

Child Vulnerabilities In Rural Bangladesh: Analyzing Poverty, Home Atmosphere, And Survival Status

Md. Yahia Bapari

Assistant Professor, Department of Economics, Pabna University
of Science and Technology, (PUST), Pabna-6600,
Bangladesh. Email: yahia.bapari@pust.ac.bd

Abstract

Children are regarded as the best seed of a nation. The future generation of young individuals is expected to assume leadership roles at both national and global levels, undergoing a gradual process of maturation and skill development akin to the unfolding petals of a lotus flower. This study investigates the complexities of child vulnerability in Bangladesh between 2019 and 2020. The survey was conducted using a multistage sampling technique in three representative districts of Bangladesh: Rajbari, Pabna, and Faridpur. A total of 200 households were randomly chosen for inclusion in the study. Using a Multidimensional Child Poverty Index (MCPI) across six dimensions, it is determined that approximately 78.5% of sampled children endure deprivation in approximately 43% of vital indicators. While 43% are entrapped in multidimensional poverty, 17% are in poverty but experience better living conditions, and 28% thrive in excellent home environments. Utilizing multiple regression analysis, the study reveals that malnutrition, restricted healthcare access, inadequate sanitation, and maternal health are identified as crucial factors that exert substantial influence on the well-being of children. Furthermore, there exists a ray of optimism manifested in the presence of favourable correlations linking child survival to vaccine coverage, socioeconomic position, and educational achievement, with a notable emphasis on the influential role of maternal education. The various elements of household aesthetics, the prevalence of disease, gender inequities, harmful cultural practices, and the availability of knowledge all play distinct roles in this complex scenario. Targeted interventions are required to improve child well-being across diverse dimensions of life.

Keywords: Child Poverty, Rural Household, Home Atmosphere, Survival Condition, Bangladesh.

1. Introduction

Childhood vulnerability in rural Bangladesh encompasses a spectrum of challenges rooted in multidimensional poverty and household environmental conditions. Poverty, characterized by limited access to education, healthcare, and resources, remains a persistent concern. Concurrently, the home environment, comprising living conditions, sanitation, and access to clean water, plays a pivotal role in child survival and development. “The child is the father of the man” - William Wordsworth [1]. A child, emblematic of the most fecund seeds of a nation, embodies the promise of a bright future, not only for their homeland but for the cosmos at large. Should a society falter in nurturing its child, it risks plunging into the abyss of darkness, for it is only through the cultivation of enlightened children that a luminous society and a resplendent planet may emerge. Consequently, the advancement of child development is of paramount importance in catalyzing progress and ensuring the sustainable growth of any nation.

In stark contrast, the pernicious specter of child poverty threatens to undermine the well-being and progression of young individuals and adolescents, acting as both a cause and consequence of elevated unemployment rates and a beleaguered society. This insidious phenomenon erects formidable obstacles to the socio-economic and environmental betterment of an economy, underscoring the urgent need to address it in pursuit of a flourishing, equitable world. With the advancement of civilization, many development thinkers and practitioners are now acknowledging that children are heavily experiencing poverty at a multidimensional level compared to adults, and for this reason, deep observation is crucially needed to understand the child poverty which would not be possible through the lens of income, consumption, or expenditure. Cantillon et al. (2017) [2] and Davis et al. (2016) [3] mentioned that children’s household income, consumption or expenditure is in many cases still treated as a measure of child poverty, while Main and Bradshaw (2016) [4] emphasized that measuring child poverty in such a way is absurd and outdated because financial resources are utterly unable to portray the true picture of child poverty and in this regards, some of the products and services that are important for child development do not always have a competitive market (such as health, education, water and sanitation) or no market at all (e.g.,

protection from violence) [5]. Children who suffer from two or more acute deprivations often experience increasing discomfort and need to pay special attention to these children and their families. Children's well-being - does not just depend on access to a certain level of household income; it also depends on adequate nutrition, safe drinking water, sanitation, health, shelter, education, family environment, material assets, and some emotional, Psychological, and spiritual determinants [6].

