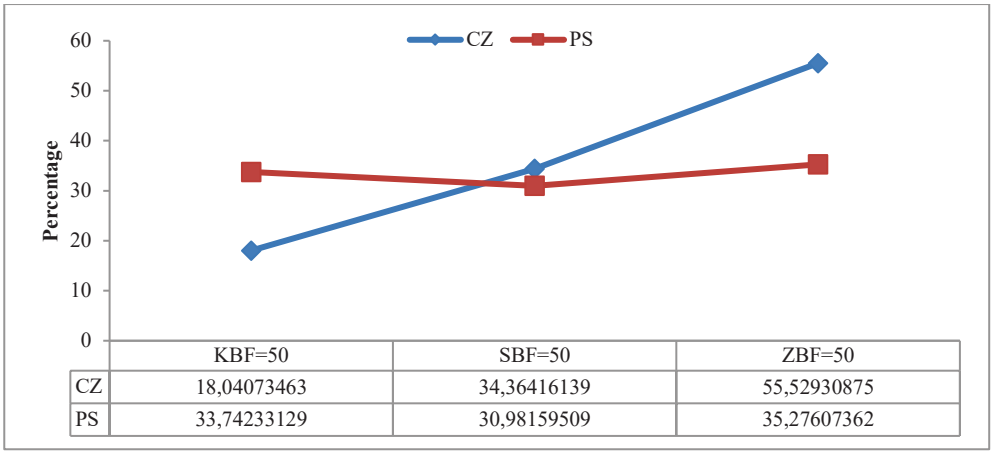
	KBF=33	SBF=33	ZBF=33
CZ	26,14049666	29,54375533	50,59716743
PS	33,74233129	30,98159509	35,27607362

Fig. 7a. States' MPI contribution vs. population share before attacks (k=0.33)



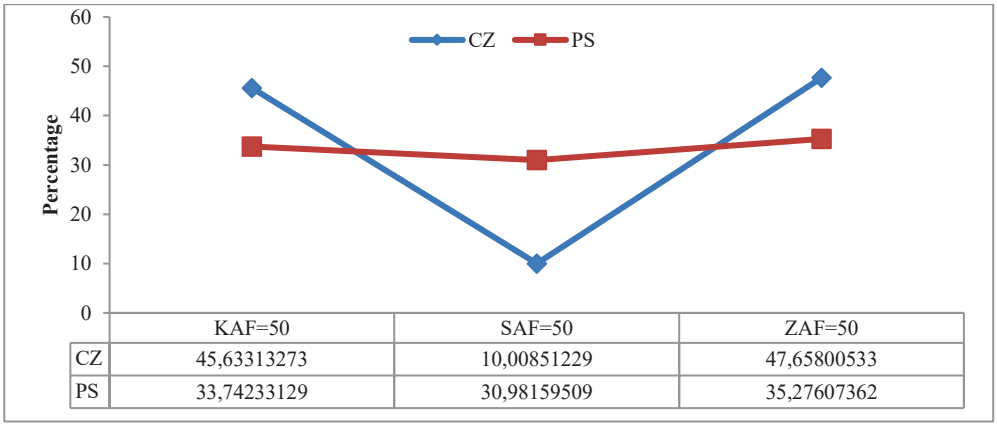
	KAF=33	SAF=33	ZAF=33
CZ	44,59327007	10,0209736	49,31781647
PS	33,74233129	30,98159509	35,27607362

Fig. 7b. States' MPI contribution vs. population share after attacks (k=0.50)



	KBF=50	SBF=50	ZBF=50
CZ	18,04073463	34,36416139	55,52930875
PS	33,74233129	30,98159509	35,27607362

Fig. 7c. States' MPI contribution vs. population share before attacks (k=0.50)



	KAF=50	SAF=50	ZAF=50
CZ	45,63313273	10,00851229	47,65800533
PS	33,74233129	30,98159509	35,27607362

Fig. 7d. States' MPI contribution vs. population share after attacks (k=0.50)

Source: Field survey, 2024.

