MEDHA Vol. VIII(II), 2026, ISSN: 2382-5146

Poverty Dynamics of Nepal: A Comparative Analysis of Multidimensional Poverty Reports (2018-2025)

Santosh Kumar BaidhyaTamang, Researcher
ORCID: https://orcid.org/0000-0002-4087-0137
Email: hyonjansan@gmail.com

Abstract

This paper aims to analyze the poverty dynamics of Nepal by comparing data from two different multidimensional country poverty reports (2018 and 2021) and the global Multidimensional Poverty Index (MPI) country briefing report 2025 Nepal. By assessing the changes in poverty measures under three dimensions—education, health, and standard of living—over these periods, we have gained insights into the progress and challenges faced by Nepal in addressing poverty. Similarly, the 2021 report also started to address the age group, children, and persons with disabilities' poverty level, which is noteworthy for the policymakers and planners. Overall, MPI decreased dramatically between the 2018 and 2021 reporting periods, from 0.133 to 0.074, but it grew marginally (0.085) in the 2025 reporting period compared to the 2021 period. This indicates that the multidimensionally poor population under the 2021 reporting period is, on average, less deprived than the multidimensionally poor population under the 2018 reporting period; however, the average level of deprivation in 2025 is somewhat higher than that of the 2021 reporting period.

Keynote: Multidimensional poverty, incidence, intensity, economic well-being, capability

Article's information : Manuscript received : 2026/01/10, Date of review : 2026/02/28, Date of manuscript acceptance 2026/03/20 Publisher : Mahandra Moranga Adrsh Multiple Campus, Biratnagar
DOI : https://doi.org/10.3126/medha.v8i2.92600
Homepage : https://www.nepjol.info/index.php/medha Copy right (c) 2025 @ Medha Journal. This work is licensed under the Creative Commons CC BY-NC License. https://creativecommons.org/licenses/by-nc/4.0/

Introduction

Poverty is a global issue. It exists everywhere in the world. It is not a static condition and always moves in and out within the household or individuals over time. The term "poverty" is derived from the Old French word "pov'rte" and entered commonly into the English language in 1175 A.D. (Carney, 1992, p. 74). It was defined as the state of being poor (Hornby, 2015). The World Bank defines it as a condition of deprivation or lack of resources to meet basic needs narrowly at first. And broadly, it is said to be deprivation in well-being. Well-being emphasizes the capability (might not have enough money or education, or be ill, or feel helpless, or lack political liberties) of the individual to perform in society (Haughton & Khandker, 2009). According to Amartya Sen, it is a basic "capability failure" in achieving

"certain crucially important functioning up to a certain minimally adequate level" (Sen, 1993). Likewise, the OECD defines poverty as including various aspects of deprivation related to human abilities, such as food security and consumption, health, education, rights, voice, security, dignity, and decent work (Hussain et al., 2020, p. 4).

Currently, the poverty issue is a hotcake for policymakers, development practitioners, scholars, and students around the world. Societies and development practitioners have tried to understand and define this term in different aspects and over time. Economists have defined it in terms of adequate income to acquire a basic level of consumption or welfare, whereas other social scientists have defined it as the lack of individual capabilities for education and health to attain the basic level of human well-being. However, sociologists and anthropologists have defined it as the social, behavioral, and political underpinning of human well-being (Wagle, 2002). Therefore, the definition of poverty can be compared to "beauty" terms, which are subject to interpretation based on the interpreters' perspectives (Pattanaik, 2025, p. 300).

Nowadays, poverty is defined and measured from the three dimensions (economic well-being, capability, and social exclusion). So, poverty cannot be defined from a single aspect of dimension because it depends upon the context, situation, perception, geography, time, access and availability of services, safety and security, the status of natural calamities, institutions, governance, and its deliveries of services, etc. Therefore, there are likely differences in the perception while defining it. According to the World Bank, those who live on under US $2.15 per person per day as per purchasing power parity (PPP) are called extreme poverty. Global poverty had declined from 38 percent in 1990 to 8.4 percent by 2019 (World Bank, 2022, p. 2). However, international development actors, bilateral agencies, and countries have a unified goal of 'ending' extreme poverty by 2030 (UN, 2014), which is defined as reducing global extreme poverty to 3% of the world's population (World Bank, 2014).