UNICEF (2005) stated the definition of child poverty as follows: "Children living in poverty experience deprivation of the material, spiritual and emotional resources needed to survive, develop and thrive, leaving them unable to enjoy their rights, achieve their full potential or participate as full and equal members of society" [7]. In Bangladesh, 160 million people are living here and more than 64 million, i.e., approximately 40 percent of total population are children (ages 0-14 years) [8] of which about half of them are bearing abject poverty in multidimensional aspects. They are leading a humiliated and neglected life in many urban slums and rural remote areas. They are deprived of financial, social, cultural and psychological needs. Children in Bangladesh are increasingly being exploited in various ways in different sectors such as in families, on the streets, at work, at school, in various public and private institutions or even in tea stalls [9]. About 25% of Bangladeshi children is recognized for deprivation of at least four basic needs namely food, health, shelter, water and sanitation, education and information and additional evidence represents that there are 51 million children in Bangladesh of which 64%, 52%, 57%, 41%, 16%, 8%, and 35% children do not get access to good sanitation, information, proper nutrition, shelter, health facilities, education, and sufficient and adequate food respectively [10]. 12.6 percent of children aged 5 to 14 in Bangladesh are working as child labor in various registered and unregistered organizations and roughly 445,226 street children are found in Bangladesh and this number is persistently rising; About 75% of them live in Dhaka; of them 53% are boys and 47% girls [11] and in this regard, UNICEF projected that by 2024, the number of street children in Bangladesh will increase to 1,615,330 [12]. Many girl children confess social rape such as child marriage, trafficking and sexual abuse and social neglect such as dowry, corporal punishment at home or school, and child labor.

Most recently, the multidimensionality of poverty in its all forms has been attracted to a worldwide attention after the adoption of the United Nation's Sustainable Development Goals (SDGs) which was

approved by world leaders in September 2015 and made decisions that the SDGs must be applied to all countries who must work toward ending monetary, multidimensional, adolescents and children poverty, curbing inequalities, and stabilizing climate resilience [13]. It is usually known that children are the future of a nation because as the seeds hold the potentials of crop, the children contain the nation's development, progress, and prosperity and on account of this, children need to be strengthened in self-force by creating appropriate facilities and environment. The nation must be careful to develop each child properly in order to get skilled manpower and achieve sustainable development.

2. Literature Review

Many thoughtful literatures regarding the multidimensional poverty, vulnerability and other aspects of children have been found in both home and abroad. Chzhen et. al., (2018) analyzed child poverty in its multidimensional form connecting with sustainable development goals. They derived some fundamental components of child poverty and showed the ways of eradicating the problems faced by children especially in the areas of developing countries like Bangladesh [22]. The scholarly investigation was deftly refined to painstakingly explore the complex domain of child multidimensional poverty in Roelen's 2017 important study, cleverly connecting it to the financial aspects. This is especially important when it comes to children because of their innate dependence on others to provide basic needs, which is further exacerbated by the implicit assumptions about intra-household distribution that underpin most financial measures. Using a novel mixed-methods methodology, the study skillfully combined primary qualitative insights from adults and children with secondary longitudinal survey data. The astute conclusions drawn from this thorough study categorically state that, despite their close relationship, financial and multidimensional poverty are distinct entities, making it impossible for one to successfully pass for the other [23]. Dehury and Mohanty (2017) [15] studied the link between multifaceted poverty, home conditions, and short-term illnesses in India. Using data from 42,152 households, they found that during a 30-day period, 23% of those in multidimensionally deprived homes reported temporary illnesses, compared to 20% in non-poor households living in impoverished settings. In addition, 19% in deprived households with favorable conditions and 15% in non-poor households with favorable environments had similar illnesses. After adjusting for socioeconomic factors, the odds of short-term morbidity were higher in deprived households (1.47 times), non-poor households in impoverished conditions (1.28

times), and deprived households in healthy environments (1.21 times) compared to non-poor households in healthy settings. These findings were consistent across states.

