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Spatial poverty traps (A comprehensive analytical framework for their research)

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Abstract

Spatial poverty traps (SPTs) represent a complex geographical-economic concept that explains why certain areas suffer from persistent high rates of poverty. SPTs are not static entities, but dynamically evolving territories as a result of internal and external factors. This dynamism requires their continuous monitoring, adaptive identification frameworks, and modern, sophisticated and integrated approaches, which currently represent the most effective way of researching them and capturing the changes taking place within them. The aim contribution is to provide a rigorous, multifaceted analytical framework for the research and identification of SPTs. The objective is to provide policymakers and researchers with the theoretical-methodological and knowledge-informational basis necessary for the transition from simple poverty mapping to a deeper understanding of the mechanisms of persistent spatial poverty. Research into spatial poverty traps is a complex task and the contribution presents a holistic approach to their examination with emphasis on their identification and self-reinforcing mechanisms that cause poverty persistence. The contribution emphasises the key role of integrated methodologies and challenges that are an inherent part of the process of conceptualising research and identification of spatial poverty traps.

Key words:
spatial poverty traps, causal mechanisms, driving forces, self-reinforcing mechanisms, classifications, type SPTs

1 INTRODUCTION

Persistent (chronic) poverty remains one of the most pressing global problems, and its spatial manifestations often complicate intervention efforts. Traditional poverty measurements often overlook the geographical dimension and some of its important aspects that contribute to the persistence and concentration of deprivation. Spatial poverty traps represent areas where poverty is not only present but is also self-reinforcing due to the concurrence of geographical, socio-economic, environmental, institutional and other factors. Poverty traps are characterised by mechanisms that prevent individuals and communities from escaping poverty even when external conditions may improve (Arif et al., 2025). Understanding these mechanisms in poverty traps is crucial for effective and targeted development policy.

There is a clear and compelling body of evidence showing that spatially conditioned factors can largely explain chronic poverty experienced by a significant number of people (Bird et al., 2010; UK Department for International Development, 2013). These factors may be more sensitive to policy interventions than factors affecting poverty at the household level or within households. The poverty experienced by people in spatial poverty traps is characterised by compounded disadvantage: low returns to all forms of investment, partial integration into fragmented markets, social exclusion, insufficient access to public services, etc. It is evident that people in these traps are poor not only in terms of income, but also in terms of overall poverty expressed by AROPE – At Risk of Poverty or Social Exclusion, its depth (severity), and duration (chronicity). In spatial poverty traps, the "bad neighbourhood effect" plays an important role, reducing opportunities and possibilities to escape poverty. Even if an individual living in such a trap has entrepreneurial skills, investment capital and a willingness to invest in business, the return on their investments is lower than in a better-connected area with higher geographical capital and a good neighbourhood effect (Bird, 2019). The bad neighbourhood effect extends its harmful impact to investments in human capital. Parents who invest in their children's education in a poverty trap in most cases achieve lower returns on their investments. Even if their children attend a good school and obtain a good education, the absence of local successful role models and good entry-level job opportunities will make it harder to achieve success (Bird, 2019).

Most data from national household surveys show a significant regional dimension of poverty incidence (Higgins et al., 2010) and poverty traps can be found even when a country has experienced economic growth and an overall reduction in the number of

poor people (Chronic Poverty Research Centre, 2004). Despite recognition that poverty is higher in certain regions and areas within regions, and despite the fact that location plays a significant role in explaining poverty, relatively little attention has generally been paid to this in development policies.

Research on spatial poverty traps is necessary to uncover and understand the geographically conditioned causes of deep and persistent poverty, to identify population groups trapped in these traps, and to design effective targeted policy that can break the bad neighbourhood effect and support the development of affected regions. Their research appears particularly important under the current conditions in Slovakia, which since 2020 has recorded an increased level of inflation as well as significant growth in poverty. While in 2020 inflation was 1.95%, a year later 3.1%, in 2022 it was already 12.7%, i.e. it increased more than fourfold. In 2024 its values fell to 2.8%, but in 2025 it exceeded 4% (Štatistický úrad SR, 2025a). While in 2020 13.8% of the population in Slovakia were at risk of poverty or social exclusion (AROPE[1]), in 2024 it was already 18.3% (an increase of 4.5 p.p.). In absolute terms, the increase in the number of people in AROPE exceeded 236 thousand persons and rose from 744 thousand in 2020 to 980 thousand in 2024 (Štatistický úrad SR, 2025b). The number and share of the income poor also increased[2]. While in 2020 615 thousand persons in Slovakia suffered from income poverty, in 2024 their number rose to 778 thousand (Eurostat, 2025). Over the period, 163 thousand persons fell into income poverty. In relative terms, their share increased from 11.4% to 14.5%, i.e. by 3.1 p.p. (Štatistický úrad SR, 2025c).

High and rapid growth in poverty (the above, but also its other measures) has a significant effect on spatial poverty traps, which it affects in two main ways. The first consists in strengthening the mechanisms reproducing existing spatial poverty traps, leading to an expansion of their spatial scale and/or intensity (concentration) of poor people. The second way conditions, or leads to the emergence of new traps, i.e. the fall of previously "only" vulnerable areas into poverty traps. The above, as well as other facts, point to the high relevance and timeliness of their research, especially in countries with growing poverty, among which Slovakia currently belongs. The aim of the paper is to provide a rigorous, multi-faceted analytical framework for the research and identification of spatial poverty traps. The objective is to provide policy-makers and researchers with a knowledge and information base to move from simple poverty mapping to a deeper understanding of the mechanisms of persistent poverty. The paper emphasises the key role of integrated methodologies and the challenges that are inherent to the process of conceptualising and identifying spatial poverty traps. The article is a review paper focused on a comprehensive and integrated approach to spatial poverty traps. It maps established as well as new, modern and highly sophisticated approaches to the issue under study, linking theoretical, methodological and applied starting points. Through its focus, the paper fills a research gap in a serious issue that, despite its current high relevance, is absent in the Slovak context.

The paper has the following structure. After a short introduction, a chapter follows focusing on a review of the issue in the academic literature, including a typology of poverty traps. The next chapter is devoted to the conceptualisation of spatial poverty traps and examines key aspects and characteristics of poverty traps, their causal mechanisms and driving forces, and indicators on the basis of which spatial poverty traps can be identified. The fourth chapter focuses on presenting analytical approaches and research methodologies, comparing key techniques and tools of individual methodologies, their strengths and weaknesses, limitations and possibilities of application. This is followed by a discussion focused on methodological, temporal, data or contextual limitations of research. The conclusion covers the significance of studying the issue, possible directions for further research, future challenges especially in the area of data and methodology, and recommendations for further research.

