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Economic Inequality and Poverty Dynamics: What does Literature tell us?

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Abstract: The purpose of this study is to explore the intricate relationship between economic inequality and poverty dynamics, with a focus on understanding how disparities in wealth and income influence the movement of individuals and households into and out of poverty over time. The study employs a comprehensive literature review methodology, analyzing existing empirical and theoretical research to assess various approaches to measuring economic inequality and poverty dynamics. The findings reveal that economic inequality is a critical determinant of poverty transitions, with evidence suggesting that inequality both exacerbates poverty and is sustained by it. The directionality of the relationship remains a subject of debate, with different studies presenting conflicting views—some indicating a negative correlation, others a positive, bidirectional, or inconclusive relationship. The study concludes that the persistent lack of consensus in the literature is partly due to the complexities and limitations of data, particularly in developing countries where longitudinal data sets are scarce. The implications of these findings are significant for policymakers and researchers, as they underscore the need for more robust and context-specific data collection methods. Additionally, the study suggests that addressing economic inequality is crucial for effective poverty alleviation strategies, particularly in regions where inequality is most pronounced.

Keywords: Multidimensional, Poverty Dynamics, Income inequality, Economic Inequality, Gini index, per capita consumption

1. Introduction

The dynamics of economic inequality and poverty are concepts intrinsically linked to temporal changes (Fosu, 2017; Marrero and Serven, 2018). Inequality and poverty represent significant challenges in both international development and social contexts, impacting numerous countries globally. Economic inequality refers to the disparities in income and wealth between the rich and the poor. While some studies suggest that greater inequality exacerbates poverty, others argue that inequality can reduce poverty by driving economic incentives. This divergence highlights that the relationship between poverty and inequality is complex and indirect (Beteille, 2003). Rather than being straightforwardly connected, poverty and inequality are distinct concepts with their own independent dynamics. Inequality manifests in various forms, including financial disparities, gender gaps, unequal opportunities, and differences in living standards, such as access to health and energy resources (Brunori et al., 2019; Ramosa et al., 2020). In Nigeria, the coexistence of poverty and inequality amidst economic prosperity remains a perplexing issue (Kolawole and Omobitan, 2015), described as poverty in the midst of plenty and inequality despite economic growth. Many researchers have used household consumption per capita as a proxy for measuring poverty (Garza-Rodriguez, 2018; Ho and Iyke, 2018). The literature has seen the development of dynamic models to study the interaction between poverty and inequality (Bigsten and Shimeles, 2008; Adepoju, 2012; Katsushi and Jing, 2014; Akerele et al., 2017; Obayelu et al., 2021).

The primary objective of this study is to review the literature on the relationship between economic inequality and poverty dynamics. Specifically, the study identifies various approaches to measuring inequality and poverty dynamics, explores data requirements and limitations, examines the factors driving inequality, and analyzes the processes through which households enter, exit, or remain in poverty over time. Additionally, the study provides empirical evidence using a power and stakeholder mapping matrix to understand the influences on inequality and poverty transitions, focusing on Nigeria as a case study.

Accurate measurement of inequality and poverty dynamics, along with their driving factors, is essential for informed decision-making. These measurements must be robust, technically sound, and aligned with practical policy considerations to enable decision-makers to target critical intervention areas effectively. However, a knowledge gap persists in understanding the nuanced relationship between poverty and economic inequality. This gap is primarily due to the lack of longitudinal data that tracks and collects meaningful information from individuals and households. As a

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result, only a few studies, such as those by Krishna (2004) and Bigsten and Shimeles (2008), have investigated inequality or poverty dynamics, particularly in developing nations like those in Sub-Saharan Africa.

To move beyond mere correlation studies of poverty based on static data, it is crucial to examine poverty dynamics, which offers deeper insights into the causes of poverty. Poverty rates can fluctuate from year to year, and even if overall poverty rates appear stable, the proportion of the population at risk of falling into poverty or experiencing temporary poverty could be much higher. Income inequality is a significant factor in poverty, as noted by Adeleye et al. (2020).

