

# A Systematic Review on Multidimensional Poverty Measurement

Anindya Mitra Raisnur Putri<sup>1</sup>, Muhammad Hakimi Mohd Shafai<sup>2</sup>, Abdul Ghafar Ismail<sup>3</sup>

## Abstract

*Multidimensional poverty measurement (MPI) offers a more comprehensive framework for understanding poverty, as it includes various non-income dimensions such as education, health, and living standards. Traditional poverty measures, typically based on income thresholds, fail to capture the full spectrum of deprivation experienced by the poor. This systematic review examines key MPI methodologies, focusing on the widely used Alkire-Foster method and the Human Development Index, and explores how they are applied in different regional contexts. The review evaluates both the strengths and limitations of these approaches, including challenges related to indicator selection, weighting, and data availability. Furthermore, it discusses the policy implications of adopting MPI in national and global anti-poverty strategies, highlighting how MPI can offer policymakers more precise insights into the multidimensional nature of poverty. By synthesizing findings from recent empirical studies, this paper aims to contribute to the ongoing discourse on refining poverty measurement tools to better inform policy interventions and enhance poverty alleviation efforts globally. The review underscores the potential of MPI to address the shortcomings of unidimensional approaches and its importance in formulating more targeted, effective poverty reduction strategies.*

**Keywords:** *Multidimensional Poverty, Alkire-Foster Method, Human Development Index, Poverty Measurement, Policy Development.*

## Introduction

Child Poverty remains one of the most pressing global challenges of the 21st century. Traditionally, it has been defined in economic terms, relying on income thresholds to assess who is poor. For instance, the World Bank has long used an international poverty line currently set at \$1.90 per day to categorize individuals living in poverty (Vollmer & Alkire, 2022). While these income-based metrics have been useful for identifying large-scale poverty trends, they fail to capture the full complexity of the issue. Income alone cannot reflect the multiple dimensions of deprivation faced by poor populations, such as inadequate access to education, poor health, or substandard living conditions (Bastos & Machado, 2018).

In response to these limitations, the concept of multidimensional poverty has gained traction in recent years. This approach shifts away from a singular focus on income, instead recognizing that poverty encompasses multiple deprivations that affect people's ability to live dignified lives. The shift towards multidimensional poverty measurement (MPI) reflects a growing understanding that human well-being depends on more than just material wealth. This perspective is deeply influenced by Amartya Sen's capability approach, which argues that poverty should be understood as a deprivation of basic capabilities necessary to achieve a fulfilling life (Sen, 2017). Sen's work emphasized that poverty is not just about a lack of income, but about the inability to lead a life of value.

Various tools have been developed to operationalize the concept of multidimensional poverty. One of the earliest and most widely recognized is the Human Development Index (HDI), introduced by the United Nations Development Programme (UNDP) in 1990. The HDI combines three key dimensions life expectancy, education, and income into a single composite measure of well-being (UNDP, 2020). However, despite its widespread use, the HDI has faced criticism for being too

---

<sup>1</sup> Department of Economics, Faculty of Economics and Management, Universiti Kebangsaan Malaysia. She is student faculty Economics and Management, Universiti Kebangsaan Malaysia, she is also lecturer of Economic Development, Sekolah Tinggi Ilmu Ekonomi dan Bisnis Indonesia, Email: ukm.anindya@gmail.com

<sup>2</sup> Center for Sustainable and Inclusive Development Studies (SID), Faculty of Economics and Management, Universiti Kebangsaan Malaysia (UKM), Malaysia. He is an associate professor of entrepreneurship, Islamic economics, and Islamic social finance at the Faculty of Economics and Management, Universiti Kebangsaan Malaysia, Malaysia, Email: hakimi@ukm.edu.my.

<sup>3</sup> Professor of Islamic Economics in Faculty of Economics and Management, Universiti Kebangsaan Malaysia, Email: agibab62@gmail.com

simplistic and for failing to account for other critical dimensions of poverty, such as social exclusion, environmental conditions, or access to public services (Liu & Xu, 2016).

To address these limitations, scholars have developed more comprehensive tools such as the Alkire-Foster (AF) method. Developed by Sabina Alkire and James Foster, the AF method allows for a more flexible and nuanced assessment of poverty by identifying individuals or households that are deprived in multiple dimensions (Alkire & Foster, 2011). Unlike income-based measures or even the HDI, the AF method can disaggregate poverty into specific dimensions such as health, education, and living standards and quantify both the extent and intensity of deprivation. This multidimensional approach enables policymakers to design more targeted interventions by revealing not just how many people are poor, but in what ways they are poor (Alkire & Kanagaratnam, 2021).

The Alkire-Foster method has been applied in a wide range of contexts, from global poverty assessments to national poverty reduction strategies. For example, the Global Multidimensional Poverty Index (MPI), which uses the AF method, has been adopted by many countries to track multidimensional poverty over time. The MPI considers a range of deprivations, such as child mortality, years of schooling, and access to clean water, making it a more comprehensive tool for assessing poverty in its many forms (Alkire & Kanagaratnam, 2021). In regions like Latin America and Sub-Saharan Africa, where traditional income-based measures often overlook critical aspects of deprivation, the MPI has provided invaluable insights into the nature and scope of poverty (Santos & Villatoro, 2020).

However, the application of multidimensional poverty measurement is not without challenges. One major issue is the selection of dimensions and indicators. While some dimensions, such as health and education, are universally recognized as essential for well-being, others may be more context specific. For instance, access to digital services like the internet might be considered a basic need in one country but not in another (Santos & Villatoro, 2020). Moreover, the choice of indicators and the process of assigning weights to different dimensions can significantly influence the outcomes of the analysis. The lack of a universal standard for these choices makes comparisons between countries difficult (Espinoza-Delgado & Klasen, 2018).

Another challenge is the availability and quality of data, especially in low-income or conflict-affected regions where data collection is limited. The accuracy and reliability of multidimensional poverty measures depend heavily on the availability of high-quality, disaggregated data that captures deprivations across various dimensions (Bastos & Machado, 2018). In some cases, governments may lack the resources or infrastructure to collect such data, resulting in incomplete or biased poverty assessments. Addressing these data challenges is crucial for improving the accuracy and effectiveness of multidimensional poverty measures.

