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Not All Determinants Are Equal: A Systematic Literature Review of Education, Employment Status, and Household Size in Household Extreme Poverty

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Article Info

Article history:

Received 2026-06-24

Revised 2026-07-21

Accepted 2026-07-23

Keywords:

Education

Employment status

Extreme poverty

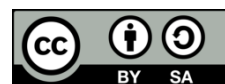
Household size

Systematic literature review

ABSTRACT

Extreme poverty remains an urgent global development challenge. Determinants such as education, employment status, and household size are often studied in isolation, fragmenting understanding of their interactions, while findings are inconsistent, particularly for household size and informal employment, motivating this review. This study synthesizes empirical evidence on how educational attainment, employment status, and household size affect the probability of household extreme poverty, identifying patterns of consistency and inconsistency across prior studies. Following PRISMA guidelines, this Systematic Literature Review searched Scopus using a Boolean string combining keywords for education, employment status, household size, and extreme poverty. Studies were selected via inclusion and exclusion criteria on year, language, type, and relevance; extraction was narrative, without formal quality assessment. Twelve studies support a negative education effect, though two report non-significant or reversed results. Eight studies link unstable employment to higher poverty risk, but only two directly test the formal-informal dichotomy. Nine studies agree that a larger household size raises poverty risk, though the magnitude varies up to sevenfold. Education and household size offer the most consistent evidence as determinants, while employment status needs further direct testing given reliance on non-equivalent proxies. Future research should integrate all three determinants into a single model and apply meta-analysis to test the identified magnitude gaps.

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1. INTRODUCTION

Extreme poverty remains one of the most pressing global development challenges. The World Bank defines extreme poverty as living below the international poverty line, which was updated from US\$1.90 (2011 PPP) to US\$2.15 per day (2017 PPP) [1], [2]. Although the number of people living in extreme poverty declined substantially between

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<https://doi.org/10.58421/misro.v5i3.1829>

1990 and 2019, the pace of poverty reduction had already slowed before the COVID-19 pandemic and subsequently reversed during the crisis, pushing an estimated 60–150 million additional people into extreme poverty [3], [6]. As a result, achieving Sustainable Development Goal (SDG) 1, which aims to eradicate extreme poverty by 2030, has become increasingly difficult due to the combined effects of conflict, climate change, inequality, and post-pandemic economic disruption [6], [8].

The burden of extreme poverty remains heavily concentrated in developing countries, particularly in Sub-Saharan Africa and South Asia, where poverty is closely associated with low educational attainment, informal employment, large household size, and high dependency ratios [9], [13]. Beyond income deprivation, extreme poverty limits access to education, healthcare, and nutrition, reducing human capital formation, labor productivity, and long-term economic growth while reinforcing intergenerational poverty [14], [18].

This study examines household extreme poverty through three complementary theoretical perspectives. Human capital theory argues that education enhances workers' productivity and income, thereby reducing the risk of poverty. Nevertheless, educational attainment alone does not guarantee higher earnings because labor market mismatches may weaken the economic returns to education [19], [22]. Labor market theory emphasizes the distinction between formal and informal employment, where informal workers generally experience lower earnings, weaker social protection, and greater economic vulnerability [23], [25]. Household economic theory further explains that household welfare depends not only on income but also on the allocation of resources among household members and the economies of scale associated with household size and composition [26], [28].

Previous empirical studies consistently identify education, employment status, and household size as important determinants of household extreme poverty. Higher educational attainment generally lowers poverty risk by improving employment opportunities and earnings [29], [31]. Likewise, households headed by individuals employed in the formal sector tend to experience lower poverty than those relying on informal employment because formal jobs typically provide more stable income and better social protection [32], [34]. In contrast, evidence regarding household size remains less consistent. While many studies report that larger households are more vulnerable to poverty because of higher consumption needs, others suggest that larger households may benefit from additional working-age members and economies of scale, depending on the poverty measurement approach adopted [35], [37].

Despite the growing body of literature, several important gaps remain. First, previous studies predominantly examine education, employment status, and household size separately, limiting understanding of their relative importance within a unified framework. Second, empirical findings regarding household size and informal employment remain inconsistent across countries and poverty measures. Third, existing evidence is dominated by country-specific quantitative studies, whereas comprehensive syntheses comparing findings across multiple contexts remain limited. Consequently, a systematic review is needed to integrate existing evidence, identify consistent patterns, and clarify areas where findings remain inconclusive.