Despite the world scenario, Nepal has been trying to reduce the population living below the poverty line through its short-, medium-, and long-term plans. The fifteenth five-year plan also internalizes and contributes to the Sustainable Development Goals through its long-term 25-year vision, "Prosperous Nepal and Happy Nepali," focusing on the target and indicators and reducing the poverty ratio up to 18.7% from 21.6% as the base of FY 2016/17 and increasing the human development by 0.579 by the FY 2018/19 so far. However, the plan couldn't reduce the poverty ratio up to 17% as targeted by FY 2017/18 due to the COVID-19 pandemic (NPC, 2020). However, the 16th plan (2024/25-2028/29) has set its goals to promote "good governance, social justice, and prosperity," outlining sectoral targets and collective strategies to achieve these goals (NPC, 2024) as a base of the 15th five-year long-term plan target.

So, this paper mainly focuses on the changes in poverty incidence in Nepal and its consequences over the time of the multidimensional poverty report 2018-2025. It also contributes to understanding the changes, variations, and targeting of people living under the multidimensionally poor by geography, location, gender, ethnicity, etc., for policymakers, development activists, and planners. So, this paper focuses on understanding the changes in income, employment, education, health, social networks, and access to services and resources from the multidimensional poverty report 2018, 2021, and 2025. It also helps to identify the variance between two periodic reports and highlight the 2025 report with recommendations for the way forward. It helps to decide the comprehensive assessment process for further actions in the specific area, location, geographical settlement, community, and the people.

Theoretical review

Looking back into the history of poverty measurement, it existed for centuries with various debates. There are two methods of measuring poverty: one is direct, and the other is indirect. The direct approach focuses on the people satisfied with a set of basic needs and rights, which is in line with Sen's capability functioning approach, and the indirect or income approach determines whether the people's income falls below the poverty line (Alkire & Santos, 2014). The first internationally recognized poverty measurement date is 1990, when the World Bank introduced the US 'dollar-a-day' poverty line under the indirect (income) measuring method. Later, this standard poverty line was taken as a baseline to measure the national poverty status of various of the poorest countries in the world. This global line has been updated over time based on the new round of PPP from US$1.00 (1985 PPP) to US$1.08 (1993 PPP) to US$1.25 (2005 PPP) to US$1.90 (2011 PPP) (World Bank, 2022) and US$2.15 (2017 PPP) (World Bank, 2023).

This first measurement system is known as the headcount or poverty ratio, which measures the proportion of the population living in a household with income per person below the officially defined poverty line. It is popular because it is easy to understand and measure the poor people but doesn't reveal how poor the poor are. And it doesn't take the intensity of poverty into account and violates the transfer principle, an idea first formulated by Dalton in 1920, which states that shifts from a richer to a poorer person should upgrade the measure of welfare (World Bank, 2005). The headcount index is expressed as.

$Po = \frac{Np}{N}$ Where Po is the headcount index, Np is the number of poor, and N = total population (or sample). If 70 people are poor in a survey that samples 400 people, then Po = 70/400 = 0.175, which means 17.50%.

The second tool of poverty measurement is known as the Poverty Gap Index (GPI), which is an improvement over the poverty measure headcount ratio. It is also referred to as the poverty gap ratio and counts all the people below the poverty line in a given population and

considers them equally poor. It defines the average poverty gap in the population as a proportion of the poverty line (where the non-poor have zero gaps). The difference between a person's income and the per capita poverty line is called the poverty gap. It can be counted from the following formula.