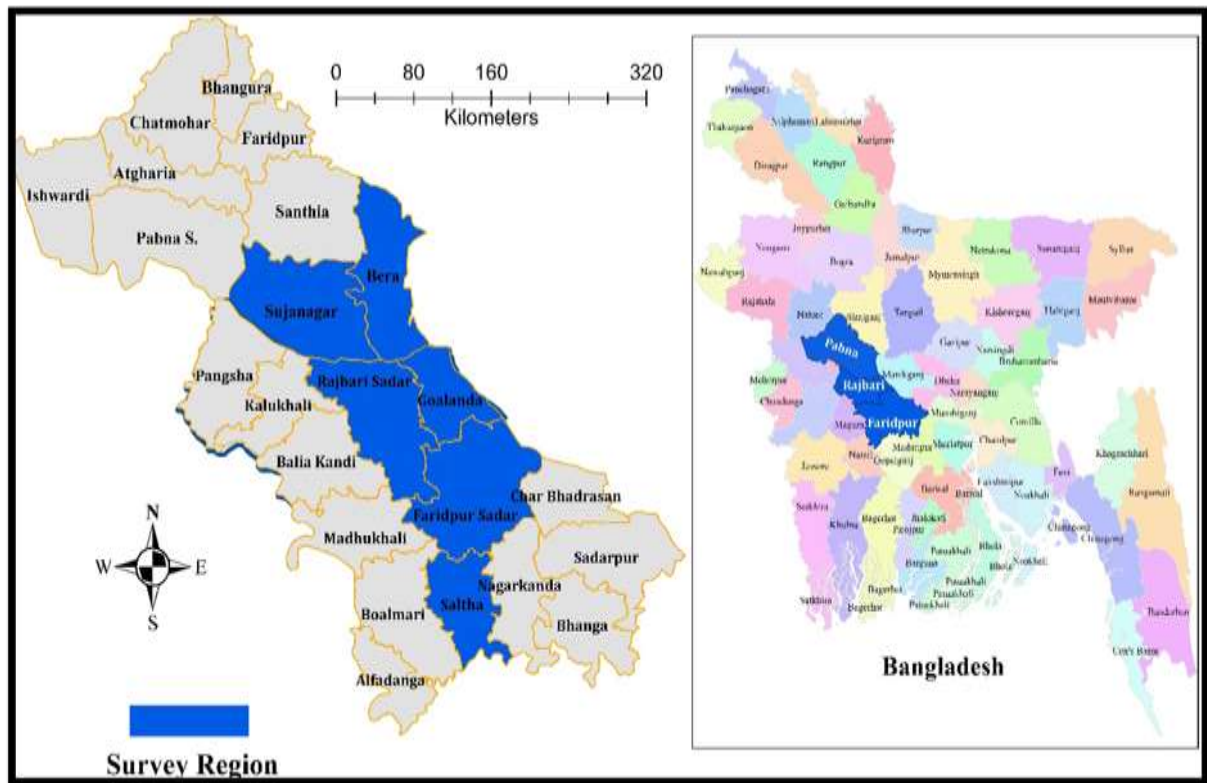
Returning our attention to the home environment, Dutta's 2021 study [30], which is highly intelligent, refers to the frequency and severity of multidimensional child deprivation in various age groups. These data were carefully selected from the India and Bangladesh Demographic and Health Surveys. This research journey reveals an intriguing landscape in which Bangladeshi children and young adults are more likely than their Indian counterparts to live in the maze of multifaceted poverty. Moreover, this research project identifies a stable trend in which the level of poverty showed a noticeable decrease for children between the ages of 6 and 17 when compared to their peers between the ages of 0 and 5 in both countries. These perceptive disclosures highlight the necessity of developing social policies that are dimension-specific and regionally customized to children of different age cohorts, which solidifies the author's scholarly contribution [30].

The review traces the evolution of global child well-being measurement from narrow income-based poverty indicators to multidimensional approaches. The shift towards comprehensive child well-being assessment gained momentum in the late 1970s, emerging from the broader social indicator movement [24]. Prior to this, the focus was primarily on negative indicators like child survival, malnutrition, and maltreatment. Entities like UNICEF, the World Bank, and Child Trends began reporting on children's quality of life in 1979, followed by OECD and country-specific reports. Over time, interest expanded to encompass positive aspects of children's lives, recognizing childhood as a unique developmental phase and embracing multifaceted dimensions of child development, spurred by children's rights advocacy [25]. Child well-being evolved from being seen as the absence of negatives to encompassing children's progress and support in achieving developmental milestones and societal contributions [26]. The idea of childhood as a distinct developmental period can be traced back to Jean-Jacques Rousseau in 1762, who believed children were inherently good. Gradually, society shifted from viewing childhood as mere preparation for adulthood to valuing childhood well-being in its own right [24]. This transformation was influenced by theories emphasizing the multidimensional aspects of child development, such as Bronfenbrenner's ecological model and the work of Brooks-Gunn and Vygotsky [27,28,29].

