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Changes in Socio-Demographic Factors of Bangladesh: Links with Poverty

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ABSTRACT

The primary purpose of this study is to investigate how poverty is changed along with four socio-demographic factors. The study is descriptive, using panel data from 2007 to 2019 by employing Trend Line and Correlation of Coefficient. The Trend Line depicts that life expectancy is increasing, literacy is rising, the population growth rate is fixed, the infant mortality rate is a downtrend, and poverty has been reduced over thirteen years in Bangladesh. The Correlation results showed that the correlation between life expectancy rate and poverty rate as well as literacy rate and poverty rate are negative but significant statistically. Besides, the population growth rate and poverty rate, as well as the infant mortality rate and poverty rate, are correlated and statistically significant. The outcomes indicate that an increasing pattern of life expectancy rates and literacy will decrease the poverty rate in Bangladesh. In addition, the population growth rate and high infant mortality rate increase the poverty rate in Bangladesh. The government should formulate a time-oriented fair policy so that rapid growth of the economy, foreign investment, and capacity to manage risks connected with natural calamities and investment in farming and infrastructure is possible to alleviate poverty. Finally, it is suggested that multidimensionality such as regional disparity and mental health conditions should measure empirically to know the causes of poverty in Bangladesh.

INTRODUCTION

Poverty refers to the human need to become dissatisfied (O'Boyle & O'Boyle, 2012; Lenagala& Ram, 2010; Smith, 2010; Akoum, 2008). These necessities incorporate fresh water, nutrition, health treatment, education, and accommodation. Poverty is a complex social feeling whose cause relies upon gender, age, culture, and social and financial elements. Adjacent to this, they demonstrated that neediness is related exclusively to low pay as the destitution is not entirely settled as per the pay; individuals who live beneath the destitution level are viewed as poor (Smith, 2010). Also, poverty is a condition where people have limited financial resources by which they cannot satisfy their fundamental needs, which indicates an inferior living standard. Poverty plays a vital role in measuring the economic environment of any country. To ensure the development of a country, poverty elimination is a baring issue. Bangladesh

has been fighting against poverty to enhance its development strategy for the last decade. The eradication of poverty is essential for the nation's sustainable advancement. Despite extensive trust in all poverty reduction plan reports since Bangladesh's freedom, countless individuals still live under the insolvency line (Khatun et al., 2021). Nonetheless, poverty remains a problematic issue that frustrates Bangladesh's desire to become a least developed country (LDC).

Poverty is a state in which an individual's resources, primarily their financial resources, are insufficient to satisfy the individual's minimal requirements, including social relationships (MacInnes et al., 2014). Although plenty of poverty works in Bangladesh, there is a dearth of such research. In poverty studies, secondary data-driven research has become disappointing. The relationship between socioeconomic factors and poverty is revealed by analyzing patterns of long-period

poverty data (Ahmed & Uddin, 2004). The researchers intended to assess Bangladeshi families' standard of living and socioeconomic conditions and distinguish the main factors of living below the standard level using data from the Bangladesh Demographic and Health Survey (BDHS) in 2007 (Khudri & Chowdhury, 2013). However, decreasing poverty is quite tricky for Bangladesh (Kona et al., 2018).

Not just underdeveloped nations are experiencing this issue; even the exceptionally industrialized and developed nations are not liberated from this trouble. In Bangladesh, It is quite disappointing that illiteracy is the major problem. This issue is one of the significant limitations to the economic advancement of Bangladesh. Also, socioeconomic pointers such as imbalance, empowerment of women, public health, population growth rate, and life expectancy have been reinforced further. Misha and Sulaiman (2016) investigated the world's most densely populated nation with 150 million individuals in Bangladesh, 31% of whom live beneath the country's poverty line of US \$2 daily. Life expectancy, literacy, population growth, and infant mortality are the most crucial socioeconomic progress factors connected to the poverty rate, which is prominent for the sustainable development of Bangladesh. This study's primary objective is to investigate the association among changes in some significant socio-demographic factors, including poverty rate, over 13 years. In Bangladesh, Ahmed (2004) mentioned that research focusing on poverty determinants, i.e., the primary factors contributing to poverty, is ignored. Although various variables have been studied on the nature and sources of urban and rural poverty, there are few studies based on correlational approaches. Hence, this study is a critical point of discussion.