Previous empirical studies, such as those by Stoyanova and Tonkin (2018), have primarily focused on the relationships between economic growth, poverty reduction, and inequality. These studies often overlook the complex causal relationships between poverty dynamics and economic growth, particularly in contexts with high-income mobility, like Nigeria. This study addresses the knowledge gap caused by insufficient dynamic data on poverty and inequality. It contributes to the empirical literature by providing a comprehensive analysis of the measurements and correlations between economic inequality and poverty dynamics, offering valuable insights into the global challenge of reducing poverty and inequality, in line with the Sustainable Development Goals (SDGs) for 2030.

2. Literature Review

Inequality The relationship between inequality and poverty is complex and multifaceted, as highlighted by numerous scholars and studies (Beker, 2020). Simon Smith Kuznets' work stands as one of the most influential theories describing the interplay between poverty, income inequality, and economic growth. Kuznets (1955) posited that inequality initially increases with rising per capita income but eventually declines as a nation reaches higher stages of economic development. This inverted U-shaped curve, commonly known as the Kuznets curve, suggests that economic growth is initially accompanied by greater inequality, which later stabilizes and decreases.

In discussions on income distribution, the terms "inequality" and "poverty" are frequently conflated (Beker, 2020). While inequality pertains to the overall distribution of wealth or income within a society, poverty is specifically concerned with individuals or households whose income falls below a certain threshold, often referred to as the poverty line. This distinction is crucial, yet often overlooked, leading to the assumption that addressing inequality alone will directly reduce poverty, and vice versa.

Beker (2020) argues that inequality impedes poverty alleviation by negatively affecting the growth elasticity of poverty. Essentially, as inequality increases, the capacity of economic growth to reduce poverty diminishes. This view is supported by Besley and Burgess (2003), who found a positive and significant correlation between inequality and poverty levels within a country. Their research suggests that as the share of national income controlled by the wealthy increases, the income available for the rest of the population decreases, leading to a higher incidence of poverty.

McKay (2002) further differentiates between inequality and poverty by emphasizing that while inequality concerns the entire distribution of wealth, poverty is solely focused on those falling below the poverty line. This perspective is crucial in understanding the nuances of the relationship between inequality and poverty and highlights the need for targeted policies that address both issues distinctly.

Hassan et al. (2015) introduced a triangular relationship between poverty, income inequality, and economic growth, demonstrating the negative interplay between these variables. Their model suggests that as income inequality widens, the incidence of poverty worsens, while economic growth tends to mitigate rising poverty rates. This intermediary relationship underscores the importance of income redistribution and economic growth in reducing poverty over time. By increasing the movement of individuals out of poverty and decreasing the movement into poverty, income redistribution can serve as a powerful tool in poverty alleviation.

Basu (2005) introduced the concept of "poverty-minimization inequality," which refers to the level of disparity a society should tolerate to effectively reduce poverty. He argued that a society characterized by absolute equality would, paradoxically, be extremely poor, as it would lack the incentives for economic advancement. Alvaredo and Gasparini (2013) found that the relationship between poverty and inequality is not as straightforward as often assumed, noting a weak correlation between the two in their studies. This finding further complicates the understanding of how inequality and poverty interact and suggests that other factors, such as social policies and economic structures, play significant roles in shaping this relationship.

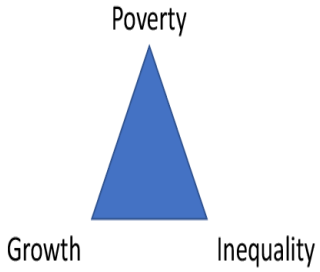

Figure 1: Nexus in Poverty-Growth-Inequality**.** Source: Bourguignon (2004)

3. Methodology

This study employed a bibliographic research methodology to explore the intricate relationship between economic inequality and poverty dynamics. Data and information were systematically collected from a range of sources, including academic databases, internet resources, and grey literature. The research focused on several key areas: the theoretical and conceptual frameworks that define the relationship between economic inequality and poverty dynamics, the methods utilized for measuring these phenomena, the strengths and limitations of these measurement techniques, and empirical studies that have investigated these links. Additionally, the study scrutinized the data requirements necessary for such research, identifying potential gaps and limitations. The gathered documents were meticulously evaluated to extract pertinent insights, with the aim of contributing to the academic discourse on the intersection of economic inequality and poverty and providing a comprehensive understanding of the factors influencing these complex socio-economic issues.