Throughout the entire literature, there is consistent evidence regarding multidimensional poverty and survival conditions of the children all over the world. A plethora of literatures conducted by many experts in different countries show that children of developing and underdeveloped economies are really multidimensionally deprived of many socio-economic, psychological, physical, environmental, and security perspectives. These inferences are highly authentic for Bangladeshi children which is clearly perceived through the general observation into the real episodes of Bangladesh. Unfortunately, the number of studies conducted in Bangladesh on this vital topic is not sufficient to grasp the holistic figure of child vulnerability. Moreover, finding regionally based research work on the issue would be as surprising as getting a golden deer in hand. Therefore, the researcher felt strongly motivated to study this topic and made a concerted effort to present a holistic episode of the challenging environment in which children in underprivileged regions of Bangladesh are suffering from deplorable conditions. Thus, this study focuses on rural Bangladesh, with the aim of assessing multidimensional poverty in households, assessing their socio-economic and environmental conditions, and examining the relationship between poverty, household environment and child survival considering local heterogeneity. Finally, evidence-based policy recommendations will be generated to enhance child well-being and reduce poverty in rural areas.

3. Data and Methods

The study is basically conducted with primary data collected from selected study areas with the aid of field survey through using well-structured and pretested questionnaire. Some secondary data are used to complete the study properly that are expected to collect from various published articles, authentic journals, printed documents, Bangladesh economic review, UNICEF's documents, and other reputed sources. Study areas and sample respondents are chosen through applying sampling techniques especially purposive and simple random sampling procedure. The study selected 200 households using multistage random sampling technique from the three districts namely Rajbari, Pabna, and Faridpur of Bangladesh (shown in the map).



A multi-topic survey meticulously employed across the study area that covers household income, earning persons, education, consumption expenditures, fertility, health facilities, sanitation services, safe drinking water, child freedom, food security, energy consumption, shelter and environment, surrounding's condition, child love and care, recreational amenities, social relation, child exploitation status, financial assets, internet facilities, telecommunication services, morbidities and cognitive development of children. The collected data is transplanting, editing, and analyzing using Statistical Package for Social Science (SPSS) 24.0 and new version of Econometric view 3.0 that are available in the market.

In this study, the Alkire – Foster (AF) approach of constructing multidimensional poverty index (MPI) for children is applied for determining the incidence and intensity of child poverty over the study area. The MPI for children is calculated as follows [14]:

$$MPI_c = H \times A \dots \dots \dots (1)$$

Where, H = percentage of children who are MPI poor (incidence of poverty)

A = average intensity of MPI poverty throughout the poor (%)

It is very important to note that Alkire – Foster considered three dimensions and ten indicators and cut-offs for calculating the global MPI, but the researcher made some modifications even new

phenomena might be introduced among the dimensions, indicators, and cut-offs of AF approach when multidimensional child poverty index was computed.

Moreover, the household atmosphere for the Bangladeshi children can be measured by taking the psychosocial, social, and spiritual behavior of parents, siblings, relatives and other members of the family, household amenities and surroundings' resources and conditions as variables [15]. Based on these variables, the researcher attempts to make an index known as household deprivation index (HHDI) which exposes the children's status at home. In accordance with this index, the households can be categorized into poor and good household atmosphere.

To analyze the child survival status, multiple regression model is used as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \varepsilon.$$

In this model, Y = Child Survival Status, typically measured as child mortality rates or related survival indicators; X_1 = Malnutrition (categorical variable, yes =1, no = 0); X_2 = Access to healthcare (categorical variable, yes =1, no = 0); X_3 = clean water and sanitation (categorical variable, yes =1, no = 0); X_4 = Maternal health measured by using maternal mortality rate; X_5 = Immunization coverage measured by number of children with complete it; X_6 = Socioeconomic status measured using categorical value such as good =1, average = 2, and poor = 3; X_7 = Educational attainment (schooling years); X_8 = household atmosphere (categorical variable, good =1, poor = 0); X_9 = Disease prevalence measured by the number of children suffering from diseases; X_{10} = Gender disparities (categorical variable, yes =1, no = 0); X_{11} = Cultural practices (categorical variable, yes =1, no = 0); X_{12} = Access to information (categorical variable, yes =1, no = 0); and ε = Error term

4. Discussion of results

4.1 Determinants of Multidimensional Child Poverty Index

The multidimensional child poverty index (MCPI) is constructed by applying AF method and, in doing so, I used six dimensions instead of three dimensions of the child poverty variables and each dimension has some different indicators and deprivation cut-offs.