In the review of relevant studies, Ahmed (2004) recognized the connection between poverty factors and socio-demographic links such as land ownership, sex, family, age, conjugal condition, livelihood, profession, and ownership of the house in one poorest region of Bangladesh. Age and education of the family head, family size, family types, dependent numbers, salary per head, property, accessibility to power, cultivable land area, engagement with agriculture, family non-farming resources, and the number of male and

female earners were all potential factors that could have a significant impact on poverty (Imam et al., 2018). Rukunujjaman (2016) revealed that the Rangpur and Rajshahi have a worse situation than the other divisions in the poverty index. He investigated the level of poverty in Bangladesh, shed light on different issues, and examined the relationship between the growth of the economy, inequalities of development, disparity of income, and poverty.

Along with population health, the average lifespan is another crucial critical indicator of economic progress in a nation. To measure social development, the Life Expectancy approach has been accepted as an innovative examination instrument, such as equity and poverty in Bangladesh (Khan & Asaduzzaman, 2007). Mahumud et al. (2013) concluded that life expectancy directly affects more real per capita income and higher consumption on the well-being of health. Nevertheless, wage and real income vulnerability showed that such a development little affected rural areas' pay inequalities or poverty alleviation (Khan, 1990). Analyst Baher Kamal noticed that while life expectancy has expanded essentially and poverty has been relatively diminished inside the nation, poverty and its' multi-facets keep on existing close by affluence inside and between nations (Zamir, 2022).

It is also suggested that fast population expansion may restrain economic progress, particularly in low-income nations with unfavorable policy conditions (Das Gupta et al., 2011). So, population growth is another major factor related to poverty. Empirical examinations progressively support the possibility that nations have consolidated policies and planning programs of family in their overall strategies of economic development and have accomplished high and supported sustainable economic growth, and they have likewise overseen critical decreases in poverty (Sinding, 2009). Likewise, increasing population growth makes it more challenging for poor and lower-middle-income nations to pay the rise in public spending per capita required to end poverty, end food insecurity, and provide access to healthcare, education, and other important facilities (Wilmoth et al., 2022). Though, there are two major contrasting views (fertility rate and economic

policy) about the connection of population growth with poverty (Merrick, 2002).

Education assumes a significant part in moving individuals out of poverty to more self-sufficiency (Wamba, 2010). Literacy has numerous contributions to a particular country, like economic and social changes. In everyday lives and community, fundamental abilities of literacy - proficiency, writing, and reading - particularly individuals of rural areas are better prepared to make proper decisions and become active members in the recognized marks of sustainable development: financial, social, wellbeing, political, natural and institutional turn of events (Lind, 2008). Thus, literacy would not alone help to reduce poverty in an economy like Bangladesh. Although, a study focused inversely on measuring poverty as a causal factor. Like, Khan and Islam (2013) examined the relationship between poverty and educational attainment. This study has highlighted spatial variations in education facilities by identifying developed and lagging regions in the country.

The relationship between infant mortality and poverty (Turner et al., 2020) has been found that the infant mortality rate is high in the least poor region. Another study proved that the remarkable increase in child mortality excessively impacted the most unfortunate region of the nation, leaving the more well-off regions unaffected (Taylor-Robinson et al., 2019). Nevertheless, poverty is an indicator of infant mortality. Like, most newborn fatalities were attributable to poor living conditions in households, predominantly in urban areas (Peña et al., 2000). Moreover, the life expectancy and infant mortality rates connect with Bangladesh's poverty (Sen & Acharya, 1997). Most studies on infant mortality are considered, as noted, one of the primary measures of a country's economic performance and social development (Arriagada, 2006; Schirnding, 2002). There was a positive, moderate, statistically significant relationship between child mortality and poverty levels. However, the degree of association between the two phenomena also weakened significantly during the period that was analyzed (Medina & Arevalo, 2015).

Thus, the conceptual framework presented in figure no. 01 drawn for this study where four socio-demographic factors such as Life Expectancy Rate, Population Growth Rate, Literacy Rate, and Infant

Mortality Rate are considered interconnected with Bangladesh's Poverty Rate. Here, Life expectancy is defined as an infant is expected to live by the number of years. It measures the overall quality of people in the country. The population growth rate is the average annual percent change (either positive or negative) in a country's population over time, deriving from a balance between migrants entering and departing a nation and if there are more births than deaths. Along these lines, literacy is demarcated as employing written and printed information connected to many situations, as the "capacity to recognize, comprehend, translate, generate, share, and perform". Finally, infant mortality is the number of newborns below one year old who passed away in a particular year for every 1,000 live births that same year. This statistic includes the death rate and male and female fatalities by sex.