2 RESEARCH IN THE ACADEMIC LITERATURE

Billions of people around the world live in spatial poverty traps – geographical hot spots of poverty, disadvantage and marginalisation (Bird, 2019). These are found in remote rural areas as well as in expanding urban slums (World Bank, 2008; Bird et al. 2010). According to the latest available data from the UN programme for human settlements (UN-Habitat), World Bank reports and population estimate from Worldometer, more than 800 million people worldwide lived in slums in 2024 (Olasupo, 2025). Even more extremely poor people, approximately 1.1 billion, lived in "disadvantaged" rural areas (Oxford Poverty and Human Development Initiative, 2024). It can be said that in that year almost a quarter of the world's population lived in these poverty traps. The geographical concentration of poverty in general, its persistence in poverty traps and, in recent years, the expansion of traps (and in some cases even the emergence of new ones) have generated increased academic interest in their research. The following bibliography presents a list of the most significant scientific works on spatial poverty traps, which can be divided into two large groups in terms of theme, significance and size. The first group comprises works focused on theoretical and methodological foundations and concepts for research on poverty traps, with a predominance of works focused on research on self-reinforcing mechanisms of poverty traps. Such research and works examine a whole range of phenomena that create, sustain and characterise poverty traps. The second group of works on poverty traps consists of regional case studies from different countries around the world, with a predominance of research focused on their specificities (different geographical factors conditioning/determining the persistence of poverty traps).

The theoretical basis of spatial poverty traps was laid by Jalan and Ravallion (1997, 1998, 2002), who developed micro-econometric models to test geographic externalities in consumption growth. Ravallion and Wodon (1999) provided key methodological insights into distinguishing between "poor areas" and "only" poor people. Berthelemy (2021) proposed a simple theoretical model of a dual economy, providing starting points for individuals' escape from a poverty trap. Fitz and Suresh (2021) created a simulation model integrating the micro-, meso- and macro-levels of a poverty trap, enabling analysis of the ways in which multiple layers of the poverty trap reinforce each other. Giombini et al. (2023) showed that the Solow–Swan economic growth model combined with a sigmoidal production function can explain changes in poverty traps depending on ongoing economic processes (e.g. relative level of efficiency, productive capacities, lack of know-how, etc.). Flores-Contró and Arnold (2024) use an "omega risk process" with

deterministic growth and a multiplicative jump (collapse) structure to model household capital. They also provided insights into the impact of direct cash capital transfers in alleviating poverty and extreme poverty. Bucelli and McKnight (2024) presented the most significant mechanisms and models assumed to explain the intergenerational transmission of poverty. Azariadis and Stachurski (2005), Carter and Barrett (2006), Chantarat and Barrett (2012), McKay and Perge (2013), Ghatak (2015), von Fintel (2017), Burau and Nguyen (2025) examined mechanisms that create, characterise and maintain poverty traps, studying various models of self-reinforcing mechanisms that cause poverty persistence.

The second, most represented group of works on poverty traps consists of regional case studies at various spatial levels. The large number of such spatially focused works is largely related to the significant role of geography in explaining the etiology and persistence of poverty traps. Such works include, for example, the study by Ravallion and Jalan (1996), Daimon (2001), Minot and Baulch (2002), Minot et al. (2006), Bird and Shepherd (2003), Michálek (2004a, 2004b), Kanbur and Venables (2005), Okwi et al. (2006), Azevedo and Robles (2010), Grant (2010), Naschold (2012), Mohapatra (2021) presented a new statistical test for detecting multiple equilibria in poverty traps. Kolasa and Weychert (2023) used recursive bivariate probit models to analyse causal relationships between unbearably high household health expenditures and falling into poverty in Poland. Huang et al. (2025), by integrating data from a multidimensional socio-economic survey with spatio-temporally continuous observations of night-time lights (Night-time Light) using a combination of ensemble learning and interpretable machine learning, proposed an integrated analytical framework to examine the dynamics of poverty reduction and escape from poverty traps in south-west China.

Poverty traps and their types

Poverty traps are circumstances/mechanisms that make it difficult for individuals or groups to escape poverty, often due to a combination of multiple/many negative factors. The key concept of poverty traps is the fact that once someone is in poverty, it is hard to get out of it. Types of poverty traps can generally be divided according to the specific mechanisms that sustain them. Traps can manifest in various forms, including economic, geographic, health, educational and social. Poverty traps can be divided into several types, including those identified by the economist Paul Collier (2007): the conflict trap, the natural resource trap, the landlocked with bad neighbours trap, and the bad governance trap. Academics from various research fields (their names and works are listed below under the respective types of traps), who also deal with poverty within their specialisations, mention in their research and publications eight specific (basic) types of poverty traps:

Economic poverty traps result primarily from low incomes due to few opportunities or limited access to well-paid jobs. They also include a lack of savings and investment, credit market imperfections (limited access to credit, preventing individuals from investing in business and trapping them in low-income situations), debt cycles (due to high interest rates or lack of access to affordable credit), limited access to capital (inability to obtain capital to start a business or invest due to lack of collateral or credit history), inability to make cumulative investments (some technologies or businesses require a large initial investment that is unattainable for people living in poverty). Economic poverty traps were addressed especially by Barrett and Carter, who co-authored several significant works (Carter & Barrett, 2006); Barrett & Carter, 2013. *Health-related poverty traps* result primarily from poor health (reducing a person's ability to work and earn, leading to a cycle of poverty), limited access to health care (lack of access to quality health care worsens existing health problems and creates new ones), high costs of health care (expensive medical fees push households further into poverty), and "illness–poverty" cycles (in some cases, poverty and illness can create a self-reinforcing cycle in which poverty increases vulnerability to illness and illness further impoverishes individuals). Health poverty traps are analysed in the works of Whitehead et al. (2001), Kolasa and Weychert (2023), Fu et al. (2024).

Education-related poverty traps are the result of limited access to education (lack of access to quality education reduces opportunities for employment and higher wages), low education (a low level of education makes it difficult to find a well-paid job and escape poverty), and lack of training (insufficient access to vocational education, skills development and upskilling prevents career progression). Generational poverty can deepen this cycle because children from poor families lack the resources and support for education. Educational poverty traps have been the subject of research by Barham et al. (1995), van der Berg et al. (2011), Zhang (2014). *Social poverty traps* consist of social exclusion (exclusion from social networks and support systems, also limiting access to information, opportunities and resources), discrimination (based on gender, age, ethnicity or other factors, which may limit access to education, employment and other opportunities), and lack of social capital (limited social ties and support networks hinder access to resources and opportunities). Social poverty traps were addressed by Adato et al. (2006), Chantarat and Barrett (2012), Ikegami et al. (2019), Yang et al. (2023). *Generational poverty traps* – the intergenerational transmission of poverty represents one of the key mechanisms of poverty persistence, consisting in the transmission of poverty from generation to generation, whether due to lack of resources, opportunities, social mobility, limited expectations or aspirations, lack of "role models", etc. It is also the result of a combination of other poverty traps, such as limited access to education, health care and economic opportunities. Intergenerational poverty traps have been examined, for example, by De Schutter et al. (2023), Bavaro et al. (2024), Nolan (2024). *Institutional poverty traps* result from bad governance and public administration (corruption, weak institutions and lack of transparency hinder economic development and deepen poverty), ineffective policies (do not address the root causes of poverty), and insufficient access to justice (insufficient access to justice and legal protection exposes marginalised population groups to even greater vulnerability and abuse). Weak or ineffective institutions, including the legal system, markets and social security networks, create barriers to escaping poverty. For example, poorly functioning markets may not provide adequate opportunities for people with limited resources, or social safety nets may not be sufficient to protect vulnerable individuals. Institutional poverty traps were addressed by Bowles (2006), Matsuyama (2008), Olatunji et al. (2025). *Psychological and behavioral poverty traps* result from long-term exposure to stress, uncertainty and scarcity. These phenomena can lead to fatalism and low ambitions that sustain