$PGI = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z-Yi}{Z}\right) = \frac{1}{N*Z}\sum_{i=1}^{q}(Z-Yi)$ Here, Z = poverty line, Yi = income level of each household/person, q = number of poor (households/individuals whose income falls below the defined poverty line), and N = total number of households (total individuals).

The squared poverty gap index is another tool to measure the severity of poverty for households/individuals/areas or regions. It is also the improved version of the PGI. It gives more weight to the very poor than those that are closer to the poverty line and magnifies the state of the poorest of the poor. The formula of the SPGI is as follows.

$SPGI = \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z-Yi}{Z}\right)^2 = \frac{1}{N*Z^2}\sum_{i-1}^{q}(Z-Yi)^2$ Here Z = poverty line, Yi = income level of each household/person, q = number of poor (households/individuals whose income falls below the defined poverty line), and n = the total number of individuals/households.

Foster-Greer-Thorbecke's (FGT) group index is another of the best poverty measurement tools. It was introduced in 1984 by the economists James Foster, Joel Greer, and Erik Thorbecke. It has three versions of the formula to measure the poor, which are as follows:

FGT = $\frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z-Yi}{Z}\right)^a \dots\dots(i)$ Here, Z is the poverty line, Yi is the income of the i th poor person, q is the number of poor people/individuals (those below a poverty line Z), and N is the total population (sample size).

When a=0, the index equals PG in FGTa=1, which $= \frac{1}{Nz}\sum_{i=1}^{q}(Z-Yi) \dots\dots.(ii)$ Nz, the total population times the poverty line. And when a=2, the poverty index equals the poverty severity index. The formula is.

Squared Poverty Gap FGTa=2 $= \frac{1}{N}\sum_{i=1}^{q}\left(\frac{Z-Yi}{Z}\right)^2 = \frac{1}{Nz^2}\sum_{i=1}^{q}(Z-Yi)^2 \dots\dots (iii)$

It has become a usual income poverty measure followed by the World Bank and other countries and agencies. It is used in empirical work on income poverty because of its sensitivity to the depth and severity of poverty (Todaro & Smith, 2020, p. 232). Based on the capability framework of Amartya Sen, later Sabina Alkire and James Foster extended the Foster-Greer-Thorbecke (FGT) index to multiple dimensions, which is called the multi-dimensional poverty index (MPI) tool.

The UNDP has adopted this MPI tool worldwide since 2010 to measure poverty, which was developed in collaboration with the Oxford Poverty and Human Development Initiative (OPHI). It tries to assess the magnitude of deviance in the developing world first. And then targeting that, it must manage data constraints in seconds. Thirdly, it has an underlying concept of absolute poverty. It is an improved version of the human development index and uses three dimensions and ten indicators of poverty, namely health, education, and standard of living, with equal weights. MPI follows both a direct (measures a set of basic needs and rights) and indirect (measured by US "dollar a day") method (Alkire & Santos, 2014). Under this measurement method, three dimensions are equally weighted, i.e., $\frac{1}{3}$ and the indicators within each dimension are also equally weighted after setting the cutoff point for each indicator, i.e., one-third (33.33% out of 100). The two indicators from each of health (nutrition and child mortality) and education (years of schooling and school attendance) are weighted $\frac{1}{6}$ and six indicators of living standards (cooking fuel, sanitation, drinking water, electricity, housing, and assets) are weighted by $\frac{1}{18}$ (CBS & OPHI, 2021). There are two equations under these methods, which are as follows.

The Head Count Ratio (incidence of poverty) is H = $\frac{q}{n}$ where q is the number of poor people in the household, and n is the total number of people in the household. Similarly, the intensity of poverty (for poor households) is A=$\frac{\sum hCj*hi}{q}$ or A=$\frac{\sum_{i=1}^{n} Ci(k)}{q}$ where $_{Cj}$ is the deprivation score of the household, *i* is the number of people in the household, and *h* is the number of households.