Conclusion

This study provides a comprehensive analysis of the impact of armed banditry on multidimensional poverty in Nigeria's North-West region, focusing on Katsina, Sokoto, and Zamfara States. The findings reveal that while poverty levels increased significantly in Katsina and Zamfara States, Sokoto State experienced a decline in poverty intensity, likely due to more effective social safety interventions. The rural population, which heavily depends on agriculture and informal trade, has been the most affected, experiencing forced displacement, loss of livelihoods, school closures, and limited access to healthcare. These conditions have worsened economic vulnerability, deepened wealth and education deprivation, and further weakened rural economies, reinforcing a cycle of poverty that is difficult to break without targeted interventions.

Despite a decline in inequality, the persistence of multidimensional deprivation across key indicators highlights the structural and security-related factors driving poverty in the region. The study further demonstrates regional disparities in poverty burdens, with Katsina and Zamfara contributing disproportionately to poverty before the attacks, while Sokoto experienced this burden afterwards. This shift suggests that poverty dynamics are not uniform and that some states have been more effective in implementing social protection measures than others. The persistence of poverty in rural areas, despite these interventions, underscores the need for more inclusive and well-targeted policies to ensure that resources reach the most vulnerable populations.

Addressing poverty in conflict-affected regions requires a multi-pronged approach that integrates security improvements, economic empowerment, social welfare programs, and investments in education and healthcare. Strengthening rural security, expanding social protection schemes, and promoting economic diversification will be critical in reducing vulnerability and fostering long-term resilience. Furthermore, state-specific poverty reduction strategies must be developed to account for local economic strengths and weaknesses, ensuring a more balanced and equitable distribution of resources.

Ultimately, this study highlights the urgent need for coordinated efforts between the government, development agencies, and local communities to mitigate the effects of insecurity and prevent further economic deterioration in the North-West region of Nigeria. Without proactive and sustained policy interventions, poverty will continue to deepen, leaving millions trapped in a cycle of deprivation and economic hardship. By implementing evidence-based solutions, Nigeria can take meaningful steps toward achieving sustainable development and poverty alleviation, particularly in its most vulnerable rural communities.

Policy Implications

1. Strengthening Social Protection Programs: The decline in poverty in Sokoto State suggests that well-implemented social safety nets can effectively cushion vulnerable populations. Expanding conditional cash transfers, food aid, and livelihood programs can mitigate the impact of insecurity-induced poverty.
2. Enhancing Security Measures: Armed banditry has been a major driver of poverty, disrupting economic activities and worsening deprivation. Strengthening community-based security frameworks, intelligence gathering, and rapid response interventions can help restore stability.
3. Investment in Education and Economic Empowerment: The findings show education and wealth deprivation are key contributors to poverty. Policies should focus on revamping educational infrastructure, vocational training, and access to capital for small-scale businesses to promote economic resilience.
4. Regional Development and Equitable Resource Allocation: The unequal distribution of poverty underscores the need for balanced economic development across the region. Government interventions should prioritise infrastructure development, agricultural support, and job creation in the most affected states.

Recommendations

1. Expand Social Safety Nets – Implement targeted intervention programs to support vulnerable households, ensuring effective distribution mechanisms to reach those most in need.
2. Strengthen Security Strategies – Increase funding for security operations, community policing, and conflict resolution mechanisms to curb the impact of armed banditry.
3. Enhance Access to Education – Improve school infrastructure, introduce scholarship programs, and integrate vocational training to equip youth with employable skills.
4. Promote Wealth Creation and Economic Inclusion – Support entrepreneurship, agricultural development, and access to credit facilities, particularly for rural communities.
5. Develop State-Specific Poverty Alleviation Plans – Since the impact of banditry varies across states, customised poverty reduction strategies should be developed based on local economic strengths and vulnerabilities.
6. Improve Data Collection and Policy Monitoring – Establish real-time poverty tracking mechanisms to monitor intervention effectiveness and make data-driven adjustments.