4. Results Findings

4.1 Approaches To Poverty Dynamics

The use of single-dimensional measures, such as Foster, Greer, and Thorbecke's (1984) alpha poverty metrics, continues to dominate poverty measurement. Foster et al. (1984) employed the FGT poverty measures to assess households' current poverty status based on mean household per capita spending or income, overlooking the dynamics of poverty. These poverty measurements cannot determine whether high poverty rates stem from 'structural poverty' (lack of resources) or 'poverty risk' (large uninsured income volatility), which is crucial information for policymakers. The Multidimensional Poverty Index (MPI), established by Alkire and Foster (2011), represents an effort to assess poverty across multiple dimensions. The MPI operationalizes Amartya Sen's capability approach (Ivanov and Kagin, 2014), conceptualizing poverty as a deficiency in basic necessities such as food, shelter, education, health care, safe drinking water, and sanitation, all of which are essential for a decent, normal, and effective life. The MPI allows each country to select its own poverty indicators and dimensions, providing flexibility in its application (Alkire and Foster, 2011).

Transition tables between successive poverty states are consistently used to investigate poverty dynamics (Bane and Ellwood, 1986). However, due to possible measurement errors, poverty states may inaccurately classify individuals as poor or non-poor, leading to imperfect measurements of 'persistent poverty.' Transition matrices, while effective for determining the extent to which households move in and out of poverty, do not provide insight into the severity of poverty or comfort levels of households, and inaccuracies in income estimates can lead to misclassification.

Several approaches have been employed to analyze poverty dynamics, depending on the study's focus and the availability of data. These approaches include (i) components-of-variance models (Devicienti, 2001); (ii) hazard rate models (Aassve et al., 2006); (iii) Latent Markov chain transition models; (iv) dynamic discrete choice models (Weon and Rothwell, 2020); and (v) decomposition methods (Dickens and Ellwood, 2001). Each of these techniques has its own advantages and limitations.

The 'component approach' and the 'spells approach' are two methods for distinguishing between chronic and transitory poverty. The 'component approach' classifies a household as chronically poor based on its average income over time, while the 'spells approach' counts the number of times a household has experienced poverty (Martinez, 2016).

When multiple surveys are conducted regularly, hazard models and random-effects probit models are used to analyze transitions between different poverty states. The hazard model is particularly useful for exploring duration dependence, while the random effects model is better suited for investigating randomness. The probit model is often employed when researchers are interested in state dependence.

According to the concept of a latent Markov chain, true poverty states behave like a Markov chain, with response matrices linking observed poverty levels to actual poverty states. These matrices represent the probabilities of observing different poverty states for various true (latent) conditions. If actual poverty states behave like a Markov chain and there are no measurement errors, the response matrices should resemble the identity matrix. This method has been used in several empirical studies to analyze poverty dynamics (Baulch and McCulloch, 2002; Adepoju, 2012; Obayelu et al., 2021).

4.2 Approaches To Measuring Economic Inequality

Inequality metrics assess the extent of economic disparity within a country or region and track how this disparity changes over time and across different locations. Decomposability is a crucial issue in the literature on inequality measures, referring to the ability to discern the contribution of each source to overall inequality. Two methods for addressing this problem are (i) the 'Shapley value' from the Shapley decomposition introduced by Shorrocks (1999) and (ii) the 'balance of inequality' (BOI) approach proposed by Di Maio and Landoni (2017). The Shapley decomposition measures the difference in the inequality index value between the observed and reference scenarios, where income does not vary with the factor in question.

Comprehensive treatments of inequality measurement theory were developed in the 1970s by Atkinson (1970) and Sen (1973), with later updates by Foster and Sen (1999). Commonly used inequality measures include the Atkinson index, Theil index, Kuznets ratio, Palma index, and Gini index. The Kuznets ratio is calculated by

dividing the income of the top fifth of the population by the income of the bottom two-fifths. The 50:10 ratio measures income inequality between the median income and the bottom half, while the 90:50 ratio measures income disparity between the top and middle income earners.