Despite these challenges, the adoption of multidimensional poverty measurement offers significant advantages. Unlike traditional poverty measures, which tend to focus on income or consumption, MPI provides a more comprehensive understanding of poverty. It enables policymakers to identify not only how many people are poor but also the specific dimensions in which they are deprived. This information is critical for designing targeted interventions that address the root causes of poverty. For example, if a significant portion of the population is deprived in education but not in income, then policy interventions should prioritize improving access to quality education rather than merely increasing household income (Alkire & Kanagaratnam, 2021).

Moreover, multidimensional poverty measures can reveal inequalities within countries and regions that are often masked by national averages. By disaggregating data at the regional or household level, MPI can highlight disparities in poverty levels across different population groups, such as rural versus urban areas, or by gender and age. This level of detail is crucial for designing equitable poverty reduction strategies that address the needs of marginalized or vulnerable groups (Espinoza-Delgado & Klasen, 2018).

This paper provides a systematic review of the methodologies used in multidimensional poverty measurement, with a focus on recent empirical studies applying the AF method and other MPI frameworks. It aims to assess the strengths and limitations of these approaches and explore their policy implications. By synthesizing findings from recent literature, this review seeks to contribute to ongoing discussions about improving poverty measurement tools to better inform policy interventions and enhance global poverty alleviation efforts.

## Methodology

This section outlines the methodological approach taken in conducting the systematic review on multidimensional poverty measurement. The aim of this review is to synthesize and critically evaluate the different methods applied in the literature to assess multidimensional poverty, with a particular focus on the use of the Alkire-Foster (AF) method and other MPI frameworks. The review follows a structured approach to ensure that relevant studies are systematically identified, assessed, and synthesized.

### *Search Strategy*

The systematic review adhered to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure comprehensive coverage of the literature (Page et al., 2021). A search of Scopus databases was conducted to identify peer-reviewed articles published between 2015 and 2024. The search terms included combinations of the following keywords: multidimensional poverty measurement, Alkire-Foster method, capability approach, poverty indices, global multidimensional poverty index (MPI), and poverty measurement frameworks. Additional terms such as household poverty, income and capability deprivations, and poverty alleviation strategies were used to broaden the scope of the search, ensuring a diverse representation of methodologies and perspectives in the field (Burchi et al., 2022).

To systematically identify relevant literature on multidimensional poverty measurement, a comprehensive search strategy was developed utilizing a structured search string. The search string was designed to encompass a wide range of terms related to multidimensional poverty and its measurement methodologies. Specifically, the search string was formulated as follows: Title-Abs-Key(("multidimensional poverty index" OR "multidimensional poverty measurement" OR "Alkire Foster method" OR "capability approach" OR "poverty indices" OR "MPI" OR "poverty measurement" OR "deprivation") AND ("poverty indicator\*" OR "poverty dimension" OR "poverty assessment" OR "socioeconomic indicator\*")).

This search string incorporates various keywords and phrases that reflect the key concepts in the field of multidimensional poverty measurement. The first set of terms focuses on the core concept of multidimensional poverty, including its definitions and measurement frameworks. The second set of terms captures the various indicators, dimensions, and methodological approaches employed in poverty assessment. To further refine the search, filters were applied to limit studies to empirical research, policy papers, and literature reviews written in English. Studies focusing on case studies, regional assessments, and global applications of multidimensional poverty were prioritized to capture a wide range of methodologies and contexts. Reference lists of selected articles were also screened to identify additional relevant studies not captured in the initial search.

### *Inclusion and Exclusion Criteria*

The inclusion criteria for this systematic review were carefully established to ensure the relevance and quality of selected studies on multidimensional poverty measurement, as suggested in prior studies (Alkire & Kanagaratnam, 2021). Table 1 outlines the inclusion and exclusion criteria used in the methodology for study selection. In terms of literature type, systematic review journals, books, book

series, book chapters, and conference proceedings were excluded, aligning with similar methodological approaches to focus on empirical studies that provide original and rigorous data or case studies.

This study emphasizes empirical articles that focus on multidimensional poverty, which are more likely to offer detailed quantitative data or case studies essential for in-depth analysis. Only English-language publications were included, a choice consistent with standard practice in systematic reviews to avoid translation complexities and because English is the predominant language in scholarly databases, which has been highlighted as a common inclusion criterion in similar research efforts (Page et al., 2021). Consequently, studies published in languages other than English were excluded to maintain consistency, accessibility, and comparability of the sources included in this review.

**Table 1. Inclusion and Exclusion Criteria**

Criterion	Eligibility	Exclusion
Literature type	Provide empirical data or case studies on multidimensional poverty	Systematic review journal, book, book series, chapter in book, conference proceeding
Language	English.	Non-English
Timeline	Between 2015 to 2024	< 2015
Research Areas	Business Economics or Social Sciences.	Other areas
Countries/Region	Developing Countries	Non-Developing Countries

Furthermore, studies published between 2015 and 2024 are included to focus on recent findings and developments in the field, ensuring relevance to current contexts. The review focuses on studies within the fields of Business Economics and Social Sciences, as these areas are directly related to poverty studies and social determinants. Studies that provide empirical data or case studies on multidimensional poverty in developing countries are included, as these regions often experience significant poverty issues and are the primary focus of the review.

#### *Data Extraction*

To conduct the systematic review on multidimensional poverty measurement, a structured data extraction form was developed to systematically collect relevant information from each study, which aligns with best practices as highlighted in previous literature (Burchi et al., 2022). Key extracted data included authors' names, year of publication, and the geographical region of the study, providing a contextual understanding of poverty metrics across diverse regions (Alkire & Kanagaratnam, 2021). Additionally, methodological approaches such as the use of the Alkire-Foster method or other multidimensional techniques were recorded, along with the specific dimensions and indicators of poverty (education, health, and living standards) and the weighting schemes applied to these dimensions, following criteria discussed in recent studies.