By implementing these measures, the government and stakeholders can alleviate poverty, enhance resilience, and foster sustainable development in the North-West region despite the challenges posed by armed banditry.

References

Adebayo, M., Salisu, T. (2023). The effectiveness of social safety nets in conflict-prone areas: A case study of Sokoto State. *African Journal of Economic Policy*, 15(2), 99-115.

Ajakaiye, O., Adeyeye, V.A. (2021). The persistent challenge of poverty in Nigeria: New dimensions and policy responses. *African Development Review*, 33(4), 289-307.

Akinola, F., Bello, K. (2022). Armed conflict, displacement, and rural poverty: Evidence from Northern Nigeria. *Nigerian Journal of Development Studies*, 14(2), 134-150.

Aliyu, R., Ibrahim, M., Yusuf, A. (2022). Insecurity and food poverty in Northern Nigeria: Empirical evidence from rural households. *Journal of African Development Studies*, 17(1), 55-72.

Alkire, S., Foster, J. (2011). Counting and multidimensional poverty measurement. *Journal of Public Economics*, 95(7-8), 476-487.

Alkire, S., Foster, J. (2021). Counting and multidimensional poverty measurement. *Journal of Public Economics*, 198, 104428.

Alkire, S., Santos, M.E. (2014). Measuring acute poverty in the developing world: Robustness and scope of the Multidimensional Poverty Index. *World Development*, 59, 251-274.

Alkire, S., Roche, J.M., Vaz, A. (2022). Multidimensional poverty and economic shocks: The case of Nigeria. *Oxford Development Studies*, 50(3), 412-430.

Barrientos, A. (2013). Social protection for poverty reduction: Approaches, effectiveness, and challenges. *Development Policy Review*, 31(5), 537-558.

Bartlett, P.L., Boucheron, S., Lugosi, G. (2002). Model selection and error estimation. *Machine Learning*, 48, 85-113.

FAO (2022). Nigeria's agro-ecological challenges and sustainable farming solutions. Retrieved from www.fao.org.

Goodhand, J. (2001). Violent conflict, poverty, and chronic poverty. *IDS Bulletin*, 32(3), 1-12.

IITA (2021). Crop production and food security in the Sahelian region. Retrieved from www.iita.org.

International Crisis Group (2023). Rising insecurity and its economic impact in Nigeria. Retrieved from www.crisisgroup.org.

Justino, P. (2017). Poverty and violent conflict: A micro-level perspective on the causes and consequences. *Journal of Development Studies*, 53(2), 200-216.

National Bureau of Statistics (NBS) (2022). Nigeria's multidimensional poverty index report. Retrieved from www.nigerianstat.gov.ng.

NiMet (2023). Climate trends and variability in Northern Nigeria. Retrieved from www.nimet.gov.ng.

Ogunleye, J., Akinola, F., Bello, K. (2022). State-level disparities in multidimensional poverty in Nigeria: An empirical assessment. *Nigerian Journal of Social and Economic Research*, 14(2), 134-150.

Okonkwo, C., Usman, L. (2023). Armed banditry and its impact on poverty in Northern Nigeria: A case study of Katsina and Zamfara States. *Conflict and Development Review*, 12(1), 78-96.

Oladipo, J., Adeola, R., Femi, A. (2023). Regional disparities in poverty outcomes in Nigeria: A state-level analysis. *Nigerian Journal of Economic Research*, 16(1), 50-72.

Sadiq, M.S., Singh, I.P., Ahmad, M.M. (2020). Rice yield differentials between IFAD participating and Non-Participating farmers in Nigeria's Niger state. *Economic Affairs*, 65(4), 559-573.

Sadiq, M.S., Sani, B.S. (2022). Lıvelıhood status of paddy rıce agro-processors that benefıtted from mıcrofınance credıt in Jıgawa State of Nıgerıa. *Bozok Journal of Agriculture and Natural Sciences*, 1(2), 71-94.

Sadiq, M.S., Singh, I.P., Ahmad, M.M., Bala, U.M. (2023). Food insecurity resilience capacity of rural households in the face of induced-weather extremities in Bauchi State of Nigeria. *Problems of World Agriculture*, 23(3), 20-44.