the cycle of poverty. This mechanism contributes to the emergence of a psychological poverty trap. Poverty has a fundamental impact on the psyche, which determines decision-making. Stress from scarcity and financial uncertainty also affects the way a person makes financial decisions. Behavioural poverty traps arise when poverty reduces certain aspects of an individual's capabilities, which then perpetuates the situation of poverty. Procrastination and avoidance behaviour then affect the lack of resources, creating a vicious circle. Psychological and behavioural poverty traps were addressed by Dalton et al. (2016), Ghatak (2018), van Gennip (2024). *Spatial poverty traps*, sometimes also geographic poverty traps, are geographical locations/areas where "geographical capital" (physical, natural, social, political and human capital) is low and poverty is high, partly (more or less) due to geographical disadvantage. These are places where households are and remain poor, although under other geographical circumstances they would not be. Spatial poverty traps arise when the endowments of a location explain a substantial part of the poverty of people living there, taking into account individual characteristics or household characteristics (age, education, household size and composition and others). In essence, location largely explains why people living there are poor. Spatial poverty traps are characterized by four main geographical disadvantages and are described as:

1. Geographically remote areas – areas far from centres of political and economic activity.
2. Low-potential or marginal areas – economically and ecologically disadvantaged areas (economically underdeveloped, with few agricultural or natural resources).
3. Disadvantaged areas – politically disadvantaged areas.
4. Poorly integrated areas – areas that are poorly connected physically, communicatively, through markets, etc.

Geographic poverty traps were the main subject of research by Jalan and Ravallion (1997, 2002), Bird and Shepherd (2003), Bird et al. (2010), Bird (2019).

3 CONCEPTUALISATION OF SPATIAL POVERTY TRAPS

Key aspects and characteristics of poverty traps

Spatial poverty traps are geographically bounded areas characterised by persistent, intergenerational poverty, where local factors such as poor infrastructure, environmental degradation, weak institutions and other factors create self-reinforcing feedbacks that prevent individuals and communities from escaping poverty. Geographical capital includes the physical, natural, social, political and human capital of an area (Alkire et al., 2025; Bird, 2019). Geographical areas differ not only in the presence of poverty, but also in its resilience and tendency to reproduce over time. Poverty is not only an income deficit, but also deprivation in many dimensions, including employment opportunities, health, education, standard of living, access to basic services and other areas of life. In spatial traps these deprivations are concentrated and mutually reinforcing. A key aspect of poverty traps is precisely their self-reinforcing dynamics, which distinguishes poverty traps from general (temporary/transitory) poverty. Unlike general poverty, which may result from temporary shocks, poverty traps are rooted in structural and spatial conditions that prevent escape from poverty. It is also important to distinguish between areas that are already in traps and those that are "vulnerable" – i.e. prone to falling into this trap due to certain risks. Although both require attention, the type of intervention differs. In addition, urban and rural poverty traps differ. In rural areas, driving forces are often remoteness, economic backwardness and dependence on agriculture and other disadvantages, whereas in urban areas poverty traps are associated with informal settlements, inadequate public services and crime.

The true nature of poverty traps lies in how multiple deprivations are not only co-located but also causally linked and mutually reinforcing within a particular geographical area. For example, in an area with limited access to health care, poor accessibility may lead to chronic illnesses that reduce educational attainment and labour productivity. Reduced productivity subsequently limits income generation. Lack of income then prevents investment in better health care or education, closing the loop. The spatial concentration of deprivations amplifies these interdependencies, making escape from poverty more difficult. Therefore, research must focus on mapping these intersections and causal pathways of deprivation, not only on individual indicators. Policies must be designed to break these specific feedback loops, which requires integrated, cross-sectoral interventions instead of isolated approaches.

Causal mechanisms and driving forces of poverty traps

- Poor infrastructure: lack of transport and communication networks, which limits access to markets, services and opportunities (Bird & Shepherd, 2003).
- Limited access to basic services (insufficient access to education, health care) and to work (Jalan & Ravallion, 1998).
- Environmental degradation: impacts of climate change, resource depletion and natural disasters affecting livelihoods (Carter et al., 2007; Wackernagel et al., 2021).
- Weak institutions and public administration: lack of property rights, corruption and limited rule of law, which hinder economic activity and social mobility (Daimon, 2001; Chen, 2025; Olatunji et al., 2025).
- Geographical isolation: remoteness and difficult terrain that increase transaction costs (Daimon, 2001; Bird & Shepherd, 2003).
- Deficits in social and human capital: low level of education, poor health and lack of social networks (Haider et al., 2018; Yang et al., 2023; Arif et al., 2025).
- Asset deprivation: lack of human, physical, natural, financial and social capital (Barrett & Carter, 2013; Pang et al., 2023; Arif et al. 2025).

Identifying poverty traps is not only about locating low-income areas, but also about diagnosing which specific combination of these causal mechanisms is most significant in a given locality and how they interact to create a self-reinforcing trap. For example, in one area the primary driving force may be environmental degradation leading to agricultural failure, whereas in another it may be weak public administration leading to a lack of investment. Understanding these specific causes is crucial. This diagnostic approach directly informs the design of precisely targeted and tailored interventions. Without understanding the specific causal mechanisms, there is a risk that policies will be general and ineffective, similar to treating a symptom without addressing the

underlying disease. This means that the identification framework for spatial poverty traps must include methods to derive or establish causal relationships.

Key indicators for identifying poverty traps

The selection of indicators for identifying poverty traps must be systematic and based on several key principles. Indicators must: reflect the multidimensional nature of poverty (relevance), be measurable and data for them must be available and reliable (measurability), be able to capture differences within geographical areas (sensitivity to spatial variation), be able to reveal the causes and dynamics of the trap, not only its symptoms (ability to reflect underlying causal mechanisms and feedback loops). For comprehensive identification, it is necessary to use a wide range of indicators covering different dimensions of poverty and its causes (Bird & Shepherd, 2003; Alkire & Foster, 2011). These can be divided into the following categories (Tab.1).

Measurements based only on income are often insufficient to capture the complexity of poverty, and therefore multidimensional poverty indices offer a more comprehensive view also of spatial poverty traps. The table systematically organises a wide range of indicators into logical categories, directly responding to the multidimensional nature of poverty. It provides a practical reference point for experts, ensuring a comprehensive framework for data collection and analysis. By categorising indicators (socio-economic, infrastructure, …) it helps to visualise the interconnection of factors of spatial poverty traps, moving beyond the view of only a single metric.