Accordingly, this study conducts a Systematic Literature Review to synthesize current evidence on the roles of education, employment status, and household size in shaping household extreme poverty. By critically evaluating previous studies, this review identifies the determinants supported by the strongest empirical evidence, highlights inconsistencies requiring further investigation, and provides a more comprehensive understanding of household extreme poverty. The findings are expected to contribute to theoretical development, guide future empirical research, and provide evidence-based insights for policymakers seeking more effective, targeted poverty-reduction strategies in support of Sustainable Development Goal 1.

2. METHOD

This study employed a Systematic Literature Review (SLR) following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to systematically identify, evaluate, and synthesize evidence on the effects of educational attainment, employment status, and household size on household extreme poverty [38], [39].

The literature search was conducted exclusively in the Scopus database due to its comprehensive coverage of high-quality international publications. A Boolean search combined keywords related to education, employment status, household size, and extreme poverty:

("education" OR "educational attainment" OR "schooling" OR "human capital" OR "informal employment" OR "informal sector" OR "formal employment" OR "formal sector" OR "employment status" OR "labor market segmentation" OR "household size" OR "family size" OR "household composition" OR "dependency ratio") AND ("extreme poverty")

The search identified 740 publications. Articles were then screened using predefined inclusion and exclusion criteria. Eligible studies were peer-reviewed journal articles published between 2015 and 2025, written in English, focusing on household extreme poverty determinants related to education, employment status, and/or household size, and reporting empirical findings. Publications published before 2015, non-English articles, books, book chapters, conference papers, reviews, editorials, notes, short surveys, and studies unrelated to the research objectives were excluded.

The screening process excluded 718 records based on these criteria, leaving 22 articles for full-text assessment. Five articles were excluded because their full texts were unavailable, while four additional studies were removed because they did not adequately address the research questions. Consequently, 13 empirical studies met all eligibility criteria and were included in the final qualitative synthesis.

3. RESULTS AND DISCUSSION

3.1. The Effect of Household Head's Educational Attainment on the Probability of Household Extreme Poverty

Table 1 summarizes evidence from twelve empirical studies examining the relationship between the household head's educational attainment and household extreme

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poverty across diverse national contexts. Overall, the literature indicates a predominantly negative relationship: higher educational attainment is associated with a lower likelihood of extreme poverty. Nevertheless, the magnitude of this relationship varies across studies because of differences in poverty definitions, analytical methods, and country contexts. The table also includes studies reporting inconsistent findings to provide a balanced assessment of the available evidence.

Table 1. Synthesis of empirical evidence on the effect of the household head's educational attainment on household extreme poverty

No.	Source	Direction and Magnitude of Effect
1	Abaidoo [40]	Significant inverse relationship. Each additional education level reduces poverty by 2.7–3.0% (GLSS6/7/pooled); tertiary shows far lower poverty probability than basic education (22.5% vs 12.3%, OLS), consistent across OLS/probit/logit.
2	Kannan [41]	Sharp inverse gradient. Poverty probability falls from ~25% (low education) to ~17% (secondary) to ~7% (graduate+).
3	Aminah et al. [42]	Steep inverse relationship. No formal education: 50.6% extremely poor; high school: 38.9%; college graduates: 28.5%.
4	Munguía and Martínez-Zarzoso [43]	Inverse, with gender nuance. Higher education ($\geq$ university) household heads are associated with higher income; an inverted-U effect is observed for medium-educated female household heads.
5	Dang et al. [44]	Inverse, measured via upward mobility. Tertiary-educated heads: ~35–40% exit extreme poverty; uneducated heads: <20%.
6	Castañeda et al. [11]	Robust inverse relationship, cross-country (World Bank data), holds after controlling for other characteristics.
7	Moges et al. [45]	Mixed/reversed for the extreme-poverty category. Education reduces "vulnerable" (–2.7%) and "poor" (–1.0%) status, but increases the likelihood of "extremely poor" status (+4.4%, $p < 0.1$).
8	Olaoye [46]	Inverse (policy-level). Education investment is a significant determinant of lower poverty in Sub-Saharan Africa.
9	Zhao et al. [47]	Inverse (contributing factor) Per-capita education expenditure is identified as a major poverty-alleviating indicator.
10	Nguyen et al. [48]	Not statistically significant. The household head's education level shows no significant association with the probability of multidimensional poverty (coef. = –0.068, sig. = 0.280).
11	Herrero-Olarte and Loaiza [49]	Inverse. A 10-percentage-point increase in the middle-education population reduces extreme poverty by 4.8–5.6 percentage points.
12	Amara and Jemmali [50]	Strong, significant inverse relationship (multilevel logit, Tunisia).