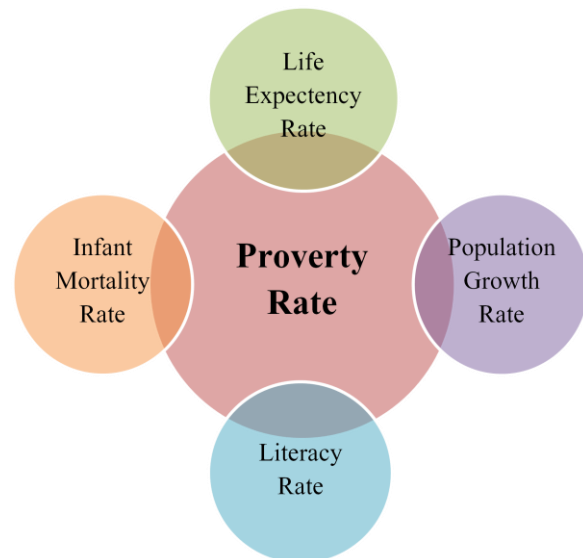


Figure 1. The Conceptual Model
Source: Authors Compilation

METHODS

A descriptive research design is followed due to the nature of the study. A descriptive study approach offers a high level of validity for the relationship between socio-demographic factors. Thus, a quantitative research strategy was pursued to get the findings. This study looks at quantitative panel analysis methods that work well when a researcher estimates factors that affect changes in continuous outcomes (Johnson, 1995).

This study has taken panel data from different years of five variables. For this purpose, the data were collected from the General Economic

Division, Bangladesh Bureau of Statistics. The data collection year chosen for this study is 2007-2019. Incorporating panel data has the benefit of providing more insights into the study. Reducing the bias from missing variables is a key reason to use panel data analysis (Wooldridge, 2006).

RESULTS AND DISCUSSION

Initially, the yearly scores of the five variables are presented in table 1 from which the mentioned statistics below are performed to infer the overall scenario in Bangladesh. This study's findings provided statistical facts for numerically investigating the stated present situation.

Table 1. Status of Socio-Economic Factors

Year	Life Expectancy Rate (Year)	Population Growth Rate (%)	Literacy Rate (%)	Infant Mortality Rate (per thousand live birth)	Poverty Rate (%)
2007	66.6	1.47	56.1	43.0	36.8
2008	66.8	1.45	55.8	41.0	35.1
2009	67.2	1.36	56.7	39.0	33.4
2010	67.7	1.36	56.8	36.0	31.5
2011	69.0	1.37	55.8	35.0	29.9
2012	69.4	1.36	58.8	33.0	28.5
2013	70.4	1.37	57.2	31.0	27.2
2014	70.7	1.37	58.6	30.0	26.0
2015	70.9	1.37	63.6	29.0	24.8
2016	71.6	1.36	71.0	28.0	24.3
2017	72.0	1.34	72.3	24.0	23.1
2018	72.3	1.37	73.2	22.0	21.8
2019	72.6	1.37	74.4	21.0	20.5

Source: General Economic Division, Bangladesh Bureau of Statistics (2007-2019)

Trend Line is drawn using Ms Excel and Pearson Correlation Test carried out using SPSS vs. 22 to analyze the interconnection among the study variables. The results were summarized and interpreted in tabular form. Therefore, it revealed the pragmatic relationship among Life Expectancy, Population Growth, Literacy, Infant Mortality, and Poverty in the Bangladesh economy. Moreover, the panel data in the table considered both rural and

urban areas' status of BBS listed 13 consecutive years. But, both urban and rural regions had not equal rates of progress or declination.

There are several ways to analyze data based on the data type and the variable's scale. Thus, the Univariate Analysis, such as the Trend Line and Coefficient of Correlation Test, was completed to reach the study objective.