4 ANALYTICAL APPROACHES AND RESEARCH METHODOLOGIES

Research on spatial poverty traps requires a combination of robust data, different analytical approaches and quantitative, qualitative and, above all, integrated methodologies that can capture complex spatial patterns and underlying causal mechanisms. For comprehensive analysis, it is necessary to use diverse sources and a wide range of available data. Quantitative data include various household surveys, census data, administrative records, sectoral statistics (health, education), satellite imagery (land use, infrastructure, night-time lights), remote sensing data, etc. These sources provide a broad overview of the distribution of poverty and related indicators. Qualitative data draw on the results of various qualitative studies of vulnerable and marginal groups, various focus groups, interviews with key informants, research and techniques of participatory assessment of territory/locality, etc. These methods are valuable for understanding local conditions and perspectives, the causes of poverty and self-reinforcing mechanisms from the community's perspective. Longitudinal data are necessary for understanding the persistence and dynamics of poverty over time. While cross-sectional data provide only a snapshot at a particular moment, longitudinal data make it possible to track changes and determine whether poverty is transient or permanent.

Quantitative methods

Quantitative methods are the basis for identifying spatial patterns of poverty and deprivation (Oxford Poverty and Human Development Initiative 2015; Bird 2019). Poverty mapping uses a spectrum of data from various surveys and censuses to create high-resolution maps of poverty incidence. Geographic information systems (GIS) have been an important tool for spatial analyses for many years and are suitable for capturing, identifying and visualising spatial patterns of poverty and deprivation, overlapping multiple layers of data (socio-economic, environmental, infrastructure), calculating spatial accessibility of services, schools, health facilities (Grant, 2010; NITI, 2023). Spatial statistics/analysis uses various types of spatial autocorrelation (e.g. Moran's I, Getis-Ord Gi*) to identify statistically significant clusters of high or low poverty, which identifies real or indicates potential traps or areas of relative decline. Geographically weighted regression focuses on analysing how relationships between variables vary in space, revealing localised causal factors (Jalan & Ravallion, 1997). The Village Development Index is a composite index describing the level of development of a rural village at a particular time (Oxford Poverty & Human Development Initiative, 2024). Network analysis is a method focused on assessing connectivity and isolation of communities and identifying areas cut off from markets and services. Machine learning and predictive modelling focuses on identifying complex patterns and predicting areas at risk of falling into poverty traps or those already in a trap, based on many inputs. The method can process large datasets and identify non-linear relationships. Spatial econometric methods include point pattern analysis, geostatistics and areal data analysis used to understand spatial relationships in data. The importance of causal inference methods lies mainly in identifying a causal relationship between variables instead of simply observing associations. Unlike correlation, which only measures the extent to which two variables move together, causal inference seeks to establish that one variable directly affects another. This distinction is essential because correlation does not imply causation; two variables may correlate due to a third, unobserved factor that biases the relationship. Causal inference appears to be a suitable and promising method for understanding the impact of interventions, policies or phenomena and provides insights guiding decision-making and strategic planning in general, but also in the context of poverty traps. Advanced machine learning, compared with traditional machine learning, makes greater use of data to improve system performance. Data-driven advanced machine learning is an important approach that seeks laws from observed data and uses regular patterns to predict future unobservable data. These modern methods have great potential for research on poverty traps.

Qualitative methods

Qualitative methods complement quantitative findings by providing in-depth contextual understanding of poverty traps. They provide context, validate quantitative findings and reveal hidden social dynamics or informal institutions that quantitative data might overlook. Among the most used qualitative methods for research on poverty traps are Participatory Rural Assessment and Participatory Learning and Action, based on and relying on the involvement of local communities in understanding their perceptions of poverty, its causes, coping strategies and self-reinforcing mechanisms from their lived experience. Other fairly often used qualitative methods for research on poverty traps include: Focus Group Discussion, Key Informant Interview and Case Studies.

Focus Group Discussion involves a group of people who meet to discuss a particular topic or problem of spatial poverty traps, with the aim of obtaining detailed

Tab. 1. Multidimensional indicators for identifying spatial poverty traps

Indicator category	Indicator type	Specific examples	Relevance for identifying spatial poverty traps
Socio-economic	Income and consumption	Income per capita, household expenditure, poverty rate	Basic measure of economic deprivation. Indicate economic stagnation.
	Education	Literacy rate, school enrolment, level of education	Low education limits human capital and opportunities, thereby deepening poverty.
	Health	Child mortality, access to health care, level of chronic morbidity	Poor health reduces productivity and increases expenditure, hindering escape from poverty.
	Employment and livelihoods	Rate of (long-term) unemployment, share of the informal sector	Lack of stable job opportunities and reliance on vulnerable livelihoods sustain poverty.
Infrastructure	Access to basic services	Drinking water, sanitation, electricity	Lack of access to basic services directly affects health and standard of living.
	Connectivity	Density of transport networks, internet access, mobile network coverage	Limited connectivity isolates communities from markets, education and information.
	Market access	Distance to markets, transport costs	High transaction costs limit economic opportunities and increase the prices of goods.
Environmental	Resource availability	Water scarcity, land degradation, deforestation	Depletion of natural resources directly threatens livelihoods, especially in agricultural areas.
	Exposure to shocks	Flood risk, drought frequency, vulnerability to climate change	Increases household vulnerability and prevents asset accumulation, thereby deepening poverty.
Institutional and governance	Access to justice and security	Crime rate, property rights	Lack of security and insecure property rights deter investment and economic activity.
	Local governance capacity	Quality of public services	Weak governance leads to inefficient service provision and limited opportunities.
	Social relations	Trust, community networks	Low social awareness limits collective action and community resilience.
Asset-based	Human capital	Education, health, qualifications (as assets)	Low human capital limits individuals' ability to generate income and improve life.
	Material capital	Housing quality, household assets	Lack of material assets reduces resilience to shocks and limits productive capacity.
	Natural capital	Access to productive land, water	Limited access to natural resources threatens livelihoods.
	Financial capital	Access to credit, savings	Lack of financial capital prevents investment, innovation and the ability to cope with shocks.
	Social capital	Networks, membership in groups (as assets)	Weak social networks limit access to information, support and opportunities.

Source: Alkire & Foster (2011), Whelan et al. (2014)

information about a particular topic or problem by exploring the perspectives of different individuals. Key Informant Interview involves interviews with key informants. These are usually experts in their field, policy-makers or individuals with extensive experience in the area under study (poverty, social or regional policy, operational programmes focused on the development of lagging territories, combating poverty and social exclusion, etc.) or specific knowledge related to spatial poverty traps. The aim of this method is to gather from these experts detailed information on specific issues related to spatial poverty traps. Case Studies focus on in-depth analyses of specific areas (identified as real or potential poverty traps) and on understanding the nuanced interplay of factors.