The evidence consistently indicates that education reduces the likelihood of household extreme poverty. Studies conducted in Ghana, India, Mexico, Tunisia, Vietnam, and cross-country datasets generally report that higher educational attainment improves household welfare, increases income opportunities, and enhances the probability of escaping poverty [40], [41], [11], [44], [50]. Similar conclusions are reported at the policy level, where investment in education is associated with lower poverty incidence and improved poverty reduction outcomes [46], [47]. Collectively, these findings support the proposition that education is one of the most consistent determinants of lower household extreme poverty.

However, the evidence is not entirely uniform. Nguyen et al. [48] found no statistically significant relationship between the household head's education and

multidimensional poverty in Vietnam. In contrast, Moges et al. [45] reported that higher education unexpectedly increased the probability of belonging to the extreme-poverty category, despite reducing vulnerability and general poverty. These contrasting findings suggest that the effectiveness of education may depend on country-specific socioeconomic conditions, labor market characteristics, and the poverty measurement approach adopted.

Overall, eleven of the twelve studies support an inverse relationship between educational attainment and household extreme poverty, whereas one study reports no significant association and another identifies a reversed relationship for the extreme-poverty category. This pattern provides strong qualitative evidence that education reduces the likelihood of household extreme poverty, although the magnitude of its effect cannot be generalized due to differences in research context, poverty definitions, and estimation methods.

3.2. The Effect of Household Head's Employment Status (Formal versus Informal) on Extreme Poverty

Table 2 summarizes eight empirical studies investigating the relationship between the household head's employment status and household extreme poverty across several countries. Overall, the evidence suggests that informal, unstable, or agriculture-based employment is associated with a higher likelihood of extreme poverty. However, only a limited number of studies explicitly examine the formal–informal employment distinction, while most rely on related proxies, such as employment status or sector of employment, which are conceptually different. Accordingly, the available evidence should be interpreted with caution.

Table 2. Synthesis of empirical evidence on the effect of the household head's employment status on household extreme poverty

No.	Source	Direction and Magnitude of Effect
1	Docquier et al. [51]	Informality is actually short-run protective against extreme poverty (poverty-trap hypothesis), the opposite direction from the common assumption that informality always worsens poverty.
2	Abaidoo [40]	The coefficient sign is inconsistent across models and survey waves (GLSS6 vs GLSS7); employment status sometimes lowers and sometimes raises the poverty probability.
3	Kannan [41]	A clear inverse relationship exists with employment status. Casual workers face the highest poverty probability (31%), self-employed 21%, and regular workers ~9%.
4	Aminah et al. [42]	Significant inverse relationship. Service-sector jobs reduce the risk of extreme poverty relative to agriculture/fishing (odds ratio = 0.648, $p < 0.001$). Unemployment status is not statistically significant.
5	Munguía and Martínez-Zarzoso [43]	Indirect inverse relationship (via social-security access mechanism). Formal employment is associated with access to social security and higher wages, but is not directly tested against extreme poverty status.
6	Dang et al. [44]	Inverse relationship, measured via poverty-exit mobility. Non-agricultural work is associated with a higher chance of exiting both extreme and moderate poverty.
7	Castañeda et al. [11]	Sharp inverse relationship across countries (World Bank data). The extreme poverty rate among agricultural workers (19.8%) is four times higher than among non-agricultural workers (4.6%).
8	Herrero-Olarte and Loaiza [49]	Inverse relationship at the aggregate level. A 10-percentage-point increase in the informal-sector working population is associated with a 2.6–3.0 percentage-point increase in extreme poverty.

Most studies indicate that employment quality is more important than employment status alone in explaining household extreme poverty. Households headed by regular or service-sector workers generally exhibit a lower probability of extreme poverty than those dependent on casual, agricultural, or informal employment [41], [42], [11]. Similar findings are reported by Dang et al. [44], who showed that non-agricultural employment increases the likelihood of escaping poverty, while Herrero-Olarte and Loaiza [49] found that a higher share of informal-sector employment is associated with higher extreme poverty. Although Munguía and Martínez-Zarzoso [43] did not directly estimate the effect of employment formality on poverty, their findings suggest that formal employment reduces poverty risk through higher wages and greater access to social protection.

Nevertheless, the evidence is less consistent than that observed for educational attainment. Docquier et al. [51] argued that informal employment may temporarily protect low-skilled workers from extreme poverty by providing immediate income opportunities, though it may constrain long-term income convergence. Similarly, Abaidoo [40] reported inconsistent effects of employment status across survey waves, suggesting that the relationship may vary with macroeconomic conditions and model specification.

Overall, the reviewed studies suggest that informal, unstable, and agriculture-based employment tends to increase the risk of household extreme poverty. However, the supporting evidence remains conceptually heterogeneous because only a few studies directly compare formal and informal employment, whereas most rely on proxy indicators. Consequently, the relationship between employment status and household extreme poverty should be interpreted as a general tendency rather than a universally established causal pattern.

