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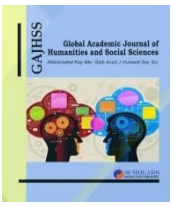

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Original Research Article

Prevalence and Assessment of Poverty in Narayanganj, Bangladesh: Determinants and Policy Implications for Sustainable Alleviation

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Abstract: ***Background*:** Poverty remains a serious challenge in Narayanganj, Bangladesh, with complex socioeconomic and institutional causes. A thorough understanding of poverty from multiple perspectives is crucial for developing effective solutions and enhancing social welfare programs. ***Objective*:** This study examines poverty in Narayanganj by analyzing both income levels and broader poverty indicators (MPI) to identify key factors that can guide policy decisions. ***Methods*:** The study was conducted from January to June 2025 with 205 carefully selected households. Researchers collected information about family characteristics, earnings, jobs, education, housing conditions, sanitation, healthcare availability, and participation in social welfare programs. Poverty was measured both by income levels and through a multidimensional poverty index. Data was analyzed using SPSS software version 29.0, including statistical methods to identify prevalence, patterns, determinants and relationships. ***Results*:** This analysis revealed a multifaceted poverty profile within the sample. While 26% households in monetary poverty (below $2.15/day), a larger segment (39.1%) were multidimensionally poor (MPI >0.333), experiencing concurrent deprivations. For this group, the intensity of deprivation was severe at 58%, meaning the poor are, on average, deprived in over half of the indicators. Nearly half of households (47.8 percent) earned less than 15,000 BDT per month, while about one-third (34.1 percent) earned more than 20,000 BDT. The study found that poverty involved multiple challenges, including education gaps (32.5%), healthcare access problems (23.7%), and poor living conditions (41.8%). Important contributing factors included limited education, joblessness, poor housing quality, and lack of access to social welfare programs. Rural families and female-led households faced particularly severe challenges. ***Conclusion*:** Poverty in Narayanganj results from interconnected problems in education, employment, and living conditions. Effective solutions should combine job creation, expanded social services, and better housing. These findings can help guide efforts to reduce poverty in line with national development goals.

Keywords: MPI, Poverty Factors, Poverty Measurement, Social Safety Net, Policy Implications.

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INTRODUCTION

Poverty remains one of the most pressing challenges in developing nations, with Bangladesh being no exception. Despite significant economic progress in recent years, poverty persists as a multidimensional phenomenon affecting millions, particularly in semi-urban and rural regions like Narayanganj [1]. According to the World Bank, while the poverty rate of Bangladesh declined from 24.3% in 2016 to 18.7% in 2022, regional disparities remain stark, with areas like Narayanganj experiencing slower progress due to uneven resource distribution and limited access to social safety nets [2]. This underscores the need for localized poverty assessments that go beyond income-based measurements to capture the complex interplay of socioeconomic, demographic, and institutional factors [3,4]. The concept of poverty has evolved from a purely income-centric view to a multidimensional framework encompassing education, health, housing, and social inclusion [5]. The Multidimensional Poverty Index (MPI), developed by the United Nations Development Program (UNDP), has become a critical tool for assessing these non-monetary deprivations [6]. In Bangladesh, MPI studies reveal that 24.6% of the population experiences multidimensional poverty, with higher concentrations in industrial zones like Narayanganj, where rapid urbanization has outpaced infrastructure development [7]. Such areas face unique challenges, including overcrowded slums, inadequate sanitation, and limited healthcare access—factors that perpetuate cyclical poverty despite rising incomes [8]. Narayanganj, a major industrial and port city near Dhaka, exemplifies these contradictions. While its garment factories and shipping industries contribute significantly to GDP, many workers remain trapped in low-wage jobs without social protections [9]. A 2023 study by the Bangladesh Institute of Development Studies (BIDS) found that 62% of Narayanganj's industrial workers earn below the living wage threshold, with women and migrant laborers being particularly vulnerable [10]. Compounding this, only 15% of poor households in the district are covered by social safety net programs, compared to the national average of 28% [11]. These gaps highlight the inadequacy of current poverty alleviation strategies and the urgent need for targeted interventions. Existing research on poverty in Bangladesh has primarily focused on rural areas or national-level trends, leaving a critical gap in understanding urban and semi-urban poverty dynamics [12, 13]. Few studies have examined how industrial growth correlates with poverty in districts like Narayanganj, where economic opportunities coexist with severe deprivation. This study addresses this gap by: (1) analyzing both income-based and MPI poverty in Narayanganj, (2) identifying key determinants through household-level data, and (3) proposing context-specific policy recommendations. The findings will contribute to the Sustainable Development Goal (SDG) 1 (No Poverty) agenda by providing empirical evidence for localized poverty reduction strategies. By integrating quantitative and qualitative insights, this study aims to inform policymakers, NGOs, and development agencies working to break the cycle of deprivation in Bangladesh's industrial heartlands.