Further, the extracted data included poverty measurement results, disaggregated by demographics such as rural or urban classifications, gender, and age, to ensure a nuanced analysis of poverty across population groups. Policy implications derived from the findings were also documented, capturing recommendations for addressing multidimensional poverty, as noted by (Burchi et al., 2022). Data extraction was independently performed by two reviewers, and any discrepancies were resolved by discussion or a third reviewer, which is in line with the standard review processes to minimize bias (Page et al., 2021).

For quality assessment, the systematic review methodology was bolstered by bibliometric analysis to rigorously evaluate studies on multidimensional poverty measurement. This approach supports evidence-based decision-making by consolidating scientific knowledge and generating well-supported insights for policymaking, which has been emphasized by recent studies (Burchi et al., 2022). A two-reviewer system, with reliability checks, was used to uphold consistency and rigor in evaluating studies.

The PRISMA framework was adopted to structure the systematic review, offering guidance for organizing reports and enhancing clarity and reproducibility (Page et al., 2021). During the initial phase, PRISMA criteria for inclusion, search strategies, and study selection processes were applied, particularly within the Scopus database. Targeted keywords included multidimensional poverty measurement and related terms, ensuring comprehensive coverage of relevant studies from 2015 to 2024. This search strategy aligns with methods previously documented in poverty measurement reviews.

Following eligibility criteria, 14 studies were selected for analysis, divided into two categories. The first focused on bibliometric analysis, including annual scientific production, keyword frequency, and country distribution. This included data organization through MS Excel and VOS viewer software for visualization. The second category, content analysis, provided detailed insights into methodological choices and tools used in multidimensional poverty measurement, highlighting factors influencing measurement outcomes (Vollmer & Alkire, 2022). This dual classification enables a structured and comprehensive understanding of the current research landscape on multidimensional poverty measurement, offering valuable insights into policy and intervention strategies tailored to poverty alleviation.

### *Analytical Approach*

After identifying the relevant studies and extracting the necessary data, a thematic analysis was performed to uncover recurring themes and patterns in the application of multidimensional poverty measures. Thematic coding was utilized to categorize the studies based on key aspects of the Multidimensional Poverty Index (MPI), which included the selection of dimensions examining how various studies choose poverty dimensions based on either international standards such as the Sustainable Development Goals (SDGs) or context-specific factors; indicator choices analyzing the specific indicators employed to assess deprivations within each dimension; weighting schemes evaluating how different studies assign weights to dimensions, whether through equal weighting or context-specific approaches; and policy relevance considering how the results from multidimensional poverty measurements can inform or influence policy decisions, particularly in the formulation of poverty reduction strategies. The analysis also looked at regional differences in the application of MPI, comparing results from low-income countries, middle-income countries, and high-income countries to identify context-specific trends.

### *Limitations of the Methodology*

While this review aims to provide a comprehensive synthesis of the literature on multidimensional poverty measurement, there are several limitations to note. First, the review only included articles written in English, which may exclude relevant studies published in other languages. Second, the reliance on peer-reviewed journal articles may have excluded valuable insights from gray literature, such as reports by non-governmental organizations (NGOs) or policy briefs by international agencies. Finally, the focus on studies published between 2015 and 2024, while capturing recent developments, may have overlooked earlier foundational work in the field.

## **Results and Analysis**

This section presents the findings from a systematic review and bibliometric analysis on multidimensional poverty measurement (MPI), offering insights into trends, thematic focuses, and regional applications. The analysis is segmented into bibliometric, content, and regional application reviews. The bibliometric analysis highlights publication trends, influential authors, and citation patterns in 351 MPI literature. Showing consistent growth in publications from 2015 to 2024, indicative of the increasing academic and policy-driven interest in multidimensional frameworks especially in response to global issues like the COVID-19 pandemic (D'Attoma & Matteucci, 2024). The most cited works in this field address topics such as energy poverty, health inequities, and spatial poverty mapping, emphasizing the diverse dimensions of deprivation (Pérez Gelves et al., 2023).

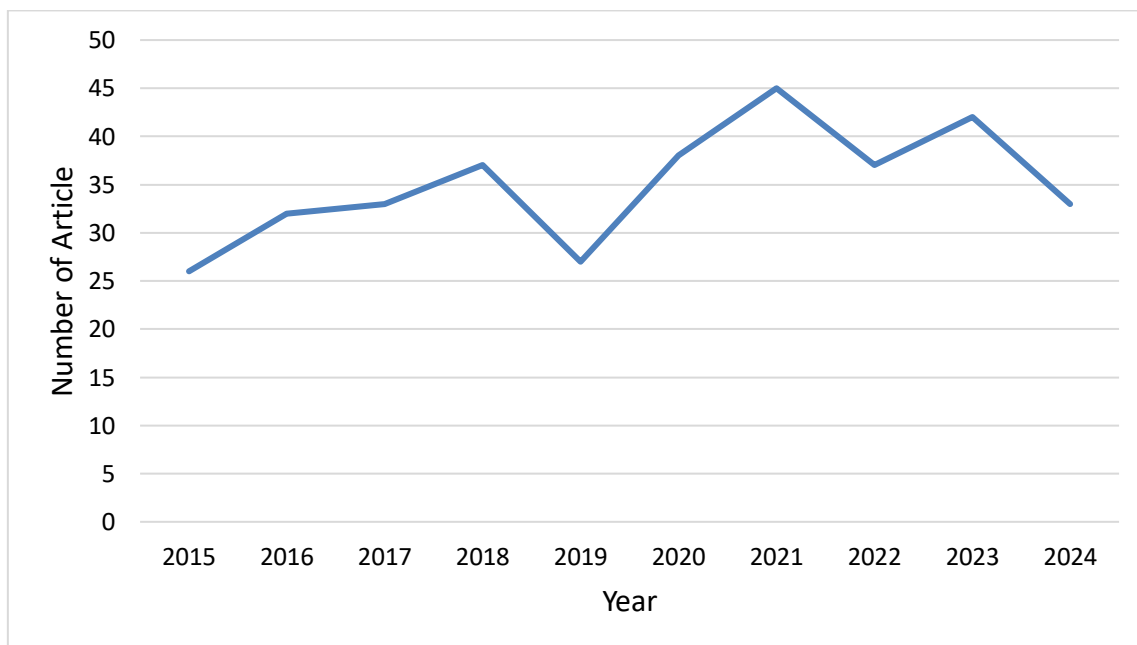
The content analysis investigates common methodologies, with a particular focus on the widely utilized Alkire-Foster method. It identifies frequently used dimensions such as health, education, and living standards, while also noting variations in weighting schemes and indicators, reflecting adaptations to capture poverty's complex nature effectively (Chen et al., 2019). A critical comparison of methodologies showcases the MPI framework's flexibility but also its limitations in addressing poverty's full complexity across contexts.