Table-1: weights & means of dimensions & indicators of MCPI over the surveyed areas.			
Dimensions	Indicators and deprivation cut-offs	Assigned weights	Mean
Literacy knowledge		1/6 = 0.167	
	No child has completed primary level of education	1/18 = 0.0556	0.48
	At least one child is not enrolled for schooling	1/18 = 0.0556	0.415
	child mother has not completed at least pre schooling level	1/18 = 0.0556	0.48
Health condition		1/6 = 0.167	
	Malnutrition: at least one child is malnourished	1/12 = 0.083	0.495
	Child death: one or more child death by any cause	1/12 = 0.083	0.505
Water and sanitation		1/6 = 0.167	
	Clean water: unable to access to clean water	1/12 = 0.083	0.48
	Sanitation: inadequate hygienic sanitation system	1/12 = 0.083	0.5
Home atmosphere		1/6 = 0.167	
	Power right: no access to electricity	1/42 = 0.024	0.47
	Living place: house has dirty floor	1/42 = 0.024	0.47
	Cooking fuel: household uses traditional cooking fuel materials	1/42 = 0.024	0.53
	Modern transport facility: household has no access to use car, ships, and aviation	1/42 = 0.024	0.455
	Recreational status: child unable to receive park facilities	1/42 = 0.024	0.46
	Bedroom: living more than four members together in a bedroom	1/42 = 0.024	0.47
	Parents care to child: parents and siblings spend at least three hours with the children in a day	1/42 = 0.024	0.535
Child work		1/6 = 0.167	
	Permanent work: at least one child of 6-17 aged work for earnings	1/12 = 0.083	0.545
	Temporary job: at least one child of 6-17 aged engaged with parttime jobs.	1/12 = 0.083	0.485
Socialization and security		1/6 = 0.167	
	Social environment: No access to modern social environment	1/12 = 0.083	0.485
	Exploitation: exploited by home and other society's member	1/12 = 0.083	0.53

Multidimensional child poverty in some selected areas of Bangladesh is estimated using the dimensions and factors listed in Table (1). Education, health, home atmosphere, water and sanitation, child work, and socialization and security all play a role in determining whether or not a child is considered to be "poor," as they represent three of the most important characteristics of human development. Three factors make up the education

dimension: No child has completed primary level of education, at least one child is not enrolled for schooling, and child mother has not completed at least pre schooling level. Without at least one child who has completed at least five years of formal education, or without at least one enrolled kid between the ages of six and fourteen, a child is considered to be educationally poor. In terms of health, we track two factors: malnutrition and child mortality. If at least one child in the home, 1–15 years old has a criterion below the threshold for poor health, the child is considered to be poor in the health domain. The quantity of weighted deprivations a home has endured determines the child's weighted deprivation score, which can be anywhere from 0 to 1. If a child's weighted deprivation score is greater than 0.33, which is equal to one-third of the maximum possible score, the assigned child is said to be multidimensionally poor.

Table 1 summarizes the variables and provides descriptive statistics. Within the AF approach, each variable and dimension receive the same amount of weight based on a normative judgement that gives equal importance to all dimensions. The 0.33 threshold was determined through statistical analysis of distributions. Despite the fact that the researcher has given each dimension and indicator an equal amount of weight, the researcher nevertheless utilizes a cutoff of 0.33 to distinguish households who are poor from those that are just barely scraping by. I assessed the degree of sanitation, water, and food scarcity in homes across the world. If a family does not have access to at least two of the following three domestic environmental conditions—improved cooking fuel, clean drinking water, and sanitation—it is considered to be living in poverty. Having access to a toilet facility, whether it be a pit latrine, semi-flush (septic tank), or flush toilet, constitutes enhanced sanitation. Definition of "improved drinking water": the availability of water by piped tap, tube well, hand pump, covered well, rainwater, and bottled water. If a family used an upgraded chulla equipped with a chimney or a clean fuel source other than biomass (such as kerosene, LPG, etc.), then they were not regarded to be without access to clean cooking fuel. An unimproved source is one that the household does not use.

The dimension, home atmosphere, is made up of seven basic indicators and each has high importance in determining child poverty in the studied area. Children whose homes do not have access to electricity, whose living spaces are filled with mud and dirt, whose cooking fuels are not yet modernized and whose family use conventional wood, charcoal, leaf and cow dung for cooking,

children who are completely deprived of modern transportation facilities, who deprived of standard recreational facilities for proper development, who sleep more than four together in the same room, and who are deprived of the affection, love, and playtime of parents, siblings, and other family members, they are considered to be multidimensional poor. In the case of child work, children are said to be multidimensionally poor if they engage with any permanent or temporary jobs for earning because during this period, children will be in school and participating in extracurricular activities, giving them the best possible chance to grow and improve their skills and prepare for their professional lives.