Integrated approaches

The most effective approach to identifying spatial poverty traps lies in integrating quantitative and qualitative methods. While quantitative methods identify "where" and "what", qualitative methods explain "why" and "how". The synergy of methods for causal inference (the process of deriving new information or conclusions based on given information and rules) and actionability are the key. Purely quantitative methods can identify correlations and clusters but struggle to definitively establish causal relationships or capture local context and the human factor. For example, GIS can show an area with high child mortality, but it will not say why – whether it is due to poor health care or accessibility or other causes (e.g. a specific disease). Qualitative methods can provide these "why" answers, revealing

Tab. 2. Comparative analysis of methodological approaches

Methodology	Key techniques/ tools	Strengths	Weaknesses/ limitations	Specific applications for identifying traps
GIS and spatial analysis	Overlay analysis, accessibility modelling, map visualisation	Analyses and visualises spatial patterns, identifies areas with overlapping deprivation, quantifies accessibility	Data-intensive, requires specialised software and skills, does not identify causal links directly	Identification of areas with a high concentration of deprivation, assessment of access to services
Spatial statistics	Moran's I, Getis-Ord Gi*, geographically weighted regression	Identifies statistically significant clusters (hot/cold spots), reveals localised relationships between variables	Requires advanced statistical knowledge, sensitive to the definition of spatial weights	Precise determination of geographical boundaries of traps, identification of local driving forces of poverty
Machine learning and predictive modelling	Classification algorithms, regression models, neural networks	Can process large datasets, identifies complex non-linear relationships, predicts risk areas	Requires large volumes of high-quality training data, "black box" effect (difficult interpretation)	Prediction of future traps, identification of complex patterns leading to a trap
Contemporary analytical approaches	Spatial econometrics, causal inference models, advanced machine learning algorithms	Ability to identify a causal relationship between variables; understanding spatial relationships in data	Difficulty of determining causal relationships in complex systems (inherent risk)	Essential for drawing valid conclusions in science, policy and AI, as they enable researchers and practitioners to identify real effects of interventions or variables, not only associations
Qualitative approaches (PRA, PUA, FGD, KII)	Participatory mapping, focus groups, in-depth interviews	Captures local context, community perceptions, reveals hidden social dynamics and causal mechanisms	Time- and labour-intensive, limited generalisability, depends on facilitator skills	Understanding "why" and "how" traps work, validation of quantitative findings, revealing feedback loops
Integrated/ mixed methods	Triangulation, sequential/ concurrent designs	Provides a comprehensive and robust picture, increases the validity of findings, combines breadth and depth	Requires careful planning and coordination, can be resource-intensive	Comprehensive understanding of spatial poverty traps, from identification to intervention design

Source: compiled based on the works listed in the references

local feedback loops. Synergy enables a more complete picture: quantitative methods identify patterns and the scale of the problem, while qualitative methods provide the depth and context needed to understand the mechanisms of the trap. This integrated approach is vital for designing truly actionable and effective interventions. Without qualitative insights, policies could be based on incomplete assumptions, leading to failure to address the true underlying causes. Without quantitative rigour, interventions could lack the scale of necessary measures or be misallocated. This holistic understanding is crucial for overcoming the self-reinforcing cycles that define spatial poverty traps. Triangulation is the combination of quantitative findings with qualitative insights to provide a more robust and nuanced understanding. A Mixed Methods Design involves sequential or concurrent integration of quantitative and qualitative research phases. Table 2 integrates and compares the most used methodologies for research on poverty traps, their weaknesses/strengths and determination and suitability for examining specific problems.

The table is a basic and indispensable source of knowledge and information for academic staff and decision-makers when selecting appropriate methods for different phases of poverty trap research, understanding trade-offs and the importance of key techniques and tools. By clearly outlining strengths/ weaknesses and specific applications, it helps users build a robust, integrated methodology tailored to their specific context and available resources. The content of the table directly supports the aim of the paper and, in condensed form, provides a comprehensive analytical framework for poverty trap research.

5 DISCUSSION

Research on spatial poverty traps is a complex task facing several important challenges. One of them is limitations in data, their absence, availability and quality. These data problems represent a significant obstacle to research on poverty traps and subsequent effective solutions and strategies. Cross-sectional data moreover offer only an instantaneous picture and do not allow the temporal aspects of poverty to be distinguished. Since spatial poverty traps are not a static but a dynamically evolving subject, they require continuous monitoring and adaptive identification frameworks that can capture changes over time. Lack of longitudinal data prevents tracking changes over time and understanding poverty persistence, which is crucial for identifying a "trap". Without adequate

longitudinal data, it is difficult to distinguish transient poverty from persistent, trapped (poverty trap) poverty. When working with sensitive data, it is also necessary to consider ethical aspects, ensure the protection of personal data and confidentiality, avoid stigmatisation (identifying an area as a "poverty trap" requires sensitive communication and approach) and ensure genuine inclusiveness (participatory approaches must be inclusive and empowering for local communities).

Another challenge in studying poverty traps are self-reinforcing mechanisms, which are the determining factor of poverty persistence, and lack of knowledge of them causes limitations of causal inference. Understanding them is key for designing realistic and effective strategies for addressing poverty. Without knowledge of self-reinforcing mechanisms, it is difficult to precisely determine the spatial extent of a trap or localised causal factors. This directly hinders the ability to infer robust causal relationships and understand the dynamic nature of the trap. We may identify a poor area, but not necessarily a poverty trap. This means that identification efforts must often make pragmatic trade-offs, potentially leading to less precise targeting or a shallower understanding of trap dynamics. It also highlights the critical need for sustained investment in national statistical systems and innovative data collection methods (e.g. combining traditional surveys with satellite imagery) to overcome these limitations and enable more effective policy design.

Several problems with research and identification of poverty traps also relate to geographical scale. Current, reliable and consistent data are often lacking at sub-national, but especially at local and areal levels. This makes precise mapping and analysis difficult. To identify specific traps, highly localised data are needed, i.e. their granularity and disaggregation, not broad and little-informative regional averages. Aggregated data can mask internal variation and true poverty hot spots. The definition of the spatial unit (e.g. area, settlement unit, municipality, district) can significantly affect analysis results. Findings may differ depending on the level of spatial aggregation, which is known as the Modifiable Areal Unit Problem. This requires careful consideration when defining analytical units. It is a statistical problem that arises when aggregating spatial data, where results depend on the way data are grouped into areal units.

6 CONCLUSION

Identifying spatial poverty traps is not an end in itself, but a critical first step towards designing effective, spatially targeted policies. Interventions must be tailored to the specific causal mechanisms identified within each trap. From diagnosis to prescription of necessary tailored solutions. If spatial poverty traps are characterised by unique combinations of self-reinforcing mechanisms, then a "one size fits all" approach will not be effective. The identification process, especially through emphasising multidimensional indicators and integrated methodologies, provides a diagnostic map of these specific mechanisms. For example, if a trap is primarily driven by poor health or access to health care, then health interventions are paramount. If it is low income, then economic changes and reforms are needed. This suggests a shift from broad development programmes to highly localised, context-specific interventions. It requires cross-sector cooperation (e.g. joint efforts of ministries of economy, health, education) and flexible financing mechanisms. Policy success directly depends on the accuracy and depth of initial identification.

