Socioeconomic Impact of Rural-Urban Migration in Bangladesh: An Econometric Analysis

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Abstract

The study aims to assess the impact of the rural-urban migration on the socioeconomic development of the migrants' household at Jhenaidah city of Jhenaidah district under Khulna division in Bangladesh. Multi-stage sampling with a simple random sampling technique has been used to choose the samples from the study area. A total of 108 migrant families' data were collected for the years 2012 and 2019 to compare and measure the rural-urban migration's effectiveness on household welfare. Descriptive statistics such as mean, range, standard deviation, t-test, chi-square test, and logit model have been used to fulfill the research objective. The results from descriptive statistics show that more than fifty percent of the respondents migrated to the study area to earn money. Household income, expenditure, savings, and landholding were significantly increased in 2019 as compared to 2012. Occupation, housing, sanitation conditions, and assets of the migrants have also been improved simultaneously. The estimation results of logit model indicate that migrants' livelihood of moving to other places is positively related to the education level of the migrants, which is statistically significant. In contrast, it is negatively associated with the household head's age, earning members, and life satisfaction. The findings of the study will help to understand the reasons behind the rural-urban migration as well as the consequences to the socioeconomic development of the migrants in Bangladesh.

Keywords: Rural-Urban Migration, Household Welfare, Logit Model, Bangladesh

1. Introduction

Rural-urban migration is one of the most prevalent demographic trends throughout the world. In developing countries, it has become a typical event in recent years, where social structures and development patterns are the main reasons behind the migration (Thorat et al., 2011). For many reasons, either willingly or unwillingly, people are forced to migrate from their place of origin. Most of the migrants come

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to the city to pursue diversified income opportunities in the towns (Arthur, 2016). Migration also occurs due to economic, environmental, and demographic crises (Ullah, 2004). The relationships between urbanization, rural-urban migration, and poverty are diverse. The people are fascinated by urban areas to use various economic opportunities and social development (Das et al., 2014). The migrants are also conducive to poverty eradication and human capital development (Awumbila et al., 2014; Nguyen et al., 2015; Uddin et al., 2015). However, migration causes more considerable advantages for the poorest households, which have the highest tendency to migrate (Lagakos et al., 2018).

The choices of rural households to migrate are determined either by push or pull factors (Chen & Coulson, 2002). Among the push-factors, low levels of income, inadequate job opportunities, lack of quality education facilities, unequal distribution of land, unsecured drinking water, housing dissatisfaction, demand for assets, lack of information, and communication gap have been recognized as the crucial determinants of rural-urban migration (Akhter & Bauer, 2014; Fareed et al., 2016). On the other hand, higher job opportunities, higher wages, better livelihood, improved health, education facilities, and low risk of natural disasters are the important pull factors that motivate to migrate.

A discrete selectivity for age, occupation, family member, earning member, marital status, and education are essential factors to influence migration decisions among the socioeconomic groups (Eshetu & Beshir, 2017; Farid et al., 2006). The socioeconomic effects of migration on the households in the place of a destination vary from country to country. A district-level rural-urban migration study reported that most poor and low-income groups migrate to nearby states or cities looking for better income opportunities and in most cases, they manage jobs in urban informal sectors (Mitra & Murayama, 2009). A couple of household-level studies in Vietnam confirm that rural to urban migration increased the household welfare after migration in the urban areas (Cuong & Linh, 2018; Nguyen et al., 2011). In Thailand and China, rural-urban migration offered migrants benefits of income growth and reduced income inequality in the rural areas to ensure sustainable development (Garip, 2014; Qi et al., 2008; Reda et al., 2012; Zhu & Luo, 2010). In Nepal, the risk of migration was higher for the households conquering at least a primary education level, having occupations other than agriculture and labor workers, landless and marginal landholdings, more than one adult male and a family size of more than three members (Aryal, 2005). However, migration not only brings better economic opportunities but also create psychological problems to the migrants. A study on Indonesia provides evidence that migrants who moved alone were highly vulnerable to psychological disorder than those who moved with families (Lu, 2010).

Bangladesh is one of the utmost densely populated countries in the world, with an annual growth rate of 1.32 percent (BBS, 2020). The majority of total population live in rural areas. People (mostly young aged) from rural areas migrate to urban areas hoping to enjoy the economic opportunity and working facilities in urban

areas. Urbanization is one of the dramatic universal community changes of the recent period that has attracted migrants (Lall et al., 2006). The number of migrant residents is growing fast in Bangladesh's urban cultures (Biswas et al., 2019; Mahbubur Rahman et al., 2018). In this case, the urban population is increasing primarily due to rural-urban migration (Adaku, 2013; Buch et al., 2014; Tanle et al., 2020; Zhang & Song, 2012). In Bangladesh, about 66 percent of rural migration is directed towards urban areas, whereas only 10 percent account for rural-rural migration and 24 percent for overseas migration (Afsar, 2003). Rural-urban migration has become a central-parts of the livelihood status of many households in Bangladesh. People also migrate to urban areas to avoid environmental pressure (Raihan et al., 2009; Roy et al., 2015); to combat poverty and unemployment situation or receiving a better livelihood (Rayhan & Grote, 2007); to avail better education and savings opportunities (Sikder & Ballis, 2013); and to enjoy social amenities available in the city (Farhana et al., 2012). However, most migrants coming from rural areas have limited income, and the urban regions persist numerically conquered by the poor, reflecting migration as an income coping approach (Kotikula et al., 2010).