Finally, regional applications highlight the diverse implementations of MPI across Latin America, Sub-Saharan Africa, and South Asia, revealing substantial regional differences in poverty manifestations. This section discusses the challenges these regions face, such as data scarcity and selecting contextually relevant indicators, which can impede precise poverty measurement. Despite these obstacles, MPI applications have provided valuable guidance for formulating targeted poverty alleviation policies tailored to regional needs (Zhang et al., 2022).

### *Bibliometric Analysis*

Bibliometric analysis is a quantitative approach used to evaluate academic literature, highlighting patterns, trends, and impacts within a research domain. For this systematic review on Multidimensional Poverty Measurement (MPI), we employed tools such as VOS viewer and Microsoft Excel to map and visualize trends in publication volume, keyword co-occurrences, and citation networks from a curated dataset of research papers published between 2015 and 2024. Results of the bibliometric analysis illustrate a rising interest in MPI methodologies, with the Alkire-Foster (AF) method gaining particular traction across various regions and research fields (Smith et al., 2021). This analysis provides insights into leading authors, influential countries, and evolving research themes, while also exposing gaps in MPI applications that could be addressed by future studies.

**Figure 1. Annual Scientific Production of the Studies**



The analysis also shows an expanding focus on the policy implications of MPI, particularly regarding how this framework informs targeted poverty alleviation strategies (Chen et al., 2019). Highly cited papers in the field often address innovations in MPI methods, country-specific poverty assessments, and adaptations of the Alkire-Foster method to local contexts (Zhang et al., 2022). Figure 1 reveals an upward trend in MPI-related publications, particularly after 2020, correlating with the global adoption of the Sustainable Development Goals (SDGs) and the SDG 1 aim to “end poverty in all its forms

everywhere” (UNDP, 2020). This annual production data, captured from 2015-2024, shows a marked increase in publications from 2018 onwards, peaking with around 40 articles in 2021. This period aligns with a broader global push towards comprehensive poverty reduction strategies and growing interest in multidimensional poverty frameworks due to socioeconomic challenges highlighted by the COVID-19 pandemic (Wang et al., 2023).

The fluctuation in research output post-2021 may indicate a shift in focus towards more specialized or regional studies, or it may reflect an evolution in the field where key foundational research has already been published. Additionally, the rise of machine learning and big data as tools for poverty measurement may be influencing the types of publications and methodologies used during this period. 2015 to 2021 represents the most prolific period for research on multidimensional poverty measurement, likely driven by heightened international development goals and a push for more holistic approaches to poverty alleviation. During this time, there was a concerted effort by scholars and policymakers to develop frameworks that go beyond income-based poverty measures, incorporating dimensions such as education, health, and living standards.

**Table 2. Scientific Production by Authors and Countries**

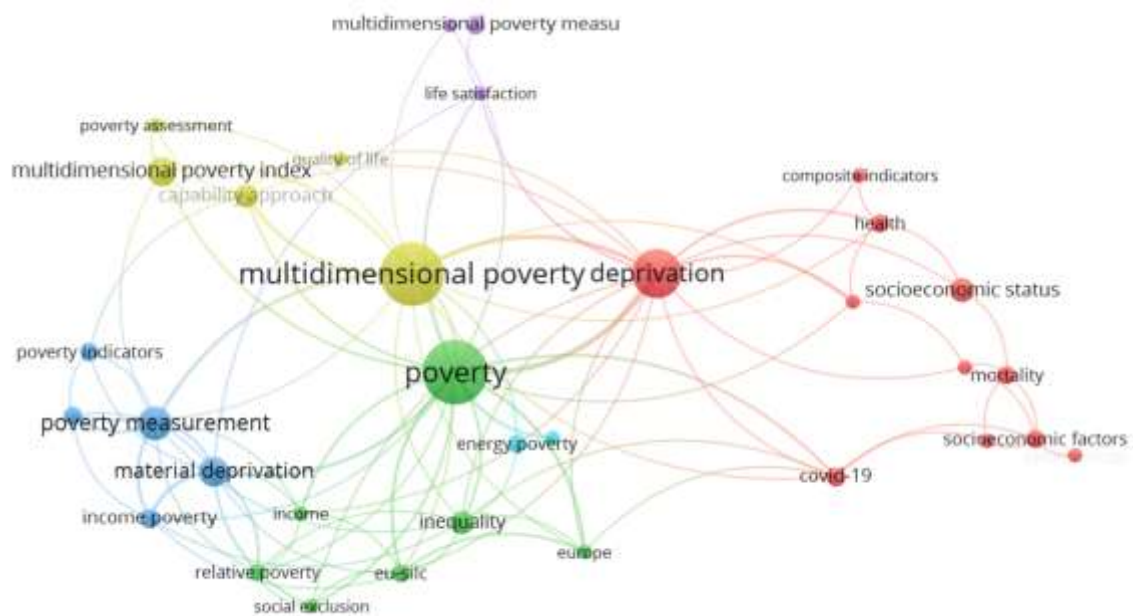
Rank	Author	Country	Countries' Scientific Production
1	Sabina Alkire	USA	267
2	Allel Kasim	UK	197
3	Hans-Jürgen Andreß	China	98
4	Gaia Bertarelli	Italy	94
5	Gianni Betti	Spain	79
6	Bahman Cheraghian	France	72
7	Caterina Giusti	Brazil	55
8	Su-Jung Nam	Canada	40
9	Geranda Notten	India	39
10	Yanhui Wang	Germany	34