The Palma index is derived by dividing the total income of the top 10% of households by the total income of the bottom 40%. This index emphasizes the role of extreme income disparities in driving overall inequality. The 90:10 ratio combines the 90:50 and 50:10 ratios, reflecting the income disparity between the wealthiest and the poorest segments of the population. The percentage of income flowing to the top 1% of earners is also a measure of income concentration among the wealthiest individuals. The Theil index measures the variance between an individual's (or group's) weight in the population and their income's weight in total income. An index value of 0 indicates absolute equality, while an index of 1 indicates extreme inequality.

The Gini index is a widely recognized measure of inequality that assesses income distribution across a population relative to its size (Adeleye et al., 2020). Based on the Lorenz curve, which illustrates inequality by comparing the distribution of income to the population, higher Gini index values indicate greater inequality, and vice versa. The Gini index is particularly valued for its robust properties: (1) the index remains unchanged if all incomes are doubled; (2) it is unaffected by changes in population size if income concentration stays constant; (3) the index is unaffected by income swaps between individuals; and (4) the index decreases if a wealthier individual transfers income to a less wealthy individual. Despite its strengths, the Gini coefficient is not subgroup-consistent, meaning it may not accurately reflect changes in inequality within subgroups, especially when income ranges overlap.

The Atkinson index, ranging from 0 (complete equality) to 1 (complete inequality), addresses the question: "What fraction of income would society be willing to forgo to achieve a truly equal distribution of income?" This index provides valuable insights into societal preferences for equity. Each of these indices has its merits and demerits and can be used individually or collectively to analyze inequality within and between groups based on their specific applicability.

4.3 Empirical Review Of Literature

Empirical studies on poverty dynamics are limited due to the lack of sufficient panel data at both the macro and micro levels in most developing countries. Early studies were hindered by the absence of panel data, which would allow for tracking poverty transitions over time. Until recently, poverty dynamics were primarily studied at the national level rather than at the household level. Although panel data are ideal for analyzing poverty overtime at the micro level, cross-sectional data have been widely used for national-level analyses (Gunther, 2017). Some earlier studies relied on cross-sectional living standard measurement surveys (LSMSs), which were more readily available.

Greater income disparity is associated with higher poverty rates (Payne et al., 2017), and increases in income inequality are linked to increases in poverty, according to empirical estimates. Studies have found that changes in employment status, rather than changes in family structure, are more commonly associated with transitions into and out of poverty. Public taxes and transfers have a significant impact on poverty transitions and persistence in EU member states but are less influential in the United States.

Luttmer (2021) measured poverty dynamics and inequality in transition economies using instrumental variable approaches, decomposing income into transient and permanent components. The findings showed that, after accounting for transient shocks, over 80% of the poor in both Russia and Poland remained poor for at least one year.

Imimole (2021) evaluated the relationship between economic growth, population growth, poverty, and inequality. Annual time series data from 1980 to 2019 were analyzed using the Granger Causality test, and the existence of long-run relationships between variables was tested using the Autoregressive Distributed Lag (ARDL) bound test. The short-run dynamics were analyzed using the Error Correction Mechanism. The study found a one-way causality relationship between poverty and inequality and between GDP growth and population growth. Additionally, a long-term positive association was observed among these variables, with inequality positively impacting poverty and GDP growth positively affecting poverty in the short run. The study recommended policies aimed at reducing inequality, particularly through poverty reduction measures and expanded access to affordable healthcare services.

Between 2008 and 2017, Zizzamia et al. (2019) used all five waves of data from the National Income Dynamics Study to analyze poverty dynamics and inequality in South Africa comprehensively. Ewubare and Okpani (2018) examined the relationship between poverty and income inequality in Nigeria from 1980 to 2017, using the Ordinary Least Squares method, unit root tests, cointegration, the error correction model, and the Granger causality test. Their findings indicated that the national poverty index was positively related to inequality but was not statistically significant.

Ajibola, Loto, and Enilolobo (2018) empirically examined poverty and inequality in Nigeria and their implications for inclusive growth from 1980 to 2013. Their findings revealed that inequality negatively impacts poverty. As the economy grows, government spending on healthcare increases, inequality rises, and poverty declines. This contrasts with Khan et al. (2014), who found that income inequality increases poverty while economic growth reduces it. Ogbeide-Osaretin (2018) investigated the link between poverty, growth, and

inequality in Nigeria, focusing on the existence and direction of causality. Using a five-year panel framework, the study revealed a positive and significant relationship between inequality and poverty.