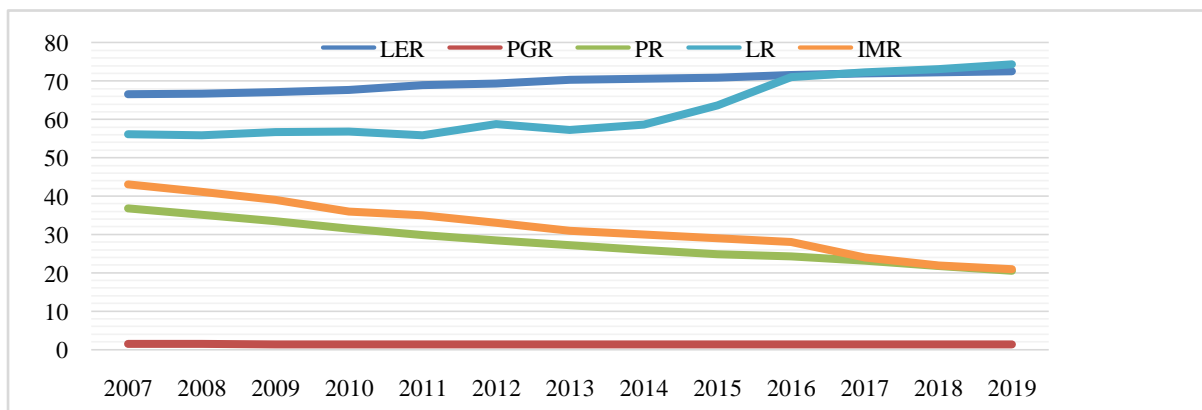


Figure 2. Trend Line

Source: Based on table 1

Figure 2 demonstrated that the Literacy Rate increased, and the Life Expectancy Rates stood at 56.1 percent and 66.6 years respectively in 2007 and slightly increased to 74.4 percent and 72.6 years respectively in 2019 in Bangladesh. But, the Poverty Rates and Infant Mortality Rates stood at 36.8 percent and 43 percent (per thousand) respectively in 2007 and dropped to over one-half 20.5 percent and reduced by half 21 percent (per thousand) respectively in the year 2019. Within the same time frame, not much was changed in the case of Population Growth Rates in Bangladesh.

Table 2. Correlation Test

		Poverty Rate
LER	Pearson Correlation	-0.990**
	Sig. (2-tailed)	0.000
PGR	Pearson Correlation	0.668*
	Sig. (2-tailed)	0.013
LR	Pearson Correlation	-0.850**
	Sig. (2-tailed)	0.000
IMR	Pearson Correlation	0.991**
	Sig. (2-tailed)	0.000
*. Correlation is significant at the 0.05 level (2-tailed).		
**. Correlation is significant at the 0.01 level (2-tailed).		

Source: Based on table 1

The correlation between Life Expectancy, Population Growth, Literacy, Infant Mortality, and Poverty Rate in Bangladesh are shown in table no-02. There is found to be a negative relationship between Life Expectancy and Poverty as well as Literacy and Poverty, which are -0.990 and -0.850 respectively, and both are significant statistically. The above results indicated that a 1 percent increase in LER will decrease the PR by 0.990 percent, and an increase of 1 percent in LR will decrease the PR by .850percent. Furthermore, Population Growth is correlated to Poverty, which is 0.668 and significant statistically. Likewise, the Infant Mortality Rate is associated with Poverty, which is 0.991 at the significance level of 0.000. The outcomes implied that a 1 percent increase in PGR will increase the PR by 0.668 percent, and a 1 percent increase in IMR will also increase the PR by 0.991 percent. In other words, the infant mortality rate increases due to the increasing poverty rate in Bangladesh. These results concluded that the progressive socio-economic factors such as Population Growth Rate and Infant Mortality Rate were significantly

accountable for the Poverty Rate of Bangladesh from an economic point of view.

CONCLUSION

Pieces of evidence exhibited that the poverty rate, from 2007 to 2019, seems to be somewhat gradually lower. A plausible explanation for the decrease in the real value of the PR is provided by our analysis of the relationship between some socio-economic factors and the poverty rate in Bangladesh. The analysis also showed that population growth and infant mortality predict Bangladesh's poverty. Contrarily, LER and LR does change poverty but do not precisely cause Poverty in Bangladesh. Therefore, it is proved that life expectancy and literate people are not the solutions for reducing Poverty in Bangladesh. For instance, Japan has a life expectancy of 84.5 years (2nd Highest), but the poverty rate increased steadily to 16% in 2020. Moreover, Sri Lanka has an adult (age 15+) literacy rate of 92.3%, even though the country is bankrupt and spiraling towards poverty. The poverty rate reduced over some time due to many other economic factors. To address these concerns about making appropriate reasons behind poverty over time, the Government should propose real non-formal education for educating the poor and street children. Furthermore, it is important that interventions to reduce inequalities in income distribution in low-income countries like Bangladesh should ideally be more effective, or at least as effective. This may be very obvious but seldom happens in these settings. Besides, human resources should be appropriately utilized to develop society and country and to eradicate poverty in the economy.

Industrialization in Bangladesh should be developed by properly utilizing resources, which ultimately decreases poverty, although it is impossible to remove poverty very fast. Due to the use of sort period (2007-2019) data, these inferences do not generate an accurate scenario. On the other hand, further study should be conducted using crime, unemployment, poverty, carbon effusion, and any other socio-economic progressive factors as variables to measure the cause of the poverty rate in Bangladesh. Because crime, unemployment, poverty, and carbon effusion are the

too much enlarging obstacle for sustainable development in Bangladesh.

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