Most prolific authors and countries identify the authors or countries with the highest number of articles. By analyzing the authors' contributions, we will provide insights into leading researchers in the field of multidimensional. Table 2 outlines the top authors in the field of multidimensional poverty measurement based on their contributions. This ranking provides insight into the key researchers influencing this area of study. Sabina Alkire is recognized as the leading author in multidimensional poverty measurement. Her extensive work and influence in this field suggests that she has significantly shaped contemporary discussions and methodologies related to poverty assessment. Following closely is Allel Kasim, indicating his substantial contributions to the literature on multidimensional poverty. The presence of these top authors highlights the importance of their research in establishing foundational theories and frameworks

The inclusion of Hans-Jürgen Andreß, Gaia Bertarelli, and Gianni Betti among the top five authors reflects the diverse perspectives and methodologies being employed in multidimensional poverty measurement. Each of these authors may provide unique insights that contribute to a more comprehensive understanding of poverty. Authors such as Bahman Cheraghian, Caterina Giusti, and Su-Jung Nam further enrich the field with their respective contributions. Their inclusion in the top ten signifies that new voices and research are gaining recognition and are potentially shaping future directions in multidimensional poverty research. The list represents a variety of scholars from different countries, which underscores the global nature of research in multidimensional poverty measurement. This geographical diversity may enhance the relevance and applicability of research findings across various contexts.

Table 2 also summarizes the scientific production related to multidimensional poverty measurement across various countries. This data reflects the number of scientific contributions produced by each country. The data presented highlights the disparities in scientific production among different countries in the field of multidimensional poverty measurement. The USA and the UK are prominent contributors, while other countries are beginning to make significant strides. This landscape provides an opportunity for collaboration and knowledge exchange, ultimately enhancing the field of multidimensional poverty research. Future efforts should focus on understanding the factors that contribute to these differences and promoting greater involvement from countries with lower scientific output.

Figure 2. Overlay Visualization of Co-Citation Network



Second, to identify major clusters that represent the core thematic areas, Figure 2 visualizes the co-citation network among publications in this domain. The central node, "multidimensional poverty," underscores the comprehensive nature of recent poverty research, which often adopts frameworks like the multidimensional poverty index (MPI) and the capability approach. These frameworks capture a range of deprivations beyond income, such as access to education, healthcare, and quality of life. This multidimensional approach aligns with Sen's capability approach, which has been widely adopted in poverty studies to argue that well-being encompasses more than just economic measures. The prominence of "multidimensional poverty" as a central concept reveals a shift in poverty research from unidimensional to more holistic approaches, as advocated by recent studies (D'Amico et al., 2023), reflecting an increased awareness of poverty's complexity and its impact on human well-being.

The green cluster connected to "poverty" and "inequality" also reveals a critical emphasis on how poverty and inequality are interwoven. Studies in this cluster highlight the intersection between poverty and broader issues including social exclusion, energy poverty, and income inequality. For instance, research has shown that low-income populations often face compounded challenges, such as limited access to energy, which further deepens poverty and impacts health, education, and economic opportunities (Vecchi, 2015). The connection between these themes in the network graph underlines the academic consensus that poverty cannot be isolated from other social determinants, such as inequality, which reinforces poverty and limits social mobility. This cluster also highlights regional studies, particularly in Europe, which examine social exclusion through poverty indicators and emphasize the need for region-specific poverty measurement tools, as illustrated by studies on poverty indicators and social exclusion in the European Union context.