From 1981 to 2005, Gries and Redlin (2010) used the Gaussian Mixture Model (GMM) estimation method to analyze the dynamics of growth, inequality, and poverty in a panel of 114 developing countries across six geographical subpanels. The findings indicated a positive bidirectional causality between growth and inequality, as well as between inequality and poverty, and a negative bidirectional causality between growth and poverty.

Apergis et al. (2011) used a multivariate approach to analyze a panel data set of 50 U.S. states from 1980 to 2004, exploring the causality between income inequality and poverty. The findings revealed a bidirectional relationship between poverty and income inequality in both the short and long term. Mbanasor et al. (2013) examined income inequality and poverty dynamics among rural agricultural households in Abia State, revealing significant inequality, with per capita income falling below the national minimum wage.

In their study on 'poverty dynamics and income inequality in the eastern Brazilian Amazon,' Guedes et al. (2012) used household-level data from a representative sample of small farmers between 1997 and 2005. They discovered a direct link between poverty and inequality among small farmers, despite more pronounced poverty reduction among new owners and greater inequality reduction among original settlers.

Alazzawi (2010) provided a detailed analysis of poverty and inequality dynamics in Egypt using a nationally representative panel survey conducted between 1998 and 2006. Oxfam International's 2017 report on inequality in Nigeria highlighted the alarming levels of economic inequality, with regional disparities particularly high in the country's northwestern states. The report estimated that the wealth of Nigeria's richest man could lift 2 million people out of extreme poverty for one year.

The National Bureau of Statistics (NBS) released its '2019 Poverty and Inequality in Nigeria' report, using National Living Standards Survey (NLSS) data. The report found that approximately 83 million people, or 40% of the population, live below the poverty line of N137,430 (approximately USD 381.75) per year. Cingano (2014) examined the impact of inequality in human capital on economic growth, finding that increased financial disparities hinder skill development among individuals with lower parental education, both in terms of quantity and quality (such as skill proficiency).

Onwuka (2021) studied the relationship between poverty, income inequality, and economic growth in Nigeria using time series data from the National Bureau of Statistics (NBS) and the Central Bank of Nigeria (CBN) Statistical Bulletin between 1981 and 2019. The results indicated that income inequality negatively affected economic growth, while poverty had a positive relationship with growth.

Nuruddeen and Ibrahim (2014) used secondary time series data from 2000 to 2012 to examine the relationship between poverty, inequality, and economic growth in Nigeria. Their findings revealed a bidirectional causal relationship between literacy inequality and poverty.

5. Discussion

5.1 Determinants Of Inequality

The econometric modelling of inequality drivers is based on the theoretical growth-inequality-poverty triangle model (Dhrifi, 2015). Several factors identified in the literature that influence income inequality include per capita GDP, per capita health spending, tax pressure, the poverty rate, the size of the government budget and the portion allocated to subsidies and transfers, the share of the agricultural sector in the total labour force, literacy rates, and the availability of human and land resources. Aghion et al. (1999) highlighted technological change as the primary driver of increasing inequality. Justino and Litchfield (2003) suggest that Kuznets waves (inequality rises, falls, and then rises again) are primarily driven by technological revolutions. This study recommends the variables listed in Table 1 for operationalization when modelling inequality drivers.

Table 1: Drivers of Inequality and A priori Expectations

	Definition of a variable	Unit of measurement	A priori Expectation
Inequality (Income/ health)	Within and between different groups in society, there is an unequal distribution of income and opportunity.	'Inequality index' = 0 (implies total equality) and the index =1 (implies total inequality)	
Socioeconomics			
Household educational level	Years of schooling	Year	-
Employment Level			-
Gender	Whether the household head is a male or female	A dummy variable (1 if the respondent is male; otherwise, 0)	±
Age	Age of the Head of Household	year	+
Age-square	Nonlinear relationship of age	year	+