So MPI combines two aspects of poverty:

$$MPI = H * A$$

1. Incidence: the % of people who are multidimensionally poor or the headcount, H
2. Intensity of people's poverty: the average % of dimensions in which poor people are deprived, A (NPC & OPHI, 2018).

Study design and methodology

This study is based on secondary data and information from the multidimensional poverty reports of 2018 and 2021 and also includes the country status report of 2025. The results of both multi-dimensional poverty reports from 2018 and 2021 are being used and compared along with 2025. The data are compared through simple statistical analysis graphs and tables and elaborate on the changes between these reporting periods by geographical, provincial, and, as much as possible, contextual factors.

Comparative analysis and result

The level of Multidimensional poverty in Nepal

The first MPI report, in 2018, used data from the Nepal Multiple Indicator Cluster Survey (NMICS) up to 2014. The MPI 2021 report took the same methodological data up to 2019, and the MPI 2025 report used data from the Nepal Demographic Health Survey (NDHS) 2022. The global MPI 2025 report doesn't provide as much disaggregated data for Nepal.

Table 1

Year-wise multidimensional poverty of Nepal

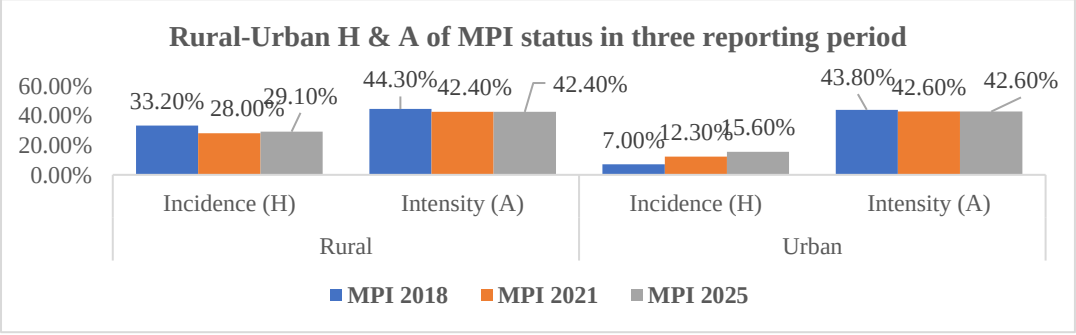
Year	2018	2021	2025
MPI	0.133	0.074	0.085
Headcount Ratio % (H)	28.62	17.40	20.07
Intensity % (A)	44.23	42.50	42.46

Source: MPI reports 2018, 2021, and https://ophi.org.uk/global-mpi/2025

According to the data, MPI decreased from 0.133 in 2018 to 0.074 in 2021 and 0.085 in 2025, indicating that multidimensionally poor people experienced 13.3%, 7.4%, and 8.5% of the total deprivations that would be experienced if all people were deprived in all indicators. However, the comparison sheet of 2021 reports showed that the national level of MPI, incidence, and intensity of poverty data of 2018 was shown as different (NPC, 2021, p. 26). It means the country had made significant progress in reducing poverty at the global level until 2021 but slightly increased in the 2025 reporting period. However, 11.2% (headcount ratio) of multidimensionally poor Nepalese fell up to the reporting date from 2018 to 2021 (i.e., 28.6% in 2018 and 17.4% in 2021), which means improving the status in the reduction of poverty, but it again rose to 2.7% (i.e., 17.4% in 2021 and 20.07% in 2025), which means an increase in the percentage of poor people according to the World Bank's US $3.00-a-day and US $4.20-a-day poverty line. As a result, it is necessary to identify the reason why each person in the household's income has reduced and encountered recent obstacles, with more people becoming multidimensionally poor by 2025, necessitating focused interventions in critical areas of deprivation.

Figure 1

Geographically multidimensional poor status.