METHODOLOGY

Study population: This prospective cross-sectional study was conducted in Narayanganj district, Bangladesh, from January to June 2025. The study population comprised 205 households selected from both urban and rural areas to ensure representative coverage of diverse socioeconomic conditions. Households were identified through local government records and community mapping, focusing on areas with high poverty prevalence as per preliminary surveys.

Dimensions, Indicators, Deprivation Cut-offs, and Weights of the National MPI for Bangladesh

Dimensions	Indicators	Deprivation Cut-off A household	National Weight
Living standards	Sanitation	Deprived if it has unimproved sanitation services (shared toilet without piped sewer system, a septic tank or improved latrine), including the lack of handwashing facilities, soap, and water.	1/18
	Drinking water	Deprived if it does not have sufficient access to improved drinking water within the dwelling (or at least in the yard/ plot). Improved sources refer to piped or public tap, tube well, or protected sources (well or spring).	1/18
	Housing	Deprived if it has any of these: a non-improved floor, roof, or walls.	1/18
	Cooking fuel	Deprived if it does not have clean fuel and technology for cooking.	1/18
	Assets	Deprived if it does not own more than two of the following assets: TV, mobile phone, cart, bicycle, motorcycle, major cattle (cow and goat), refrigerator, washing machine, and computer.	1/18

Education	School attendance	Deprived if there is at least one member of the household aged 6 to 17 years who is not attending school.	1/6
	Years of schooling	Deprived if no household member aged 16 years or above has completed five years of schooling.	1/6
Health	Nutrition	Deprived if any child (aged 0 to 4 years) of the household is stunted or underweight.	1/6
	Reproductive health	Deprived if demands for family planning by any currently married women (aged 15 to 49 years) are not met by modern contraceptive methods.	1/6

For the national MPI for Bangladesh, the poverty cut-off is set at 33.33%; that is, a person who is deprived of at least a third ($k \geq 33.33\%$) of the weighted sum of indicators is considered multidimensionally poor.

Inclusion Criteria:

Households were included if they met the following criteria: (1) permanent residents of Narayanganj for at least one year, (2) the monthly income below 30,000 BDT (to capture low-income groups), and (3) willingness to participate in the study. Households with at least one child under 18 or an elderly member (above 60) were prioritized to assess intergenerational poverty dynamics.

Exclusion Criteria:

Households were excluded if they (1) refused consent, (2) were transient or temporary residents, or (3) had incomplete or unreliable data (e.g., missing income or education records). Institutionalized populations (e.g., nursing homes, orphanages) were also excluded to maintain focus on family-based poverty.

Study Procedure:

Data were collected through face-to-face interviews using a structured questionnaire covering demographics, income, education, occupation, housing, sanitation, healthcare access, and social safety net participation. Field researchers underwent training to ensure standardized data collection. The Multidimensional Poverty Index (MPI) was calculated using health, education, and living standard indicators.

Data Analysis:

Data were analyzed using SPSS version 29.0. Descriptive statistics summarized socioeconomic characteristics, while logistic regression identified poverty determinants ($p<0.05$ significance level). MPI was decomposed to assess deprivation dimensions. Results were presented in tables and narrative formats for policy relevance.