Household Size	Member of the household making decisions and eating and living under the same roof.	Number of persons	±
Poverty Rate	Poverty Status	Dummy (1 if poor, 0if non-poor)	±
Intervening variables			
Government policy	Tax rate	If not available directly from the taxpayer, revenues as a share of GDP can be used.	-
Cost of governance	The total amount of budget per year	Naira value	±
Macroeconomic Indicators	Definition of a variable	Unit of measurement	A priori Expectation
GDP per capita	GDP/Population Size	Naira	-
Price rise level	Proportion of surge or reduction in prices during a definite time	Percentage	+
Real exchange rate	The exchange rate of one country's currency against that of another.	Percentage	+
Investment Level	Number of productive assets		+

Source: Computed by the authors based on the theory and empirical literature in 2022

5.2 Poverty Dynamics' Drivers And Modeling

Poverty Poverty often results from a lack of social protection, care, and assets. Understanding the factors that help families escape poverty and those that contribute to their descent into poverty is crucial for developing effective national poverty eradication policies. In a well-targeted anti-poverty policy, household characteristics (such as size, composition, and educational attainment) significantly impact poverty dynamics.

The multinomial logit (MNL) model, frequently used to analyze poverty dynamics (as seen in studies by Bigsten et al., 2008, and Obayelu et al., 2021), has limitations. These include the "Independence of Irrelevant Alternatives (IIA)" assumption, which ensures that the odds ratio is unaffected by other factors; the "Independently and Identically Distributed (IID)" assumption, which eliminates heterogeneity causing variance and covariance; and the ordered nature of its results. The MNL model involves creating a polytomous variable for individuals who have risen out of poverty and those who have remained in poverty, focusing on their correlates. To address these limitations, models such as the sequential logit model, which adds structure to poverty dynamics, and the nested logit model, which allows for more variability in variance and covariance, can be used (Baulch and Vu, 2011). Other alternatives, such as ordered logit (or probit) and stereotype logistic models, also help to circumvent the drawbacks of the MNL model. The MNL model is particularly appropriate when the focus is on the mobility of the poor and only a short panel of survey data is available, a common scenario in developing countries with limited panel data.

Akerele et al. (2017) used panel data from the World Bank, collected during the post-planting season of 2010 and the post-harvest period of 2011, to analyze poverty transitions and their determinants in rural Nigeria. Their findings, using Markov chain and probit regression, revealed that higher educational attainment and involvement in crop-livestock production significantly reduce the likelihood of a household entering or remaining in poverty. In contrast, an increase in the number of adolescents and sole reliance on crop production, along with geospatial factors, significantly depresses the chances of escaping poverty. Aassve et al. (2006) and Burgess and Propper (1998) demonstrated that poverty transition is influenced by economic and demographic factors affecting households.

Justino and Litchfield (2003) utilized the Markov model of poverty transitions and the multinomial logistic regression model to examine poverty dynamics and drivers, identifying four poverty transition scenarios: (i) poor in both periods, (ii) not poor in the first period but poor in the second, (iii) poor in the first period but not in the second, and (iv) not poor in both periods. Beccaria et al. (2011) calculated the "Relative Risk Ratios (RRR)," indicating the likelihood of a household experiencing one of four mutually exclusive outcomes, normalized by dividing these likelihoods by the chance of experiencing any other state. Adepoju (2012) found that education, household size, the number of assets owned, and land ownership influenced both transient and chronic poverty. The MNL model's categorical outcomes, which do not consider the natural order of poverty transitions, limit its applicability.

Teguh and Nurkholis (2011) employed the ordered logit model to assess household poverty status in Indonesia, identifying factors such as educational achievement, household size, physical assets, employment status, health shocks, access to electricity, changes in the working sector, and participation in microcredit programs as significant influences on poverty dynamics. Bokosi (2007) examined poverty dynamics among Malawian households between 1998 and 2002 using a bivariate probit model with endogenous selection to address the initial conditions problem. The study revealed that the education of the household head, per capita acreage cultivated,

and changes in household size were significantly related to the likelihood of being poor in 2002, regardless of the poverty status in 1998. According to the OECD (2001), changes in work status are more often associated with movements into and out of poverty than changes in family structures, despite their close relationship.

4.3. Development of Software to Measure Inequality and Poverty

Software for estimating inequality and poverty, along with associated sampling variances, has become more widely accessible. Researchers now have access to free standalone programs, the most notable being the "Distributive Analysis Stata Package (DASP 2.1)" developed by Araar and Duclos (2009), which is integrated with "STATA 10." Numerous free software packages are available that can be used in conjunction with general-purpose statistical software like Stata (Jenkins, 2006).