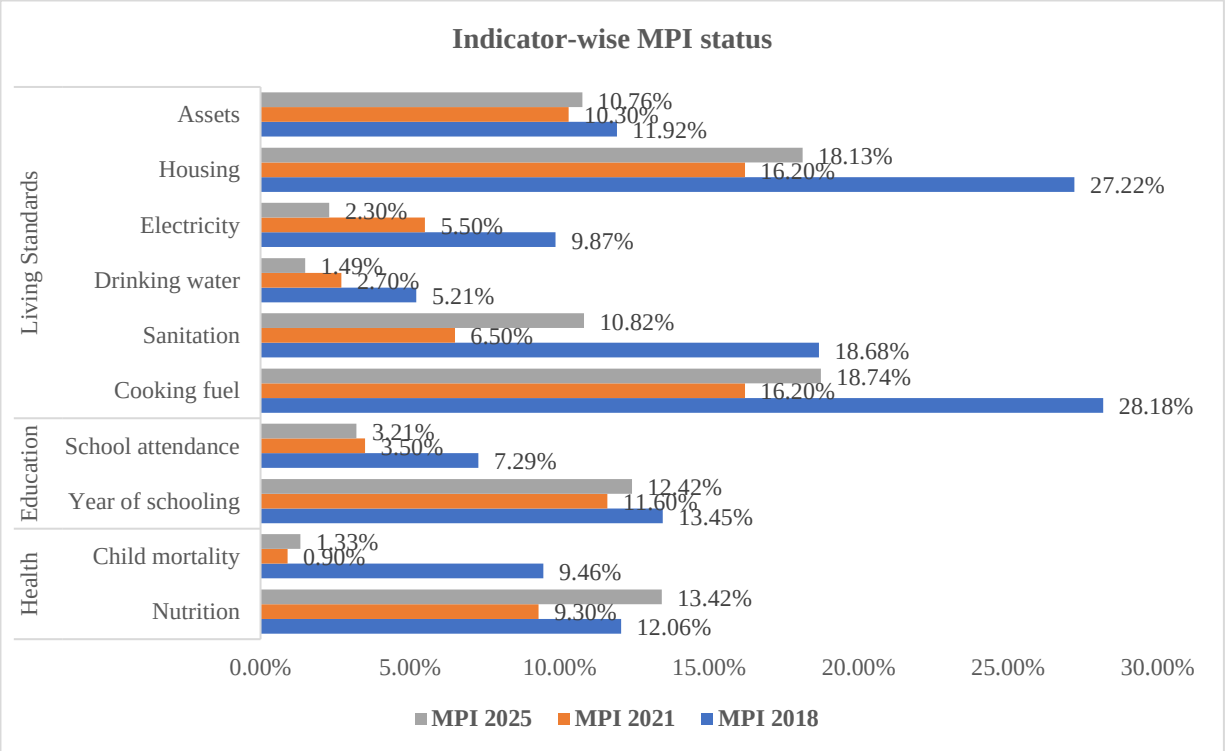
Source: MPI reports 2018, 2021, and 2025.

When analyzing the discrepancy in MPI by geographical settlement, nearly half of the poor (headcount ratio H) lived in rural regions until the 2025 reporting period compared to urban (i.e., 15.60% of the poor lived in urban areas in 2025, and 29.10% lived in rural areas during the same reporting period, which was almost double the poor living in rural areas. Likewise, there were more than 4 times the number of poor living conditions in rural areas than in urban areas during the 2018 reporting period compared to the same reporting period. However, the increased percentage of urban poor persons in 2021 compared to the 2018 reporting period is due to an improved definition of rural and urban zones in 2021; nevertheless, the increase in the percentage of poor people in 2025 compared to the 2021 reporting period is not mentioned clearly in the report. But the intensity of poverty (A), measured by the average percentage of deprivation across health, education, and living standards dimensions, was almost similar in both rural and urban areas during all three reporting periods.

Censored headcount ratios among three MPI reporting periods.

Figure 2

Censored headcount ratios proportion status.



Source: MPI reports 2018, 2021, and https://ophi.org.uk/global-mpi/2025.