RESULT

The study revealed significant insights into the poverty landscape of Narayanganj district through both income-based and multidimensional assessments. Out of this sample, the prevalence of poverty regarding household income is 26 percent (54 out of 205) that corresponds to less than $2.15 per day (2017 PPP), which is the international poverty line as defined by the World Bank; thus, they are living in extreme monetary poverty. The table 2 shows the number of respondents with Multidimensional Poverty Index (MPI) scores above and below a threshold MPI score of 0.333 (N = 205); 80 (39.1%) had an MPI score higher than 0.333, which indicates they are more likely to experience multiple deprivations in areas like education, health, and living standards. This bar chart shows how one specific deprivation significantly contributes to the severity of poverty. The actual intensity of poverty is 58%, meaning poor people are deprived in over half of the dimensions (like health, education, living standards) on average. Removing one key deprivation (e.g., lack of clean water) would lower the intensity score. The difference between the two bars proves that this specific issue is a major driver of severe, overlapping deprivations. Among the 205 surveyed households, nearly half (47.8%) reported monthly incomes below 15,000 BDT, falling below the poverty threshold of the district. Approximately one-third (34.1%) of households earned more than 20,000 BDT monthly, indicating economic stratification within the study population. Analysis of demographic characteristics showed that female-headed households constituted 38% of the sample and faced greater economic vulnerability, with 62% earning below the poverty line compared to 42% of male-headed households. Household size emerged as a critical factor, as families with more than five members were 2.3 times more likely to experience poverty than smaller households. The average household size among poor families was 5.8 members, compared to 4.2 in non-poor households. Multidimensional poverty assessment uncovered severe deprivations in key living standard indicators. About 41.8% of households lived in substandard housing (kutcha or semi-pucca structures), while 23.7% lacked access to proper sanitation facilities. Educational deprivation affected 32.5% of households, with either school-aged children not attending or adults having no formal education. Healthcare access remained limited, with 28.3% of respondents reporting an inability to afford medical treatment when needed. Occupational patterns

showed that 41.5% of primary earners worked in the garment sector, followed by day laborers (30.2%) and rickshaw pullers (18.5%). Despite employment, 58% of garment workers and 72% of day laborers earned wages insufficient to meet basic needs. Social safety net coverage was alarmingly low, with only 12.2% of households benefiting from such programs, leaving most vulnerable families without institutional support. Logistic regression analysis identified several significant poverty determinants. Low educational attainment increased poverty likelihood by 3.2 times, while unemployment raised the odds by 2.8 times. Substandard housing showed the strongest association, making households 4.1 times more likely to be poor. Geographic location also mattered, as rural households faced 1.9 times higher poverty risk than urban counterparts. These findings collectively paint a complex picture of poverty in Narayanganj, where economic, social, and structural factors intersect to perpetuate deprivation.