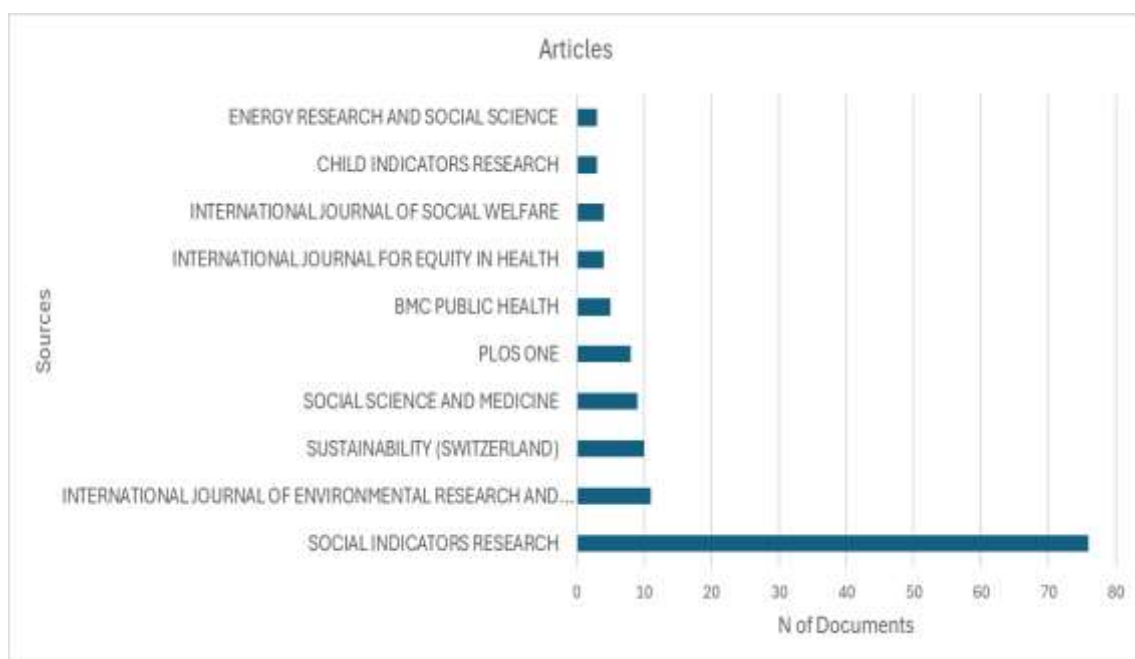


The red cluster surrounding "deprivation" illustrates a strong link between poverty, health, and socioeconomic status. This cluster indicates a growing recognition of the social determinants of health within the poverty discourse, as socioeconomic factors including education, income and occupation significantly influence health outcomes. Studies linked to this cluster (Li et al., 2023) have shown that populations experiencing multidimensional poverty are at greater risk of adverse health outcomes, including higher mortality rates and reduced life expectancy. Moreover, the association with terms like "COVID-19" highlights the pandemic's exacerbation of existing health and economic inequalities, with marginalized populations suffering disproportionately from both the health impacts and economic fallout of the crisis. This finding reflects broader discussions in the literature on how health inequities and poverty are mutually reinforcing, creating cycles of disadvantage that are difficult to break.

The blue cluster focused on "poverty measurement" and "material deprivation" suggests ongoing efforts to refine poverty measurement tools. This cluster reveals an active area of research dedicated to improving the precision and relevance of poverty indicators to capture complex realities accurately. Scholars have increasingly argued for metrics that capture material deprivation beyond income, including access to essential goods and services. The study has emphasized that traditional income-based poverty measurements fail to reflect the true nature of deprivation (Hamago et al., 2023), particularly in contexts where non-monetary aspects of poverty are significant. This focus is critical for informing effective policy responses, as governments and organizations rely on accurate poverty data to allocate resources and design interventions. The diverse approaches to poverty measurement observed in this cluster underscore the complexity of capturing multidimensional poverty and the need for innovative metrics tailored to specific contexts.

Figure 3 reveals the distribution of research documents on multidimensional poverty across several academic journals, underscoring the interdisciplinary nature of this research field. Among these, *Social Indicators Research* stands out as the primary contributor with 351 documents, underscoring its commitment to social measurements and indicators core elements in multidimensional poverty research. This journal's prominence reflects its alignment with poverty research that emphasizes social indicators and quality of life measurements (Ramírez et al., 2017).

**Table 3. Most Relevant Sources of Relevant Studies**



Following Social Indicators Research, the International Journal of Environmental Research and Public Health has a notable number of publications, though fewer in comparison, highlighting the journal's

focus on environmental health factors in poverty analysis. This suggests an emerging interest in how environmental conditions intersect with poverty, with health considerations playing a critical role in understanding poverty's impact on well-being.

Other journals, such as *Sustainability (Switzerland)* and *Social Science and Medicine*, offer a moderate but significant number of documents, reflecting a broad interdisciplinary interest that includes social, environmental, and health perspectives on poverty. This diversity signals the expanding recognition of poverty as a multidimensional issue that intersects with sustainability and public health. Meanwhile, journals like *PLOS ONE* and *BMC Public Health* show fewer contributions, though their focus on public health dimensions highlights the importance of health impacts in understanding poverty's broader implications (Carter et al., 2020).

Specialized journals, including *Child Indicators Research* and *Energy Research and Social Science*, though representing smaller document counts, emphasize growing scholarly interest in specific aspects of multidimensional poverty, such as child poverty and the role of energy access in quality of life. These contributions indicate that subfields like child indicators and energy poverty are gaining traction in poverty studies, expanding the scope of multidimensional poverty research to include nuanced dimensions of deprivation (Notten, 2016).

### *Content Analysis*

In exploring the methodologies applied in Multidimensional Poverty Index (MPI) studies, the analysis reveals a significant reliance on the Alkire-Foster (AF) method, a prevalent framework in multidimensional poverty measurement. The AF method integrates diverse dimensions of deprivation, including health, education, and living standards, moving beyond income-centric models to encompass broader aspects of well-being. This study identifies these dimensions as consistent elements in MPI analyses, closely aligned with international standards (UNDP, 2020). However, substantial variation exists across MPI applications, particularly in terms of selected indicators and weighting schemes, which are adapted based on regional contexts and data availability.

For instance, while core dimensions such as health, education, and living standards remain common, the specific indicators vary according to study priorities and regional foci. In health, for example, indicators like child mortality, nutrition, and healthcare access differ in weight and emphasis depending on regional concerns. Similarly, educational indicators range from schooling years to literacy rates, shaped by local educational standards and data consistency. Living standards often include access to essentials such as clean water, sanitation, electricity, and adequate housing, though some studies expand to incorporate employment status or transportation access (Smith et al., 2021).

The weighting schemes applied also display flexibility, with some studies assigning equal weight across dimensions, while others prioritize certain dimensions deemed more critical in a specific context. This customization reflects the MPI's adaptability to diverse socio-economic environments but introduces subjectivity, as differing weights can substantially affect poverty results and interpretation. This variation underscores a core MPI strength its contextual adaptability, yet it also complicates cross study comparability, limiting standardization (Zhang et al., 2022).

Moreover, the analysis highlights a growing trend to include emerging dimensions such as environmental sustainability, digital access, and social capital, reflecting evolving perspectives on poverty beyond material deprivation. New indicators including environmental quality, internet access, and social networks increasingly appear, expanding the MPI's scope to consider contemporary poverty factors and their impact on well-being (Chen, 2020).

A comparison of methodologies reveals the MPI's unique capability to account for overlapping deprivations, offering a more nuanced view of poverty than income-based measures alone. This multidimensional lens is invaluable for shaping policies that target specific needs within diverse population groups, as it reveals the intersecting factors such as health, education, and living conditions

that collectively shape individuals' poverty experiences (Patel et al., 2020). However, MPI frameworks face challenges in standardization and data availability, particularly in low-resource contexts, where the scarcity of reliable data can necessitate the use of proxies that may not fully represent the targeted deprivation. The inherent variability in dimensions and weighting allows for contextualization but also hinders the establishment of universal poverty benchmarks, presenting an obstacle for consistent cross-country comparisons (Singh et al., 2017).