The censored headcount ratio represents the proportion of people who are both MPI poor and deprived in each of the indicators. The status lowers the proportion of the headcount

ratio of each indicator, indicating that low poverty means good well-being or better performance regarding the multidimensional poverty status.

When comparing the status of three reporting periods across all indicators, the majority of the multidimensionally poor people are deprived of cooking fuel (28.18%) and housing (27.22%), implying that more people in the 2018 reporting period lack adequate cooking fuel and housing facilities than in other weighted indicators. However, persons who are deprived of cooking fuel and housing are at the top of the list during the 2021 and 2025 reporting periods, while those who are deprived of nutrition are at the second top during the 2025 reporting period, besides housing and cooking fuel. Three of the ten deprivation indicators are improving continuously. However, nutrition, child mortality, sanitation, years of schooling, cooking fuel, housing, and assets have worsened in 2025 compared to 2021. While comparing the condition of the multidimensionally poor across these three dimensions, those in the health and education dimensions are less deprived than those in the living standard dimension over the three reporting periods.

Table 2

MPI across province status in both reporting periods.

MPI across provinces during three reporting periods.

Provinces	Incidence 2018 (H)	Incidence 2021 (H)	Incidence 2025 (H)	Intensity 2018 (A)	Intensity 2021 (A)	Intensity 2025 (A)	MPI Value 2018	MPI Value 2021	MPI Value 2025
Koshi Prov.	19.7%	15.9%	17.0%	43.2%	41.4%	41.5%	8.5%	6.6%	7.0%
Madhesh Prov.	47.9%	24.2%	32.3%	45.3%	45.0%	46.1%	21.7%	10.9%	14.9%
Bagmati Prov.	12.2%	7.0%	7.7%	41.9%	40.3%	40.7%	5.1%	2.8%	3.1%
Gandaki Prov.	14.2%	9.6%	11.5%	42.9%	36.4%	39.9%	6.1%	3.5%	4.6%
Lumbini Prov.	29.9%	18.2%	19.7%	44.3%	43.1%	40.9%	13.3%	7.8%	8.0%
Karnali Prov.	51.2%	39.5%	34.0%	44.9%	42.9%	40.9%	23.0%	16.9%	13.9%
Sudurpaschim Prov.	33.6%	25.3%	25.2%	43.5%	41.3%	38.9%	14.6%	10.5%	9.8%

Source: MPI reports 2018, 2021, and 2025.

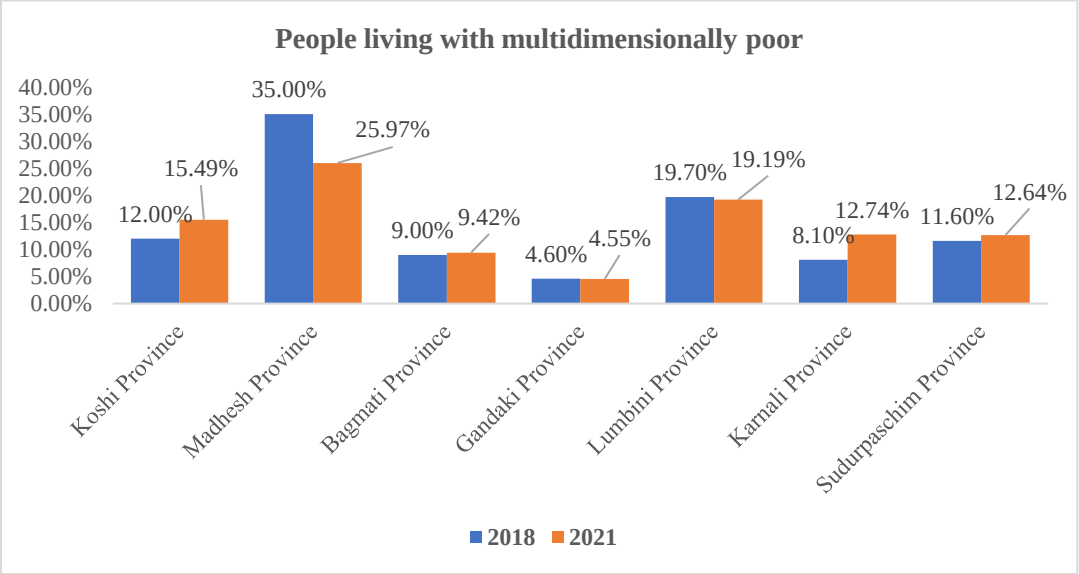
As shown in Table 2, Karnali Province has the highest incidence of multidimensional poverty (H) compared to other provinces in the three reporting periods. And it was followed by Sudurpaschim Province as the second-highest level of poverty incidence in the 2021