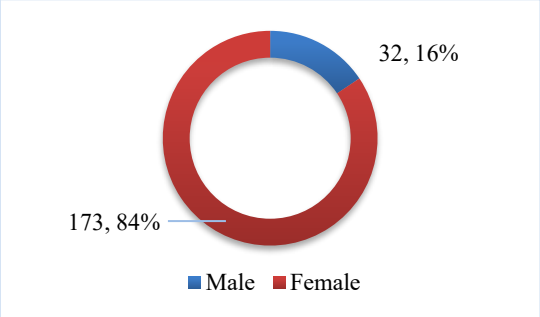

Figure 1: Gender distribution

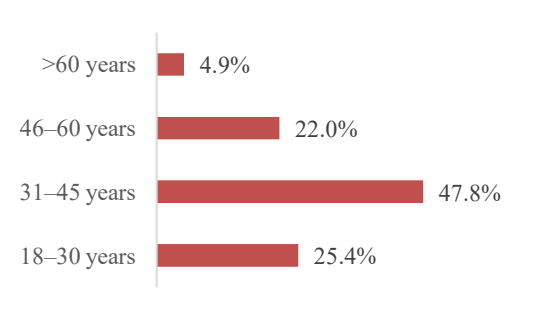

Figure 2: Age distribution

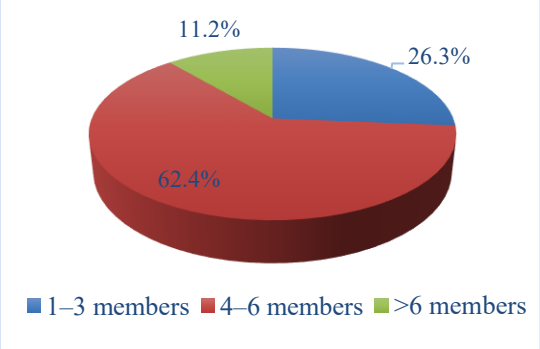

Figure 3: Household size distribution

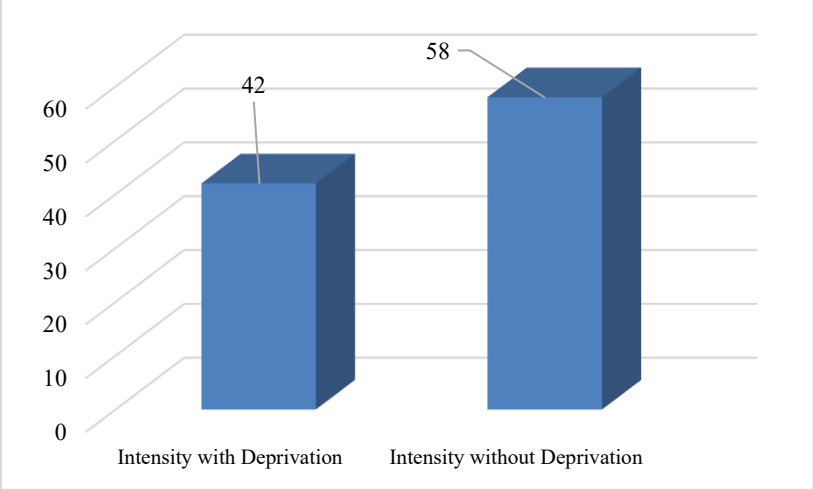

Figure 4: MPI Score with Intensity

Table 1: Socio-economic indicators

Monthly Income <2.15 USD (2017 PPP)	**(N)**	**(%)**
Poverty	54	26%
No Poverty	151	74%
Total	**205**	**100%**

Table 2: Frequency and Percentage of MPI Score above 0.333

MPI Score	**(N)**	**(%)**
Above 0.333	80	39.1%
0.333 or below	125	60.9%
Total	**205**	**100.0%**

Table 3: Socio-economic indicators

Category	**n**	**%**
Occupation		
Garment Worker	85	41.5%
Day Laborer	62	30.2%
Rickshaw Driver	38	18.5%
Agriculture/Other	20	9.8%
Monthly income (BDT)		
<7,500	15	7.3%
7,500–15,000	68	33.2%
15,000–20,000	52	25.4%
>20,000	70	34.1%
Education level		
No Formal Education	18	8.8%
Primary	42	20.5%
Secondary/Higher secondary	115	56.1%
Graduate	30	14.6%

Table 4: Multidimensional poverty indicators

Category	**n**	**%**
Housing type		
Pucca	72	35.1%
Semi-Pucca	98	47.8%
Kutcha	35	17.1%
Sanitation		
Septic Tank	132	64.4%
Pit Latrine	70	34.1%
Open Defecation	3	1.5%

Healthcare access		
Government Hospital	112	54.6%
Private Clinic/NGO	78	38.0%
No Access	15	7.3%
Social Safety Net (SSN)		
Enrolled	25	12.2%
Not Enrolled	180	87.8%

Table 5: Key determinants of poverty

Determinant	Odds ratio	p-value
Low Education	3.214	0.008
Unemployment	2.845	0.023
Large Household Size	1.923	0.042
Kutcha Housing	4.112	<0.001
No SSN Enrollment	2.503	0.009