4.4. Measurement Issues in Inequality and Poverty Dynamics

Measuring poverty and inequality involves a multitude of methodological decisions (Pizzolitto, 2005). Some of these decisions are grounded in theoretical considerations, such as choosing a dimension to define poverty (income/consumption, basic needs, endowments), selecting a poverty line, and determining an aggregate approach like a poverty index. Similarly, to measure inequality, comparable judgments are required. The extensive literature on poverty and inequality indicators underscores the complexity of these issues. At a more practical level, methodological decisions must address the empirical implementation of these measurements, which is often not straightforward. The statistics may be prone to biases due to income nonresponse and under-reporting. Additionally, the components included in household income can vary across countries and even over time within a single country.

In the context of income distribution and inequality measures such as the Gini coefficient, spurious fluctuations in income have been a prominent concern (Slemrod, 1992). Within income inequality, these spurious changes can result in higher earnings mobility and consequently, greater inequality. The latent Markov chain approach has been identified as a useful tool to manage spurious changes within a discrete poverty state context.

4.5. Data Requirements and Limitations

Poverty dynamics are characterized by frequent in-and-out movements. To thoroughly examine the dynamic aspects of poverty, extensive panel data on income and consumption are required. However, in many developing countries, such lengthy panel data do not exist, and researchers must often rely on cross-sectional surveys (or panels with only two or three waves), which contain either income or consumption data. Panel data allow for a more detailed examination of poverty entry and exit points (Suppa, 2017).

Panel data could provide essential insights into whether poverty-eradication measures are effective, who benefits from these measures, and why. Such data can be used to identify and measure trajectories into and out of poverty, and to determine what drives household transitions over time. Additionally, panel data can help identify individuals who are chronically impoverished, and unable to escape poverty year after year. The use of household panel data is crucial for determining whether this is the case and, if so, for identifying those who are consistently left behind. Moreover, panel data can reveal critical information on the causes of poverty.

A study in Albania utilized a synthetic panel methodology to investigate household transitions into and out of poverty due to the scarcity of panel data (UNDP, 2017). The Household Budget Survey was used to generate synthetic panel (HBS) data for the years 2008 and 2014. According to Dang et al. (2014), synthetic panels are generated by estimating household consumption in a future year (or a previous year) and transforming two or more cross-sections of household survey data into a panel dataset.

4.6. Identification of Relevant Power and Stakeholders that Influence Inequality and Poverty Dynamics in Nigeria

The results of this study have identified several actors who could play crucial roles in addressing inequality and facilitating the transition from poverty for households in Nigeria. These actors include the government, judiciary, politicians, media, non-governmental organizations, civil society organizations (CSOs), investors, financial institutions, local or community leaders, household members, technology managers, and academia (Table 2). It is evident that these parties, whether individually or collectively, can significantly influence inequality and poverty incidences at both micro and macro levels.

Table 2: Power and stakeholder mapping matrix of relevant actors influencing inequality and poverty dynamics in Nigeria

Stakeholders Groups	Key Concerns	Interest	Influence and expectations
Government at all levels (legislative, executive members)	(i) Legislative framework on project funding and policy regulation, such as taxes	(i) Redistribution from high-income to low-income. (ii) Increase economic inclusion	(i) Social protection policies, including progressive taxation. (iii)Policy certainty and stability.