3.3. The Effect of Household Size on the Probability of a Household Experiencing Extreme Poverty

Table 3 presents a synthesis of nine empirical studies examining the effect of household size on the probability of extreme poverty, covering the contexts of Ghana, Vietnam, Tunisia, Mexico, and cross-country World Bank data. Unlike the education and employment-status variables, which show a number of findings pointing in different directions, all sources here consistently show a positive relationship: the larger the household size, the higher the probability of extreme poverty faced, although the magnitude of the effect varies sharply across studies, and some sources use the dependency ratio as a proxy that is not fully conceptually identical to raw household size. This table also flags sources that are methodological in nature or that use indirect proxies, so that the consistency in the direction of the relationship is not misinterpreted as uniformity in the magnitude of the effect.

<https://doi.org/10.58421/misro.v5i3.1829>

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Table 3. Synthesis of empirical evidence on the effect of household size on household extreme poverty

No.	Source	Direction and Magnitude of Effect
1	Abaidoo [40]	Positive relationship, direct measure. Each additional household member raises poverty probability by 0.1% (GLSS7), 0.31% (GLSS6), or 0.241% (pooled) in one specification; a separate estimate in the same paper reports 1.3–2.4%.
2	Aminah et al. [42]	Positive relationship, descriptive. Extremely poor households average 5.83 members vs. 4.31 for non-extremely-poor households. Dependency ratio also shows a significant positive effect (OR = 1.256).
3	Munguía and Martínez-Zarzoso [43]	Positive relationship, framed via the income-to-poverty ratio. One-person households show the highest income-to-poverty ratio; more dependents per family are associated with lower income.
4	Dang et al. [44]	Indirect proxy. Uses child dependency ratio, not raw household size; a lower dependency ratio is associated with better upward mobility out of poverty.
5	Castañeda et al. [11]	Positive relationship, direct and strong. Households with 1–2 children are 9 percentage points more likely to be poor than childless households; households with more than 2 children are 28 percentage points more likely.
6	Moges et al. [45]	Uses dependency ratio, not household size directly. Each unit increase in dependency ratio raises the likelihood of being extremely poor by 48.4% ($p < 0.01$), the largest magnitude in this set.
7	Zhao et al. [47]	Vague and indirect. Identifies "social gross dependency ratio" as a contributor to poverty without reporting a specific coefficient, direction, magnitude, or significance level.
8	Nguyen et al. [48]	Positive relationship, direct and of a very large magnitude. Each additional household member multiplies the odds of multidimensional poverty by 3.37.
9	Amara and Jemmali [50]	Positive relationship, direct, multilevel logit (Tunisia). Each additional household member increases the odds of being extremely poor by 48%.

Table 3 summarizes evidence from nine studies on the relationship between household size and extreme poverty across Ghana, Vietnam, Tunisia, Mexico, and cross-country datasets. Unlike education and employment status, all reviewed studies consistently report a positive association, indicating that larger households face a greater risk of extreme poverty. However, the magnitude of this relationship varies considerably across studies, and several use the dependency ratio as a proxy rather than household size itself.

The reviewed evidence consistently indicates that household size is an important determinant of extreme poverty. Abaidoo [40] found that each additional household member increased the probability of poverty, while Aminah et al. [42] reported that extremely poor households had a larger average household size than non-poor households. Similar findings were observed in Mexico, where Munguía and Martínez-Zarzoso [43] showed that households with more dependents had lower income-to-poverty ratios.

Cross-country evidence further supports this relationship. Castañeda et al. [11] found that households with children were substantially more likely to experience poverty than childless households. Nguyen et al. [48] reported that each additional household member increased the odds of multidimensional poverty by more than threefold, whereas Amara and Jemmali [50] estimated a 48% increase in the odds of extreme poverty for each additional household member. Although both studies identify the same direction of effect, the considerable difference in magnitude highlights the influence of country context and poverty measurement.

Several studies assessed the dependency ratio rather than household size directly. Moges et al. [45] found that higher dependency ratios substantially increased the likelihood of extreme poverty, while Dang et al. [44] showed that lower child dependency ratios were associated with greater upward mobility out of poverty. Zhao et al. [47] also identified dependency ratio as a contributor to poverty but did not report effect estimates. These findings should be interpreted cautiously, as the dependency ratio and household size are related but conceptually distinct constructs.

Overall, the evidence demonstrates a strong, consistent positive relationship between household size and extreme poverty across countries and methodological approaches. Nevertheless, substantial variation in effect size and differences in variable measurement indicate that quantitative comparisons across studies should be interpreted with caution.