Table 6: Perceived reasons for poverty

Reason	n	%
Low Wages	98	47.8%
Unemployment	45	22.0%
Lack of Education	38	18.5%
Illness/Health Issues	24	11.7%

DISCUSSION

The findings of this study provide critical insights into the multidimensional nature of poverty in Narayanganj, Bangladesh, aligning with and expanding upon existing literature on urban and semi-urban poverty dynamics in developing countries. Our results demonstrate that poverty in Narayanganj is not merely an income-related phenomenon but is deeply intertwined with educational deprivation, poor housing conditions, and limited access to social safety nets – a pattern consistent with recent MPI-based studies in similar contexts [14, 15]. The high prevalence of income poverty (47.8% earning below 15,000 BDT/month) corroborates earlier findings by the Bangladesh Bureau of Statistics [16], but our study reveals more severe deprivation levels than national averages, particularly in housing and sanitation. This disparity supports the argument of another study [17], about the "urban poverty paradox" in industrial zones, where economic growth coexists with concentrated deprivation. The strong association between kutcha housing and poverty (4.1 times higher odds) particularly underscores the urgent need for housing interventions, as emphasized in recent SDG implementation reviews [18]. Our findings on occupational patterns present both challenges and opportunities. The predominance of garment workers (41.5%) among the poor population confirms previous observations about the sector's low-wage trap [19], while the high poverty risk among day laborers (72% below living wage) echoes warnings from another study [20] about informal sector vulnerabilities. These results suggest that current labor policies and minimum wage structures may be insufficient to lift workers out of poverty, necessitating comprehensive reforms as proposed in Bangladesh's Eighth Five-Year Plan [13]. The gender dimensions of poverty uncovered in our study (female-headed households facing 62% poverty rates) align with global evidence on feminized poverty [21], but with distinct local characteristics. Unlike rural areas where agriculture dominates, Narayanganj's industrial economy creates unique barriers for women, including job insecurity and lack of childcare support – factors requiring targeted gender-sensitive policies as recommended by the World Bank [22]. The extremely low coverage of social safety nets (12.2%) among poor households represents a critical policy failure, given their proven effectiveness in poverty reduction [23]. This coverage gap is particularly alarming considering our finding that SSN enrollment reduces poverty odds by 2.5 times, supporting other studies' [4], advocacy for expanded social protection in industrial zones. The rural-urban disparity in poverty risk (1.9 times higher in rural areas) further highlights the need for geographically tailored interventions, as proposed in recent urban poverty reduction strategies [24, 25]. Several limitations should be acknowledged. The purposive sampling, while necessary for targeting poverty hotspots, may limit generalizability. The cross-sectional design prevents causal inferences, and self-reported income data may contain reporting biases. Future research should incorporate longitudinal designs and mixed methods to better understand poverty trajectories.

Policy Implications:

These findings suggest three priority actions: First, immediate expansion of social safety nets with special attention to female-headed households and informal workers. Second, integrated slum upgrading programs address housing, sanitation, and basic services. Third, sector-specific labor market interventions ensuring living wages in garments and other key industries.

Limitations:

This study has several limitations, including its cross-sectional design, which prevents causal inferences, and the use of purposive sampling, potentially limiting generalizability. Self-reported income data may contain biases, and the exclusion of institutionalized populations could affect the comprehensiveness of poverty assessments in Narayanganj.

CONCLUSION

This study highlights the multidimensional nature of poverty in Narayanganj, revealing critical linkages between income deprivation, poor housing, limited education, and inadequate social protection. The findings underscore the urgent need for integrated policy interventions targeting industrial workers, female-headed households, and rural communities. By addressing these interconnected challenges through expanded safety nets, improved labor conditions, and infrastructure development, Bangladesh can accelerate progress toward sustainable poverty reduction and achievement of SDG 1 in its industrial heartlands.

Recommendation:

Policymakers should prioritize: (1) expanding social safety nets to cover vulnerable groups, (2) implementing living wage policies for industrial workers, (3) upgrading slum housing and sanitation infrastructure, and (4) strengthening vocational training programs. These integrated interventions would effectively address Narayanganj's multidimensional poverty challenges.

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