### *Regional Applications and Challenges*

The examination of regional applications and challenges in using the Multidimensional Poverty Index (MPI) demonstrates the measure's adaptability and critical role in addressing poverty in diverse contexts. Research from regions including Latin America, Sub-Saharan Africa, and South Asia reveals significant variations in poverty experiences shaped by distinct economic, social, and cultural factors (Martínez-García et al., 2020). These region-specific MPI applications allow for tailored approaches to poverty that reflect the most pressing deprivations for each population.

In Latin America, MPI assessments emphasize social security, housing quality, and education due to relatively robust social policies juxtaposed with high inequality and urban poverty. Studies reveal substantial disparities between urban and rural areas, with rural populations often facing more severe educational and living standard deprivations. Consequently, MPI analyses have been pivotal in informing policies aimed at rural infrastructure, quality education access, and healthcare improvements (Rodríguez-Alvarez et al., 2021).

In Sub-Saharan Africa, widespread rural poverty and limited access to essential services pose unique challenges. Studies from this region often include dimensions including nutrition, child mortality, and water access, crucial in rural and peri-urban areas. However, limited data and irregular updates can hinder accurate assessments of these deprivations. Furthermore, selecting feasible yet relevant indicators remain a challenge due to inconsistent education data and accessibility issues, though MPI insights continue to support interventions in healthcare and rural development (Steinert et al., 2018).

In South Asia, particularly in densely populated areas like India and Bangladesh, MPI applications focus on housing quality, health, and electricity access, all highly pertinent to urban poverty. MPI's ability to capture overlapping deprivations such as inadequate housing, poor sanitation, and educational limitations has informed extensive poverty reduction efforts, including large-scale housing and sanitation programs (Rahman et al., 2021).

Despite these insights, regional MPI applications face obstacles, primarily data availability and context-specific indicator selection. Data collection challenges, financial limitations, and political instability often lead to inconsistent poverty measurements across regions. Context-specific indicators are essential for accurately capturing regional poverty but add variability that complicates cross-regional comparisons (Zhang et al., 2022). Nonetheless, MPI's regional applications have informed targeted poverty alleviation strategies by highlighting priority deprivations, supporting initiatives to reduce urban inequality in Latin America, guiding health projects in Sub-Saharan Africa, and improving housing and sanitation in South Asia.

### **Conclusion**

In conclusion, the Multidimensional Poverty Index (MPI) serves as a valuable tool for assessing and addressing poverty beyond income-based measures, offering a comprehensive approach that captures multiple aspects of deprivation. This study highlights how MPI has been employed across diverse regions, including Latin America, Sub-Saharan Africa, and South Asia, to understand the unique manifestations of poverty and guide targeted interventions. Through a systematic review of the literature and empirical analysis, the adaptability of MPI to regional contexts enables policymakers to tailor poverty alleviation efforts to specific needs, from improving rural infrastructure in Sub-Saharan Africa to addressing urban inequality in Latin America.

However, the application of MPI is not without challenges. Variations in data availability, indicator selection, and methodological approaches across regions pose significant barriers to consistent and reliable poverty measurement. Particularly in developing countries, limited access to comprehensive and updated data can hinder the accuracy of MPI assessments, underscoring the need for enhanced data collection and methodological rigor. Addressing these challenges is essential for maximizing MPI's effectiveness in capturing the complexity of poverty.

Despite these limitations, the MPI has proven instrumental in guiding policies and interventions that directly address the lived experiences of the poor. The insights gained from this research underscore the importance of a multidimensional perspective in poverty measurement, advocating for continued refinement of MPI frameworks and methodologies to enhance their applicability and impact across different contexts. Ultimately, the MPI's flexibility and focus on various poverty dimensions provide a solid foundation for building poverty reduction strategies that are both comprehensive and regionally relevant, contributing to more sustainable progress in global poverty alleviation effort.