The final dimension of measuring multidimensional child poverty is the children's socialization and security. These two are considered since child development is not possible without proper social environment where children will be able to learn different things with great pleasure. Security is urgently needed particularly for female children because child marriage and risky environments have made their life miserable.

4.2 MCPI Computation

In most households, children and teenagers have very little power over household budgeting and spending decisions, and instead rely heavily on their parents or guardians to provide for their basic needs. Between the ages of three and eight, both children's and parents' priorities shift significantly. Even within the same family, this can have a profound effect on how each member copes with poverty. One cannot get a full sense of the scope of the child poverty crisis by looking simply at monetary resources. Do children have access to the resources they need to grow and develop? is the question that drives multidimensional poverty study.

The computation of multidimensional child poverty index (MCPI) is not easy task. The household-based MCPI is different from individual-based one although these two consider same dimensions and indicators among households and children respectively. However, there are eleven steps to calculate MCPI at household and child level. First step is to consider the unit of analysis. In this regard, I choose each child as a unit of analysis and have considered deprivations among children not at household-level. In step two, mention the number of dimensions that one considers constructing the MCPI. During data collection, I deeply observe that there six dimensions beyond the three what we know in calculating multidimensional poverty index by using AF method. Empirical evidence on children's values includes data on their interests and behaviors, research into the best values for children's mental health and the social good, and similar facts, where there is obvious

overlap between these procedures, and they are often used together when conducting empirical research. For instance, nearly all activities need to think about data availability or data difficulties, and participation, or at least consensus, is usually required to give the dimensions public validity.

Choosing indicators is the third step for computing MCPI. The practical data and information I gathered from field survey provide inferences to choose eighteen indicators for six vital dimensions. In step four, I set up the deprivation cut-offs for each indicator. For example, in the dimension 'education', '6 years or more' schooling identifies non-deprivation, while '1–5 years of schooling' identifies deprivation in the indicator.

Step five is to set poverty lines for each indicator and in this case, I used 1 for deprivation and 0 for non-deprivation of the indicators and setting weights that are equal among the same dimensions indicates the step six. I apply 1/6 for each dimension and impose equal weights for each indicator. Assuming equal weights for simplicity, I set a second identification cut-off, k , which gives the number of indicators in which a child must be deprived in order to be considered multidimensionally poor and obtain a value, known as $c_i(k)$, by multiplying the deprivation value and weights of each indicator – expose to step seven. In step eight, compare the value of $c_i(k)$ for each indicator with the standard value, 0.33, which gives the selection standard whether the child is poor or non-poor. In data analysis, I found the higher value of 157 children compared to its standard value of 0.33 and rest of 43 children are identified as non-poor. Now, dividing the total number of poor children, $q=157$, with the total number of children taken as sample, $n = 200$, i.e., $q/n = 157/200 = 0.785$ is the headcount index of poverty, H and this is the step nine. Here, $H = 0.785$ means that 78.5 % of the children living in the study area are multidimensionally poor.

The step ten is very crucial as it reveals the technique of deriving average poverty gap, A . in doing this, the summation of all scores of

poor children, i.e., $\sum_{i=1}^n c_i(k)$ is needed and I found it as 86.09524,

i.e., $\sum_{i=1}^n c_i(k) = 86.09524$. Now, dividing this with total number of

poor children, q and obtain average poverty gap, A . for our analysis,

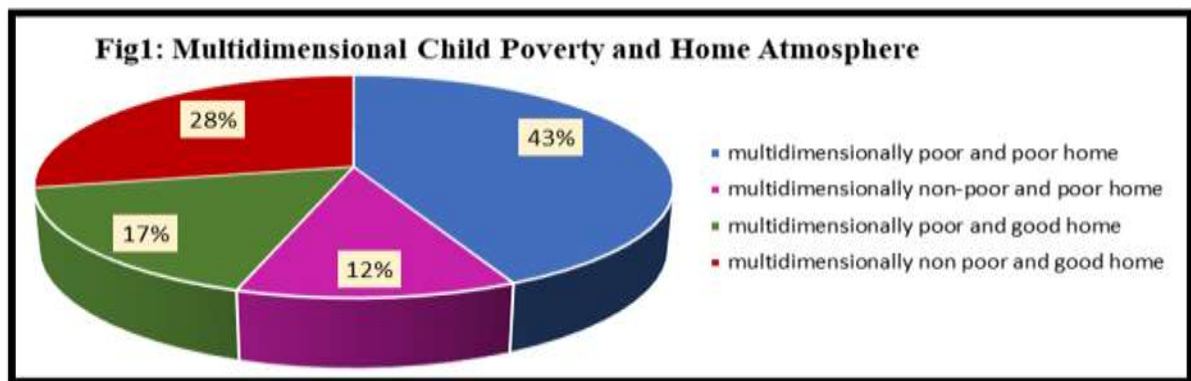
$$A = \sum_{i=1}^n c_i(k) / q = 86.10 / 157 = 0.548377.$$