3.4. Discussion

The synthesis of the reviewed literature provides a more comprehensive understanding of the effects of education, employment status, and household size on household extreme poverty while addressing the research gaps identified in this review. However, the strength of evidence differs across determinants, indicating that not all determinants are supported by the same level of empirical consistency.

Educational attainment demonstrates the strongest evidence of a poverty-reducing effect. Eleven of the twelve reviewed studies report that higher educational attainment is associated with a lower probability of household extreme poverty, although two studies present different findings. Nguyen et al. [48] reported no significant relationship, whereas Moges et al. [45] found that education increased the likelihood of extreme poverty while reducing the likelihood of broader poverty categories. These exceptions indicate that although education consistently reduces poverty risk in most contexts, its effect is not universal and may depend on labor market conditions and poverty measurement methods.

The evidence regarding employment status is comparatively less conclusive. Although most studies indicate that unstable, agricultural, or informal employment is associated with higher poverty risk, only a limited number explicitly examine the formal–informal employment distinction. Most rely on related but conceptually different indicators, such as employment status or employment sector. Consequently, the relationship between employment status and extreme poverty should be interpreted more cautiously than the relationships involving education and household size.

Household size exhibits the most consistent directional relationship among the three determinants. All reviewed studies conclude that larger households are more likely to experience extreme poverty. Nevertheless, the reported magnitude differs substantially across studies, ranging from relatively small marginal effects to considerably larger odds ratios. This variation suggests that differences in poverty definitions, measurement approaches, and country contexts substantially influence the estimated effect size.

The findings broadly support the theoretical frameworks adopted in this review. The inverse relationship between education and extreme poverty is consistent with human capital theory, which argues that education improves productivity, employability, and

income opportunities. Likewise, the positive relationship between household size and poverty supports household economic theory, which emphasizes the pressure a larger household imposes on limited household resources.

However, the findings also reveal important theoretical nuances. Evidence indicating that informal employment may temporarily protect households from extreme poverty suggests that the relationship between labor informality and poverty is more complex than conventional labor-market dualism theory predicts. Rather than representing a uniformly disadvantageous condition, informal employment may function as a short-term coping mechanism while simultaneously limiting long-term income mobility. This suggests that the effect of employment informality depends on both labor market characteristics and the time horizon considered.

The primary contribution of this review is to identify differences in the quality of evidence supporting each determinant. In particular, the employment-status literature frequently combines conceptually distinct proxies under a single interpretation, whereas household-size studies report substantial variation in effect magnitudes despite consistent directional findings. These observations indicate that inconsistencies across previous studies are influenced not only by contextual differences but also by variations in research design and poverty measurement.

From a policy perspective, the findings suggest that interventions promoting educational attainment and addressing household dependency have stronger empirical support than policies that emphasize labor formalization alone. Although improving access to formal employment remains important, labor-market interventions should recognize the heterogeneous nature of informal employment and distinguish between voluntary and involuntary informality when designing poverty-reduction strategies.

This review has several limitations. The evidence base remains relatively limited, the literature search relied exclusively on the Scopus database, and only English-language publications were included, potentially excluding relevant evidence from other sources. Furthermore, this study employs a qualitative systematic literature review rather than a quantitative meta-analysis, preventing statistical comparison of effect sizes across studies.

Future research should integrate education, employment status, and household size within a single empirical framework using consistent definitions of extreme poverty. Meta-analytic approaches are also needed to determine whether the observed variation in effect sizes reflects genuine contextual differences or methodological inconsistencies. In addition, longitudinal studies would provide stronger evidence regarding the dynamic relationship between labor informality and household extreme poverty over time.

4. CONCLUSION

This systematic literature review synthesizes empirical evidence on the effects of education, employment status, and household size on household extreme poverty. The findings indicate that education and household size demonstrate the most consistent relationships with extreme poverty. Higher educational attainment is generally associated with a lower probability of extreme poverty, whereas larger household size consistently increases the risk of poverty. In contrast, evidence on employment status remains less

conclusive because previous studies have employed different conceptualizations and measurement approaches.

This review highlights differences in the strength of evidence across the three determinants and identifies inconsistencies in the measurement of employment status and poverty. The findings suggest that policies focused on educational improvement and household demographic conditions currently have stronger empirical support than those that rely solely on employment status.

The review is limited by its reliance on Scopus-indexed English-language publications and a qualitative synthesis approach. Future research should incorporate multiple databases, apply quantitative meta-analysis, and examine all three determinants simultaneously using consistent measures of extreme poverty.

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