Based on the comprehensive analytical framework, the following key recommendations can be formulated: integrated cross-sector programmes (address the interconnected nature of deprivations by combining interventions in health, education, infrastructure and livelihoods). Investments in data infrastructure (prioritise collecting detailed, longitudinal and multidimensional data to improve identification accuracy). This includes supporting national statistical systems and using innovative data sources. Building and strengthening local and national capacities (data management, spatial analysis and integrated planning). Community engagement (support participatory approaches in both identification and the design of interventions to ensure relevance). Adaptive governance and monitoring (establish systems for continuous monitoring and evaluation to track the evolution of traps and adjust policies accordingly). Designing and providing solutions aimed at breaking feedback loops (design specific interventions that would disrupt self-reinforcing cycles). Proactive measures (take measures to prevent vulnerable areas from falling into a poverty trap).

Identifying spatial poverty traps is essential for effective and targeted development efforts. As this study has shown, it requires a sophisticated, multidimensional and integrated approach that goes beyond simple poverty mapping. The key is understanding self-reinforcing mechanisms and the interaction of various factors – from infrastructure and environment to institutions and human capital. Quantitative tools such as GIS and spatial analysis are essential to reveal spatial patterns and clusters, while qualitative insights are crucial to understand underlying causes and local context. The synergy of these approaches provides a comprehensive picture that is necessary for designing targeted and tailored interventions. Future directions for research and practice should focus on developing more sophisticated methods of causal inference for spatial data, using big data and artificial intelligence for real-time monitoring, and further research into the specific dynamics of urban and rural traps. In addition, it is necessary to strengthen the link between identification and impact evaluation of interventions to ensure that policies are not only well designed but also effective in breaking cycles of persistent poverty. It should also be borne in mind that the dynamic and evolving nature of traps is a complex set of changes and their permanent monitoring carries many pitfalls and is demanding in several respects.

Footnotes

[1] The AROPE indicator is the main measure used to monitor the EU 2030 target in the area of poverty and social exclusion. In addition to the concept of income poverty, the indicator takes into account two other dimensions: material and social deprivation, and exclusion from the labor market. The at-risk-of-income-poverty rate represents the share of persons (in percentage terms) in the total population whose equivalized disposable income is below the at-risk-of-poverty threshold (defined as 60% of the national median equivalized disposable income). The severe material and social deprivation rate expresses the share of the population (in percentage terms) that faces enforced lack of at least seven items out of a list of thirteen items of material and social deprivation.

The very low work intensity rate represents the share of all persons aged 0–64 living in households where working-age members worked less than 20% of their total work potential during the previous year. The AROPE indicator is defined as the number of people who are at risk of income poverty and/or are severely materially and socially deprived and/or live in a household with very low work intensity. AROPE is expressed as the share of people at risk of poverty or social exclusion.

[2] Within the EU, poverty is most commonly measured using income poverty thresholds. The at-risk-of-income-poverty threshold is set at 60% of the national median equivalized disposable income. It is expressed in purchasing power parity (PPP) and in euros. This is a relative poverty threshold, which measures the extent to which household financial resources fall below the median income level of society. This indicator primarily reflects the risk of income poverty and is dependent on the socio-economic development of a given country. Persons whose income does not reach 60% of the median income are considered to be "at risk of income poverty".

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REFERENCES

Adato, M., Carter, M. R., & May, J. (2006). Exploring poverty traps and social exclusion in South Africa using qualitative and quantitative data. The Journal of Development Studies, 42(2), 226–247. https://doi.org/10.1080/00220380500405345

Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. Journal of Public Economics, 95(7-8), 476–487. https://doi.org/10.1016/j.jpubeco.2010.11.006

Alkire, S., Mishra, R., Selden, L. and Suppa, N (2025). Multidimensional Poverty Index (MPI). Our World in Data. Retrieved [Data set]. https://ourworldindata.org/grapher/multidimensional-poverty-index-mpi

Arif, M., Muta'ali, L., & Rijanta, R. (2025). Mapping poverty traps in Indonesia: a spatial perspective. Regional Statistics, 15(2), 341–364. https://doi.org/10.15196/RS150207

Azariadis, C., & Stachurski, J. (2005). Poverty Traps. In P. Aghion, & S. N. Durlauf (Eds.), Handbook of Economic Growth (pp. 295–384). Elsevier. https://doi.org/10.1016/S1574-0684(05)01005-1

Azevedo, V. M. R., & Robles, M. (2010). Geographical Poverty Traps in Ecuador using Pseudo Panel Data. 2010 PAA Annual Meeting.

Barham, V., Boadway, R., Marchand, M., & Pestieau, P. (1995). Education and the poverty trap. European Economic Review, 39(7), 1257–1275. https://doi.org/10.1016/0014-2921(94)00040-7

Barrett, C. B., & Carter, M. R. (2013). The economics of poverty traps and persistent poverty: Policy and empirical implications. The Journal of Development Studies, 49(7), 976–990. https://doi.org/10.1080/00220388.2013.785527

Bavaro, M., Carranza, R., & Nolan, B. (2024). Intergenerational Poverty Persistence in Europe – Is There a "Great Gatsby Curve" for Poverty? Research in Social Stratification and Mobility, 94, 100991. https://doi.org/10.1016/j.rssm.2024.100991

Berthelemy, J. C. (2021). Exits from the poverty trap and growth accelerations in a dual economy model. Review of Development Economics, 25(3), 1197–1215. https://doi.org/10.1111/rode.12776

Bird, K. (2019). Addressing Spatial Poverty Traps. United Nations Department of Economic and Social Affairs (UNDP). https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2019/02/Spatial-poverty-traps-by-Kate-Bird.pdf

Bird, K., & Shepherd, A. (2003). Livelihoods and Chronic Poverty in Semi-Arid Zimbabwe. World Development, 31(3), 591–610. https://doi.org/10.1016/S0305-750X(02)00220-6

Bird, K., Higgins, K., & Harris, D. (2010). Spatial poverty traps. An overview. Overseas Development Institute, London, United Kingdom. https://odi.org/en/publications/spatial-poverty-traps-an-overview/

Bowles, S. (2006). Institutional Poverty Traps. In S. Bowles, S. Durlauf, & K. Hoff (Eds.), Poverty Traps (pp. 116–138). Princeton University Press. https://doi.org/10.1515/9781400841295.116

Bucelli, I. & McKnight, A. (2024). Review of the Mechanisms Underlying the Intergenerational Transmission of Poverty. Itla Reports 2024:3.