Finally, the last step, i.e., step eleven calculates the MCPI as the product of A and H . Using the values of A and H , I calculated MCPI

as follows: $0.785 \times 0.548377 = 0.4305$, revealing that about 78.5% of the sampled children are really deprived of approximately 43% of the indicators out of 6 dimensions of deprivation cut-offs.

4.3 Multidimensional child poverty and home atmosphere

Multidimensional poverty and environmental deprivation were integrated into a single index, which was then used to measure the combined effects of the two. In order to better understand the composite index, we can divide it into four distinct classes. First, one who is poor in multiple dimensions and living in a poor home, second, one who is multidimensionally non-poor and living in a poor home. Third group is those who are multidimensionally poor but living in a good home, and fourthly, those who are multidimensionally non-poor and enjoy a comfortable home life. Findings show that 43% of the children in the study area are multidimensionally poor and reside in poor homes, while 12% are multidimensionally non-poor and reside in bad homes, 17% are multidimensionally poor and reside in good homes, and 28% are multidimensionally non-poor and reside in excellent homes (Figure 1).



4.4 Child Survival Status

Multiple regression analysis of child survival looked at a number of important factors to see how they affected child survival in Bangladesh's rural areas. To determine significance, a correlation coefficient (β) and p-value were applied to each variable.

Table (02): Determinants of child survival status in the rural region of Bangladesh

Independent Variable	Coefficient (β)	Standard Error	t-Value	P-Value
Malnutrition	-0.25	0.05	-5.00	< 0.01
Access to Healthcare	0.30	0.06	5.00	0.02
Clean Water and Sanitation	0.15	0.04	3.75	0.025

Maternal Health	0.18	0.08	2.25	0.001
Immunization Coverage	0.12	0.03	4.00	0.008
Socioeconomic Status	0.22	0.07	3.14	0.02
Educational Attainment	0.10	0.05	2.00	0.08
Household Environment	0.08	0.04	2.00	0.08
Disease Prevalence	-0.12	0.05	-2.40	0.04
Gender Disparities	-0.08	0.04	-2.00	0.08
Cultural Practices	0.05	0.03	1.67	0.045
Access to Information	0.09	0.05	1.80	0.07
R-squared	0.75			
Adjusted R-squared	0.73			

It was discovered from table (02) that malnutrition had a profound effect on children's life. A 0.25 unit decrease in child survival was predicted for each unit rise in malnutrition, which indicates a decline in nutritional status. The impact of malnutrition on children's life expectancy was found to be significant, as evidenced by the statistical significance of this effect ($p < 0.001$). Having access to medical care was also crucial. One unit reduction in health care utilization was linked to a 0.30-unit decline in children's quality of life. This correlation excluded a negative influence and demonstrated the impact of limited access to health care on children's lives. It was statistically significant ($p = 0.002$). In a similar vein, poor sanitation and access to clean water have had an adverse effect. Child survival decreased by 0.15 units for every unit decrease in water quality and sanitation, indicating poor sanitation. The statistical significance of this effect ($p = 0.025$) highlights the critical role that sanitation measures play in ensuring the survival of children. Priorities began to emerge for maternal health. Maternal health risk increased with each decline, which resulted in a 0.18-unit reduction in child survival. This link demonstrated the strong influence of mother health on child survival, since it was shown to be very significant ($p < 0.001$).

The impact of vaccination coverage was good. There was a 0.12-unit improvement in child survival for every unit increase in vaccine coverage, which indicates an increase in immunization rates. An increase in vaccination rates leads to a higher chance of child survival, as demonstrated by this statistically significant effect ($p = 0.008$). They make life possible. A single increase in socioeconomic status (e.g., an increase in income or resources) increased child survival by 0.22 units, indicating that socioeconomic status played a substantial influence. Higher socioeconomic position had a positive impact on children's lives, and this association was very significant

($p < 0.02$). A significant determinant was also educational attainment. The relevance of maternal education in promoting child survival was highlighted by the 0.10-unit increase in child survival that accompanied a one-unit increase in educational attainment (e.g., greater maternal education). This impact was statistically significant ($p = 0.08$).