Judiciary	(i)Enforcement of antidiscrimination laws	(i)Enforcement of the rule of law.	(i) Interprets laws, applies them to specific circumstances, and evaluates whether they are in conflict with the Constitution.
Politicians	Political participation in reducing inequality between all regions of the country	Fair opportunities and protection for all members of society, and not just people who voted for them or are being represented	Creation of decent work in a society with higher incomes
The Media	(i) Public concern (ii) education of the masses;	(i) increase the connections between people and the environment in which they can share your opinions	Direct access to accurate information
Civil Society Organisation	(i) Ensure justice and fairness (ii) engrossed in advocacy and bargaining unusual policies for government, the private sector, and other institutions.	(i) Monitor government activities and political processes and embrace authorities liable for performing sensibly and in harmony with the rule. (ii) Make every effort to create valuable developments in people's social, economic, political, and cultural lives.	(i)Drive national governments for regulations that encourage equality. (ii) Protect the delivery of basic services, protect, and support human rights.
Non-Governmental Organisations (NGOs)	(i) acts as an intermediary between society and the government, assessing the needs of individuals; (ii) Project funding.	Involvement in various aspects of community development such as community mobilization, promotion of child's rights law.	(i) Human Empowerment Through Capacity Building (ii) Engage in lobbying governmental actors for social, economic, and political change.
Investors	(i) Investment in universal access to healthcare and education (ii)Build assets for working families; (iii) Investment in economic infrastructure	(i) Look at ways to improve low wage scales and unsafe working. conditions, and labor standards violations	Fair labor standards, access to collective bargaining, and quality job creation
Financial institutions	Empowerment of all categories of people through financial inclusion.	Financial inclusion to assist in solving the problem of inequality	(i) Promotion of a more inclusive financial system. (ii) Expand financial literacy programs and activities. (iii) Incentivise providers to deploy ATMs and POS in rural communities. (iv) Create incentives for MFBs to focus on serving rural communities.
Community Leaders and members of households	Promote the integration of hazard mitigation within the community.	Mobilize and guide others.	Aid in the development of grassroots innovations,
Technology managers and academia	Fostering innovation and efficiency	Improve the relative position of skilled workers	Human Development

Source: Compiled by the authors, 2022

6. Conclusion

This article reviewed various empirical methodologies to analyze poverty dynamics and inequality, unpacking the relationships between economic inequality and poverty in terms of the movement of people into and out of poverty over time. The empirical findings on economic inequality and poverty dynamics are highly inconclusive, as there is no universally established measure of inequality and poverty. A common conclusion in most of the reviewed articles is that poverty dynamics are largely attributed to the unequal distribution of resources, with poverty being a consequence of inequality. Another significant finding is that lower elasticity of poverty growth is associated with greater inequality. This study comprehensively examines the measurements and correlations between economic inequality and poverty dynamics in the literature, contributing to a better understanding of the empirical applications. The findings of this study will uniquely contribute to the discourse on growth-poverty inequality concerning the 2030 Sustainable Development Goals 1 and 10.

To conduct an analysis of poverty transitions, a panel (longitudinal) dataset is necessary, providing information on the living standards of households over time. Such data would enable researchers to track changes

in a household's poverty level relative to a predetermined poverty line. Moreover, by accounting for variances in these characteristics, panel data can improve the accuracy of the association between time-variant observable national characteristics and explanatory factors. Latent Markov chain analysis is effective for analyzing poverty dynamics and ordered logit/probit regression is suitable for studying the factors that influence poverty dynamics.

7. Limitations And Recommendations

Despite the valuable insights provided by this study, several limitations must be acknowledged, particularly regarding the availability and reliability of dynamic data in developing countries. The scarcity of longitudinal panel data presents a significant challenge, making it difficult to distinguish between individuals who are persistently poor and those who cycle in and out of poverty. This lack of comprehensive data inhibits our ability to fully understand the nuanced relationship between inequality and poverty, suggesting that policies targeting poverty may not necessarily align with those aimed at reducing inequality. Additionally, the study highlights the need for more detailed and consistent panel datasets that can more accurately track poverty over time and across different economic contexts. It is crucial that such data consider not only real income but also the purchasing power influenced by income levels and price changes. To minimize potential biases and measurement errors in estimating economic inequality and poverty dynamics, maintaining a consistent survey design across different periods is essential. The use of the Gini index, while valuable, should be complemented by other measures of economic inequality to capture a more holistic view of the issue. Moreover, targeted interventions such as cash transfer programs and improved taxation policies could play a significant role in alleviating poverty.

7.1 Suggested Topics For Future Studies

Future research should focus on identifying the factors that empower individuals to escape poverty and the types of endowments that provide resilience against economic shocks. Specific areas of interest include exploring the relationship between the non-farm sector and poverty dynamics using robust panel datasets, examining how sociodemographic characteristics of households influence poverty transitions, and investigating the complex nexus between poverty dynamics and inequality, particularly in the context of developing countries. These avenues of research are critical for formulating effective policies that address both poverty and inequality, ultimately contributing to sustainable economic development.

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