## References

- Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. *Journal of Public Economics*, 95(7–8). <https://doi.org/10.1016/j.jpubeco.2010.11.006>
- Alkire, S., & Kanagaratnam, U. (2021). Revisions of the global multidimensional poverty index: indicator options and their empirical assessment. *Oxford Development Studies*, 49(2). <https://doi.org/10.1080/13600818.2020.1854209>
- Bastos, A., & Machado, C. (2018). Children and the dynamics of poverty and social exclusion: empirical evidence for Portugal. *International Journal of Social Economics*, 45(9). <https://doi.org/10.1108/IJSE-01-2016-0035>
- Burchi, F., Malerba, D., Montenegro, C. E., & Rippin, N. (2022). Assessing Trends in Multidimensional Poverty During the MDGs. *Review of Income and Wealth*, 68(S2). <https://doi.org/10.1111/roiw.12578>
- Carter, S., Channon, A., & Berrington, A. (2020). Socioeconomic risk factors for labour induction in the United Kingdom. *BMC Pregnancy and Childbirth*, 20(1). <https://doi.org/10.1186/s12884-020-2840-3>
- Chen, K. M. (2020). Subjective poverty, deprivation, and the subjective well-being of children and young people: A multilevel growth curve analysis in Taiwan. *Children and Youth Services Review*, 114. <https://doi.org/10.1016/j.childyouth.2020.105045>
- Chen, K. M., Leu, C. H., & Wang, T. M. (2019). Measurement and Determinants of Multidimensional Poverty: Evidence from Taiwan. *Social Indicators Research*, 145(2). <https://doi.org/10.1007/s11205-019-02118-8>
- D'Amico, G., De Blasis, R., & Gismondi, F. (2023). Perturbation analysis for dynamic poverty indexes. *Communications in Statistics - Theory and Methods*, 52(19). <https://doi.org/10.1080/03610926.2022.2034018>
- D'Attoma, I., & Matteucci, M. (2024). Multidimensional poverty: an analysis of definitions, measurement tools, applications and their evolution over time through a systematic review of the literature up to 2019. *Quality and Quantity*, 58(4). <https://doi.org/10.1007/s11135-023-01792-8>
- Espinoza-Delgado, J., & Klasen, S. (2018). Gender and multidimensional poverty in Nicaragua: An individual based approach. *World Development*, 110. <https://doi.org/10.1016/j.worlddev.2018.06.016>
- Hamago, J., Burton, J., Owen, J., & Bainton, N. (2023). Multidimensional poverty and small-scale mining in the shadow of large-scale mines in Papua New Guinea. *Journal of Rural Studies*, 101. <https://doi.org/10.1016/j.jrurstud.2023.103045>
- Li, C., Yu, L., Oloo, F., Chimimba, E. G., Kambombe, O., Asamoah, M., Opoku, P. D., Ogweno, V. W., Fawcett, D., Hong, J., Deng, X., Gong, P., & Wright, J. (2023). Slum and urban deprivation in compacted and peri-urban neighborhoods in sub-Saharan Africa. *Sustainable Cities and Society*, 99. <https://doi.org/10.1016/j.scs.2023.104863>
- Liu, Y., & Xu, Y. (2016). A geographic identification of multidimensional poverty in rural China under the framework of sustainable livelihoods analysis. *Applied Geography*, 73. <https://doi.org/10.1016/j.apgeog.2016.06.004>
- Martínez-García, A., Díez, J., Fernández-Escobar, C., Trescastro-López, E. M., Pereyra-Zamora, P., Ariza, C., Bilal, U., & Franco, M. (2020). Adaptation and evaluation of the nutrition environment measures survey in stores to assess mediterranean food environments (Nems-s-med). *International Journal of Environmental Research and Public Health*, 17(19). <https://doi.org/10.3390/ijerph17197031>
- Notten, G. (2016). How Poverty Indicators Confound Poverty Reduction Evaluations: The Targeting Performance of Income Transfers in Europe. *Social Indicators Research*, 127(3). <https://doi.org/10.1007/s11205-015-0996-4>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. In *The BMJ* (Vol. 372). <https://doi.org/10.1136/bmj.n71>
- Patel, V., Varma, J., Nimbalkar, S., Shah, S., & Phatak, A. (2020). Prevalence and profile of bullying involvement among students of rural schools of anand, Gujarat, India. *Indian Journal of Psychological Medicine*, 42(3). [https://doi.org/10.4103/IJPSYM.IJPSYM\\_172\\_19](https://doi.org/10.4103/IJPSYM.IJPSYM_172_19)
- Pérez Gelves, J. J., Østergaard, P. A., & Díaz Flórez, G. A. (2023). Energy poverty assessment and the impact of Covid-19: An empirical analysis of Colombia. *Energy Policy*, 181. <https://doi.org/10.1016/j.enpol.2023.113716>

- Rahman, M. A., Sani, N. S., Hamdan, R., Othman, Z. A., & Bakar, A. A. (2021). A clustering approach to identify multidimensional poverty indicators for the bottom 40 percent group. *PLoS ONE*, 16(8 August). <https://doi.org/10.1371/journal.pone.0255312>
- Ramírez, J. M., Díaz, Y., & Bedoya, J. G. (2017). Property Tax Revenues and Multidimensional Poverty Reduction in Colombia: A Spatial Approach. *World Development*, 94. <https://doi.org/10.1016/j.worlddev.2017.02.005>
- Rodriguez-Alvarez, A., Llorca, M., & Jamasb, T. (2021). Alleviating energy poverty in Europe: Front-runners and laggards. *Energy Economics*, 103. <https://doi.org/10.1016/j.eneco.2021.105575>
- Santos, M. E., & Villatoro, P. (2020). The Importance of Reliability in the Multidimensional Poverty Index for Latin America (MPI-LA). *Journal of Development Studies*, 56(9). <https://doi.org/10.1080/00220388.2019.1663177>
- Sen, A. (2017). Development as Freedom. In *The Top 50 Sustainability Books*. <https://doi.org/10.4324/9781351279086-33>
- Singh, H., Nugent, Z., Decker, K., Demers, A., Samaddar, J., & Torabi, M. (2017). Geographic variation and factors associated with colorectal cancer incidence in Manitoba. *Canadian Journal of Public Health*, 108(5–6). <https://doi.org/10.17269/cjph.108.6091>
- Smith, R. A., Schneider, P. P., Cosulich, R., Quirk, H., Bullas, A. M., Haake, S. J., & Goyder, E. (2021). Socioeconomic inequalities in distance to and participation in a community-based running and walking activity: A longitudinal ecological study of parkrun 2010 to 2019. *Health and Place*, 71. <https://doi.org/10.1016/j.healthplace.2021.102626>
- Steinert, J. I., Cluver, L. D., Melendez-Torres, G. J., & Vollmer, S. (2018). One Size Fits All? The Validity of a Composite Poverty Index Across Urban and Rural Households in South Africa. *Social Indicators Research*, 136(1). <https://doi.org/10.1007/s11205-016-1540-x>
- UNDP. (2020). *Human Development Report 2020: The Next Frontier Human Development and the Anthropocene Briefing note for countries on the 2020 Human Development Report Albania*. UNDP: New York, NY, USA.
- Vecchi, G. (2015). *Counting the Poor: New Thinking About European Poverty Measures and Lessons for the United States*. Edited by D. J. Besharov and K. A. Couch. Oxford University Press, Oxford. 2012. 440 pp. £45.00. *Economica*, 82(327). <https://doi.org/10.1111/ecca.12052>
- Vollmer, F., & Alkire, S. (2022). Consolidating and improving the assets indicator in the global Multidimensional Poverty Index. *World Development*, 158. <https://doi.org/10.1016/j.worlddev.2022.105997>
- Wang, Y. I., Wang, J., Wang, L. E. I., Zhang, L. I., & Xiang, Z. (2023). Economic Development and Rural Energy Poverty: Evidence From China. *Singapore Economic Review*, 68(4). <https://doi.org/10.1142/S0217590823440010>
- Zhang, F., Liu, H., Gu, W., & Zhang, J. (2022). Multidimensional poverty and types of impoverished counties in Gansu province of China. *Economic and Political Studies*, 10(1). <https://doi.org/10.1080/20954816.2022.2028991>