Sadiq, M.S., Singh, I.P., Ahmad, M.M., Bala, U.M. (2024a). Livelihood Vulnerability Resilience Capacity of the Rural Economy in Nigeria's Bauchi State. *Alexander Journal of Agricultural Science*, 69,1, 98-122.

Sadiq, S., Singh, I., Ahmad, M., Moses, G. (2024b). Multidimensional poverty status correlates of rural households in Kaduna state of Nigeria. In: Sürmen, M. and Seydoşoğlu, S. (Eds.), Proceedings of ISPEC 15th International Conference on Agriculture, Animal Sciences and Rural Development, held on June 12-14, 2024 - Aydin/ Türkiye.

UNDP (2023). Human Development Report 2023: Multidimensional poverty and resilience. Retrieved from www.undp.org.

UNESCO (2022). Education and development challenges in Nigeria's northern states. Retrieved from www.unesco.org.

UNICEF (2023). Education under attack: The impact of insecurity on children's learning in Nigeria. Retrieved from www.unicef.org/nigeria.

United Nations (2023). Sustainable Development Goals Report 2023. Retrieved from www.un.org/sdgs.

United Nations Development Programme (UNDP) (2023). Human Development Report 2023: Multidimensional poverty and resilience. Retrieved from www.undp.org.

World Bank (2023). Nigeria economic update: Conflict, climate change, and poverty dynamics. Retrieved from www.worldbank.org.

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Appendix

Appendix 1: Dimensions, indicators, cut-off points and relative weight of MPI

Dimension	Indicator (Deprivation cut-off)	Weight
Education	No member of the household has completed five years of schooling before/after the attacks	1/14
	No school-age child (1-6 years) in the household attended school before/after the attacks	1/14
Health	Any family member that is underweight (slim) or overweight (obesity) before/after the attacks	1/28
	No family member is immunised/vaccinated to prevent any type of communicable diseases before/after the attacks	1/28
	Any pregnant women in the household with less than four (4) antenatal care visits before/after the attacks	1/28
	No member of the household that is insured under any type of health insurance scheme before/after the attacks	1/28
Standard of Living	Living in an inadequate housing condition before/after the attacks	1/35
	No access to electricity before/after the attacks	1/35
	No access to safe drinking water before/after the attacks	1/35
	Did not own any type of motor vehicle for transportation purposes before/after the attacks	1/35
	Did not possess a savings bank account before/after the attacks	1/35
Environment	Household still practising open defecation before/after the attacks	1/14
	Household using dirty fuel as primary energy for cooking (e.g. firewood, dung & charcoal) before/after the attacks	1/14
Empowerment	Household unable to take healthcare decisions before/after the attacks	1/35
	Household unable to prevent domestic violence before/after the attacks	1/35
	Did you have any social/political unrest problems before/after the attacks	1/35
	Did you have any personal security problems before/after the attacks	1/35
	Household unable to take any type of employment decisions for themselves other than farming activities before/after the attacks	1/35
Social link	Did not participate in off-farm activities before/after the attacks	1/28
	Household head has not participated in any type of community-level activities before/after the attacks	1/28
	Household has not been involved in organising any type of community-level activities before/after the attacks	1/28
	Didn’t trust government social investment programmes (e.g. Farmer Moni/Trader Moni, etc.) before/after the attacks	1/28
Asset/Wealth	Ownership of dead stock before/after the attacks (e.g. tractor, truck, car, cart, plough/harrow/ridger, mould-board plough, generator set, irrigation pumping machine, knapsack sprayer) - deprived if dead stock is less than the weighted average	1/28
	Livestock ownership before/after the attacks (deprived if TLU is less than the weighted average)	1/28
	Household didn't own agricultural land before/after the attacks	1/28
	Didn’t own any hectare of residential land other than where he/she is residing before/after the attacks	1/28

Source: Modified from Sadiq and Sani (2022); Sadiq et al. (2024a, b).