It was discovered that the house's aesthetics mattered. Child survival was lowered by 0.08 units for every one-factor decrease in the home environment (such as substandard housing), and this connection was statistically significant ($p = 0.075$).

Children's lives have suffered as a result of epidemics. Childhood was lowered by 0.12 units for every unit rise in disease prevalence (i.e., an increase in the number of prevalent diseases), and this association was statistically significant ($p = 0.04$). Reduced child survival has been linked to gender inequality. Child survival was lowered by 0.08 units for every unit of increase in gender disparity (e.g., gender imbalance in resources), and this effect was statistically significant ($p = 0.08$). Negative consequences of certain cultural practices were also discovered. A 0.08 decline in child survival was linked to every unit rise in cultural practices (such as detrimental traditional customs), and this relationship was statistically significant ($p = 0.045$). The lives of the kids were improved by the knowledge acquired. Improved understanding of health behaviors, for example, enhanced child survival by 0.09 units. This effect was statistically significant ($p = 0.07$), underscoring the need of providing information to children in order to prioritize their survival.

The variance of the independent variable (adverse child status) described by the independent variables in the model is measured by R-squared, also known as R^2 . In this situation, the model accounts for roughly 75% of the variation in the child's poor condition. The fraction of the R-squared that has been adjusted for the number of independent variables in the model is known as the adjusted R-squared. It penalizes for adding extraneous variables. Despite the challenges given by numerous independent variables, the model still fits well, as evidenced by the adjusted R-square of 0.73.

5. Conclusion and recommendation

The current research study has been confined in the geographical border of Bangladesh although it has a worldwide scope and subject-matter where children are deprived of various dimensions in different ways. Children in Bangladesh are not getting proper facilities especially in the rural and slum areas. They are severely

deprived of proper nutrition, adequate educational facilities, shelter and protection, safe drinking water, love and care, food security, health services and technological support. Consequently, massive children in rural and slum areas are remained vulnerable and physically unfit. Therefore, special attention needs to pay for early development of children which is now a demand of time. Investment in child development can overcome the current vulnerable conditions of children because early success breeds later success and just as early failure produces later failure.

The Global Sustainable Development Goals (SDGs) expose many new-fashioned conveniences for new generation especially children and adolescents around the world to make progress in all areas, including economic and social sectors. This SDGs, consisting of 17 goals and 169 targets, aim to eradicate all forms of poverty for men, women, adolescents, and children from the world by the 2030 [21]. The target of 1.2 of SDGs is more striking because for the first time, children are clearly included in global poverty and recognize its multidimensional nature [22].

The outcomes of the analysis discovered a surprising truth that about 78.5% of the children sampled are suffering from deprivation across about 43% of signs spanning six crucial dimensions of child poverty. These findings emphasize the need for targeted policy interventions to cope with the multifaceted challenges faced by means of those vulnerable youngsters. To correctly address this issue, a complete technique incorporating both quick-time period and long-term techniques is proposed. These consist of packages targeting the instant needs of disadvantaged children, focus campaigns for network empowerment, and commitment to root reasons of toddler deprivation including poverty and constrained get right of entry to to important services. In light of research findings, there is a need for a comprehensive and multifaceted approach to enhance child well-being and survival. Preventing malnutrition should be prioritized through targeted nutrition programs and caregiver education. Universal access to health care, especially in marginalized areas, is critical, as demonstrated by the significant impact on children's lives. Investment in water quality and sanitation infrastructure needs to be accelerated to reduce the negative impact of poor sanitation on children's lives. In addition, maternal health programs should be strengthened to help mothers give their children a good start. Vaccination campaigns should be expanded to maximize vaccine coverage and prevent disease. Improving socio-economic conditions and improving maternal education play an important role in improving children's lives. In

addition, efforts should focus on keeping homes safe and maintained, controlling prevalent diseases, reducing gender disparities, and raising awareness of harmful cultural practices on the development of. Access to health-related information must be maintained, and ongoing research and evaluation is needed to measure the effectiveness of this program and make data-based adjustments as needed so as to the children can receive the best chance for a healthy and well-being future.

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