Burau, O. & Nguyen, T. T. (2025). Persistent Poverty in Rural Vietnam: Differential Asset Dynamics and the Role of Ethnic Minorities. Journal of Development Studies, 61(10), 1709–1729. https://doi.org/10.1080/00220388.2025.2489563

Carter, M. R., & Barrett, C. B. (2006). The economics of poverty traps and persistent poverty: An asset-based approach. The Journal of Development Studies, 42(2), 178–199. https://doi.org/10.1080/00220380500405261

Carter, M. R., Little, P. D., Mogues, T., & Negatu, W. (2007). Poverty Traps and Natural Disasters in Ethiopia and Honduras. World Development, 35(5), 835–856. https://doi.org/10.1016/j.worlddev.2006.09.010

Collier P. (2007). The Bottom Billion: Why the Poorest Countries are Failing and What Can Be Done About It. Oxford University Press.

Chantarat, S., & Barrett, C. B. (2012). Social network capital, economic mobility and poverty traps. Journal Economic Inequality, 10(3), 299–342. https://doi.org/10.1007/s10888-011-9164-5

Chen, J. (2025). Understanding the Poverty Trap: Causes, Solutions, and Economic Impact. Investopedia. https://www.investopedia.com/terms/p/poverty-trap.asp

Chronic Poverty Research Centre (2004). Chronic Poverty Report 2004-05. Manchester: CPRC, University of Manchester.

Daimon, T. (2001). The Spatial Dimension of Welfare and Poverty: Lessons from a Regional Targeting Program in Indonesia. Working Papers EMS_2001_04. Research Institute, International University of Japan.

Dalton, P. S., Ghosal, S., & Mani, A. (2016). Poverty and Aspirations Failure. The Economic Journal, 126(590), 165–188. https://doi.org/10.1111/ecoj.12210

De Schutter, O., Frazer, H., Guio, A. C., & Marlier, E. (2023). The escape from poverty: Breaking the vicious cycles perpetuating disadvantage. Bristol University Press: Policy Press Shorts Research.

Eurostat (2025). Persons at risk of poverty or social exclusion by age and sex. [Data set]. https://ec.europa.eu/eurostat/databrowser/view/ilc_peps01n__custom_179063 82/default/table

Fitz, D., & Suresh, S. G. (2021). Poverty traps across levels of aggregation. Journal Economic Interaction and Coordination, 16(4), 909–953. https://doi.org/10.1007/s11403-021-00333-6

Flores-Contró, J. M., & Arnold, S. (2024). The role of direct capital cash transfers towards poverty and extreme poverty alleviation - an omega risk process. Scandinavian Actuarial Journal, 2024(8), 781–812. https://doi.org/10.1080/03461238.2024.2321574

Fu, L., Pei, T., Xu, J., Han, J. & Yang, J. (2024). Inspecting the "health poverty trap" mechanism: self-reinforcing effect and endogenous force. BMC Public Health, 24, 917. https://doi.org/10.1186/s12889-024-18464-3

Ghatak, M. (2015). Theories of Poverty Traps and Anti-Poverty Policies. The World Bank Economic Review, 29(suppl_1), 77–105. https://doi.org/10.1093/wber/lhv021

Ghatak, M. (2018). Comment on chapter 9, "Sustaining Impacts When Transfers End: Women Leaders, Aspirations, and Investments in Children." p. 383–393. In C. B. Barrett, M. R. Carter, & J. Chavas (Eds.), The Economy of Poverty Traps. University of Chicago Press. https://www.nber.org/system/files/chapters/c13951/c13951.pdf

Giombini, G., Grassetti, F., & Carrera, E, S. (2023). Economic growth, poverty traps and cycles: productive capacities versus inefficiencies. Journal of Economic Studies, 50(7), 1375–1398. https://doi.org/10.1108/JES-06-2022-0365

Grant, U. (2010). Spatial inequality and urban poverty traps. ODI Working Paper 326, CPRC Working Paper 166. Overseas Development Institute & Chronic Poverty Research Centre. https://assets.publishing.service.gov.uk/media/57a08b29ed915d622c000b43/WP166-Grant.pdf

Haider, L. J., Boonstra, W. J., Peterson, G. D., & Schlüter, M. (2018). Traps and Sustainable Development in Rural Areas: A Review. World Development, 101, 311–321. https://doi.org/10.1016/j.worlddev.2017.05.038

Higgins, K., Bird, K., & Harris, D. (2010). Policy responses to spatial poverty traps. ODI Working Paper 328, CPRC Working Paper 168. Overseas Development Institute & Chronic Poverty Research Centre. https://media.odi.org/documents/5518.pdf

Huang, S., Shao, Y., Hu, L., Bi, J., & Ma, Z. (2025). Unveiling the Spatio-Temporal Patterns and mechanisms of poverty incidence in Southwest China through multi-sourced data and interpretable machine learning. Applied Geography, 176, 103541. https://doi.org/10.1016/j.apgeog.2025.103541

Ikegami, M., Carter, M. R., Barrett, C. B., & Janzen, S. (2019). Poverty Traps and the Social Protection Paradox. In C. B. Barrett, M. R. Carter, & J. P. Chavas (Eds.), The Economics of Poverty Traps (pp. 223–256). University of Chicago Press.

Jalan, J., & Ravallion, M. (1997). Spatial poverty traps? (World Bank Policy Research Working Paper No. 1862). World Bank. https://documents1.worldbank.org/curated/en/207861468743989544/pdf/multi0page.pdf

Jalan, J., & Ravallion, M. (1998). Transient Poverty in Postreform Rural China. Journal of Comparative Economics, 26(2), 338–357. https://doi.org/10.1006/jcec.1998.1526

Jalan, J., & Ravallion, M. (2002). Geographic Poverty Traps? A Micro Model of Consumption Growth in Rural China. Journal of Applied Econometrics, 17(4), 329–346. https://doi.org/10.1002/jae.645

Kanbur, R., & Venables, A. J. (2005). Adverse geography and differences in welfare in Peru. In R. Kanbur, & A. J. Venables (Eds.), Spatial inequality and development (pp. 77–122). Oxford University Press. https://doi.org/10.1093/0199278636.003.0005

Kolasa, A., & Weychert, E. (2023). The causal effect of catastrophic health expenditure on poverty in Poland. European Journal of Health Economics, 25(2), 193–206. https://doi.org/10.1007/s10198-023-01579-6

Matsuyama, K. (2008). Poverty Traps. In The New Palgrave Dictionary of Economics, eds. S. N. Durlauf and L. E. Blume, London: Palgrave Macmillan. https://doi.org/10.1007/978-1-349-58802-2_1317

McKay, A., & Perge, E. (2013). How Strong is the Evidence for the Existence of Poverty Traps? A Multicountry Assessment. Journal of Development Studies, 49(7), 877–897. https://doi.org/10.1080/00220388.2013.785521

Michálek, A. (2004a). Chudoba na lokálnej úrovni (centrá chudoby na Slovensku). Geografický časopis / Geographical Journal, 56(3), 225–247.

Michálek, A. (2004b). Cores of Poverty in Slovakia. Geographica Pannonica, 8, 25–28.