reporting period, whereas Madhesh Province was found to have the second-highest level of poverty incidence in both the 2018 and 2025 reporting periods.

Reported data indicate that Madhesh Province significantly reduced its incidence of multidimensional poverty compared to the 2018 reporting period. However, this trend reversed in the 2025 period, necessitating further analysis for reasons. Madhesh Province ranked third with an MPI value of 0.109 in 2021, but its top ranking in 2025 reflects a renewed increase in multidimensional poverty. Karnali Province, with an MPI of 0.139, demonstrated slight progress relative to previous reporting periods. The difference between Madhesh and Sudurpaschim Provinces remained minimal until 2021 but became pronounced and incomparable by 2025. In contrast, Koshi and Gandaki Provinces experienced a continuous rise in the incidence of multidimensional poverty through the 2025 reporting period, indicating a persistent increase in the proportion of multidimensionally poor people in these locations, necessitating further study.

Figure 3

Distribution of the MPI poor population by provinces during both reporting periods.



Source: MPI Reports 2018 and 2021.

The level of poverty is crucial for policymakers and development practitioners where population shares of the provinces vary. The reported data of Fig. 3 show that the largest number of populations are living under Madhesh Province compared to other provinces during both reporting periods. And followed by Lumbini Province in second position in both reporting periods. But the MPI poor population living status under Karnali and Sudurpaschim Provinces is in the third and fourth positions during the 2021 reporting period, which was ranked after Koshi Province during the 2018 reporting period. Although the lowest number of MPI-poor

people are living in Gandaki Province during both reporting periods. In an overall number, the MPI poor population is in a declining trend except for Koshi, Bagmati, Karnali, and Sudurpaschim Provinces in the 2021 reporting period compared to the 2018 reporting period.

However, Table 1 National Reports MPI 2025 (UNDP) reports only that 20.07% of the total MPI headcount ratio of poor people and 5.53% of the population in severe poverty are in Nepal. The headcount ratio (20.07%) represents 5,958,423 people in poverty out of a total population of 29,694,614. The MPI poverty incidence and intensity by age group, children, and the person with a disability are not comparable between these two reporting periods because only the 2021 MPI report has analyzed it.

Discussion and conclusion

Measuring poverty is a necessary part for the government, policymakers, development practitioners, and agencies to plan their activities focusing on geography, vulnerable communities, etc., and help to monitor the progress towards the plan and target. But the definition and measurement of poverty have changed over time. Initially, the World Bank measured it through economic growth, and later it focused on other social parameters like health, education, and political liberties (Haughton & Khandker, 2009). This first measurement tool is known as the headcount ratio. Then the Poverty Gap Index (PGI), the Squared Poverty Gap Index (SPGI), and the Multi-dimensional Poverty Index (MPI) all focus on the economic parameter commonly used to measure poverty. Specifically, the PGI focuses on the average poverty gap, while the SPGI emphasizes sensitivity to the depth and severity of poverty (Todaro & Smith, 2020, p. 232). In contrast, the MPI incorporates both direct (Sen capability framework approach) and indirect (Dalton headcount approach) measures, thereby offering a broader perspective on poverty measurement. and it was adopted by the World Bank in 2010 (Alkire & Santos, 2014).

Based on comparing these three reports, the overall Nepal MPI value has seen a significant decline from the 2018 to 2025 reporting period. It means Nepal has been progressing towards its long-term 25-year vision, "Prosperous Nepal, Happy Nepali," with 2030 Sustainable Development Goal (SDG) goals. It can also be said that the people under multidimensional poverty are less deprived on average in comparison to the 2018 reporting period. But if we compare the incidence of poverty between rural and urban areas, it is found that the poverty incidence (headcount ratio) in urban areas has increased, but the intensity of poverty is still in a declining trend.

So, we can just assume the reason for an increase in headcount poverty in urban areas during the 2021 reporting period is due to the huge negative impact of the COVID-19 pandemic on the employment opportunities and enterprises of the urban population. But further research can be done to identify the actual reason for the increase in the incidence of urban poverty in

the 2025 reporting period. Similarly, the number of poor populations was found to be on an increasing trend in four provinces, namely Koshi, Bagmati, Karnali, and Sudurpaschim Provinces, compared to the 2018 MPI report. However, there is just an overall MPI poor population report for 2025 instead of region-wise. Eventually, it would also be beneficial if the MPI report could separately discuss the occurrence and severity of poverty by gender, age, disability, and ethnicity.

References

Alkire, S., & Santos, M. E. (2014). Measuring acute poverty in the developing world: Robustness and scope of the multidimensional poverty index. *World Development, 59*, 251–274, . doi:10.1016/j.worlddev.2014.01.026

Carney, P. (1992). The concept of poverty. *Public Health Nursing, 9*(2), 74. doi:10.1111/j.1525-1446.1992.tb00079.x

CBS & OPHI. (2021). *Nepal multidimensional poverty index 2021 analysis towards action.* Government of Nepal, National Planning Commission.

Haughton, J., & Khandker, S. R. (2009). *Handbook on poverty and inequality.* The World Bank.

Hornby, A. S. (2015 Ninth Edition). *Oxford advanced learner' s dictionary*. Oxford University Press.

Hussain, T., Tahir, M., & Tahir, R. (2020). *Fundamentals of rural development*. I.K. International Pvt. Ltd.

National Planning Commission. (2020). *The Fifteenth Plan (Fiscal Year 2019/20–2023/24)*. Government of Nepal, National Planning Commission.

National Planning Commission. (2024). *The Sixteenth Plan (Fiscal Year 2034/25–2028/29)*. Government of Nepal, National Planning Commission.

NPC & OPHI. (2018). *Nepal multidimensional poverty index 2018 analysis towards action.* Government of Nepal, National Planning Commission.

Pattanaik, B. K. (2025). *Fundamental of rural development*. Routledge.

Sen, A. (1993). *Capability and well-being.* (M. Nussbaum & A. Sen, Eds.) Oxford Clarendon Press.

Todaro, M. P., & Smith, S. C. (2020). *Economic development thirteenth edition.* Pearson Education Limited.

UNDP (7 Jan 2026). https://hdr.undp.org/content/2025-global-multidimensional-poverty-index-mpi#/indicies/MPI

United Nations. (2014). *Open working group proposal for sustainable development goals*. United Nations.

Wagle, U. R. (2002). Rethinking poverty: Definition and measurement. *International Social Science Journal, 54*(171), 155. doi:10.1111/1468-2451.00366

World Bank Institute. (2005). *Introduction to poverty analysis.* nd.

World Bank. (2014). Prosperity for all/ending extreme poverty: *A Note for the World Bank Group Spring Meetings 2014*. World Bank.

World Bank. (2022, May 13). *Poverty and shared prosperity 2022*. World Bank. Retrieved from The World Bank: https://www.worldbank.org/en/topic/poverty/overview

World Bank. (2022). *Poverty and shared prosperity 2022: Correcting course*. The World Bank.

World Bank. (2023, May 26). *Understanding poverty overview*. Retrieved from https://www.worldbank.org/en/topic/poverty/overview