Minot, N., & Baulch, B. (2002). The spatial distribution of poverty in Vietnam and the potential for targeting (World Bank Policy Research Working Paper No. 2829). World Bank. https://doi.org/10.1596/181394502829

Minot, N., Baulch, B., & Epprecht, M. (2006). Poverty and inequality in Vietnam: Spatial patterns and geographic determinants (Research Report No. 148). International Food Policy Research Institute. https://doi.org/10.22004/ag.econ.37882

Mohapatra, S. (2021). A new approach for detecting multiple-equilibria poverty traps. Journal of International Development, 33(5), 894–909. https://doi.org/10.1002/jid.3563

Naschold, F. (2012). "The Poor Stay Poor": Household Asset Poverty Traps in Rural Semi-Arid India. World Development, 40(10), 2033–2043. https://doi.org/10.1016/j.worlddev.2012.05.006

Nolan, B. (2024). Intergenerational persistence of poverty. In Elina Kilpi-Jakonen & Jo Blanden & Jani Erola & Lindsey Macmillan (Eds.), Research Handbook on Intergenerational Inequality, chapter 6, (pp. 73–85). Edward Elgar Publishing. https://doi.org/10.4337/9781800888265.00013

NITI (2023). India national multidimensional poverty index 2023: A progress review. Government of India. https://www.niti.gov.in/sites/default/files/2023-08/India-National-Multidimentional-Poverty-Index-2023.pdf

Okwi, P. O., Ndeng'e, G., Kristjanson, P., Arunga, M., Notenbaert, A., Omolo, A., Henninger, N., Benson, T., Kariuki, P., & Owuor, J. (2006). Geographic determinants of poverty in rural Kenya: A national and provincial analysis. Rockefeller Foundation. https://sarpn.org/documents/d0002525/Geographic_determinants_Kenya_Apr2006.pdf

Olasupo, F. (2025). Top 10 countries with the largest slum populations in the world as of early 2025. Business Insider Africa. https://africa.businessinsider.com/local/lifestyle/top-10-countries-with-the-largest-slum-populations-in-the-world-as-of-early-2025/m30b5eg

Olatunji, A., Ado-Kofie, L., & Ouattara, B. (2025). Infrastructure and Poverty Traps. Poverty & Public Policy, 17(3), e70027. https://doi.org/10.1002/pop4.70027

Oxford Poverty and Human Development Initiative (2015). Measuring multidimensional poverty: Insights from around the world (OPHI Research Briefing No. 30). University of Oxford. https://

ophi.org.uk/sites/default/files/2024-03/OPHI_Briefing_30_2015_%28online%29.pdf

Oxford Poverty and Human Development Initiative (2024). Global multidimensional poverty index 2024: Poverty amid conflict, (pp. 1–33). Oxford Poverty and Human Development Initiative. https://ophi.org.uk/sites/default/files/2024-10/Global_MPI_2024_report_%28Conflict%29.pdf

Pang, J., Zhang, Y., & Jiao, F. (2023). The Impact of the Digital Economy on Transformation and Upgrading of Industrial Structure: A Perspective Based on the "Poverty Trap". Sustainability, 15(20), 15125. https://doi.org/10.3390/su152015125

Ravallion, M., & Jalan, J. (1996). Growth divergence due to spatial externalities. Economics Letters, 53(2), 227–232. https://doi.org/10.1016/S0165-1765(96)00899-3

Ravallion, M., & Wodon, Q. (1999). 'Poor Areas, or Only Poor People?' Journal of Regional Science, 39(4), 689–711. https://doi.org/10.1111/0022-4146.00156

Štatistický úrad SR (2025a). Medziročná inflácia (medziročná miera zmeny) meraná HICP - podrobné členenie - mesačne [sp1018ms] [Data set]. DATAcube. https://datacube.statistics.sk/#!/view/sk/VBD_SK_WIN/sp1018ms/v_sp1018ms_00_00_00_sk

Štatistický úrad SR (2025b). Miera rizika chudoby alebo sociálneho vylúčenia v členení podľa krajov. [Data set]. DATAcube. https://datacube.statistics.sk/#!/view/sk/vbd_sk_win2/ps3814rr/v_ps3814rr_00_00_00_sk

Štatistický úrad SR (2025c).. Príjmová chudoba podľa krajov SR – ročne. [Data set]. DATAcube https://datacube.statistics.sk/#!/view/sk/vbd_sk_win2/ps3813rr/v_ps3813rr_00_00_00_sk

UK Department for International Development (2013). Regional dimension of poverty and vulnerability in Nepal. Summary Report. Discussion Paper (UK DFID). https://assets.publishing.service.gov.uk/media/5a7c775fed915d6969f45118/Regional-Dimensions-Poverty-Nepal.pdf

van der Berg, S., Burger, C., Burger, R., de Vos, M., du Rand, G., Gustafsson, M., Moses, E., Shepherd, D. L., Spaull, N., Taylor, S., van Broekhuizen, H., & von Fintel, D. (2011). Low Quality Education as a Poverty Trap. Stellenbosch Economic Working Papers No. 25/2011. Initially a synthesis report to PSPPD. https://doi.org/10.2139/ssrn.2973766

van Gennip, M. (2024). The Psychological Poverty Trap: How Lack of Money Impacts Decision–Making, Procrastination and Loss of Control. Universiteit Leiden. https://www.universiteitleiden.nl/en/news/2024/03/the-psychological-poverty-trap-how-lack-of-money-impacts-decision-making-procrastination-and-loss-of-control

von Fintel, M. (2017). Income Dynamics, Assets and Poverty Traps in South Africa. Journal of Human Development and Capabilities, 18(4), 442–463. https://doi.org/10.1080/19452829.2017.1392491

Wackernagel, M., Hanscom, L., Jayasinghe, P., Lin, D., Murthy, A., Neil, E., & Raven, P. (2021). The importance of resource security for poverty eradication. Nature Sustainability, 4, 731–738. https://doi.org/10.1038/s41893-021-00708-4

Whelan, C. T., Nolan, B., & Maitre, B. (2014). Multidimensional poverty measurement in Europe: an application of the adjusted headcount approach. Journal of European Social Policy, 24(2), 183–197. https://doi.org/10.1177/0958928713517914

Whitehead, M., Dahlgren, G., & Evans, T. (2001). Equity and health sector reforms: can low-income countries escape the medical poverty trap? The Lancet, 358(9284), 833–836. https://doi.org/10.1016/S0140-6736(01)05975-X

World Bank (2008). Reshaping Economic Geography – 2009 World Development Report. Washington, DC: World Bank. https://documents1.worldbank.org/curated/en/730971468139804495/pdf/437380REVISED01BLIC1097808213760720.pdf

Yang, Z., Yang, D., Sun, D. & Zhong, L. (2023). Ecological and social poverty traps: Complex interactions moving toward sustainable development. Sustainable Development, 31(2), 853–864. https://doi.org/10.1002/sd.2425

Zhang, H. (2014). The poverty trap of education: Education–poverty connections in Western China. International Journal of Educational Development, 38, 47–58. https://doi.org/10.1016/j.ijedudev.2014.05.003

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