The consequence of rural-urban migration is diverse both from the viewpoint of urban destination and rural origin. Several studies have been conducted to observe the effects of rural-urban migration in the context of Bangladesh. Jahan (2012) concluded that poor and unprivileged migrants often experience a lower standard of living than the city people in Dhaka. Meerza (2010) reported that children of migrants' households in Khulna city often receive less preventative health care and increase the probability of child labor. However, there is an empirical evidence that the majority of the migrants have improved their livelihoods after migrating to Rajshahi city, although most of the time, poor people are excluded from the benefits of economic growth (Farhana et al., 2012). To the best of our knowledge, no studies have focused the Jhenaidah city as the urban destination to analyze the effects of rural-urban migration. In addition, research on determining factors of rural-urban migration, effects of migration on rural households, impacts of migration on households' labor supply and nutrition based on Jhenaidah city have not analyzed in the existing literature. The unavailability of any of the research works on the city demands for the necessity of the current research. Jhenaidah, a growing district-level city in Bangladesh under the Khulna division, has attracted rural people around the city for many purposes. The population in this city is growing fast due to people's migration from surrounding rural areas. The migrants from different economic classes have taken accommodation in Jhenaidah city from time to time. The current research intends to fill the research gap by investigating the socioeconomic impacts of rural-urban migration focusing on the middle-income migrants who migrated to Jhenaidah city. This study was conducted to find out the causes of their migration that pulled or pushed them to migrate the city area leaving behind their origin and to evaluate their current economic and social conditions.

2. Methodology

2.1 Study Area Selection

The study was conducted in Jhenaidah Sadar Upazila (Jhenaidah District) of Bangladesh (Figure 1). It covers 467.75 square km and is situated between 23'26' and 23'36' North latitudes and between 88'57' and 89'20' East longitudes. On the north side, Harinakunda and Shailkupa Upazilas surround it; Kaliganj (Jhenaidah) and Salikha Upazilas are situated on the south. Magura Sadar Upazila is located on the east whereas, Kotchandpur and Chuadanga Sadar Upazilas are on the west side.

Figure 01: Location of Study Area
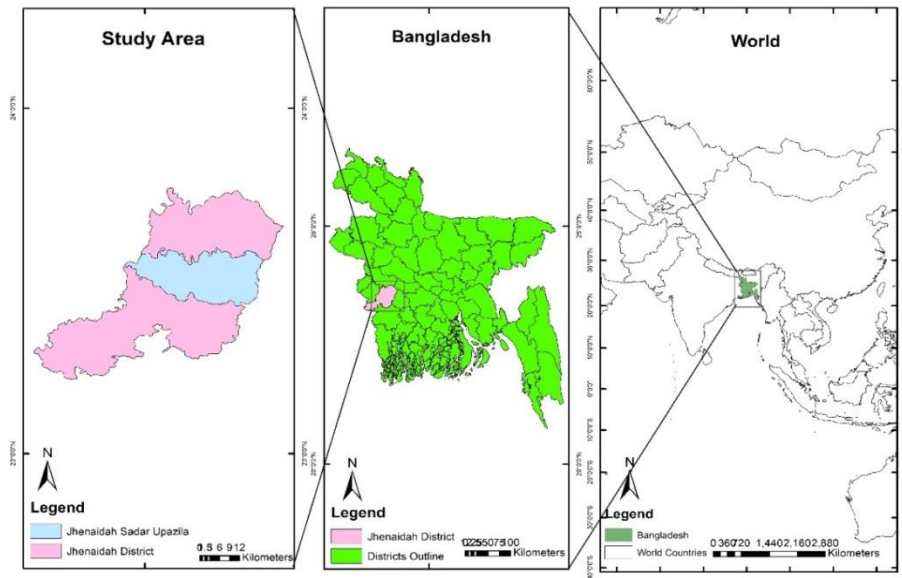
Source: Authors' compilation.

In recent years, many people from rural areas of the Jhenaidah district have been moving to the city for various reasons, such as getting a higher standard of living, job opportunities, higher education, etc. For these reasons, this city is considered the study area to assess the impact of rural-urban migration on household welfare in Bangladesh.

2.2 Selection of Sample

This study considers households who migrate from rural regions to the Jhenaidah city area as the study sample. Several factors influence their migration process including political pressure, economic gain, social conflicts, etc. From the study area, 108 migrant families who migrated to the city before 2012 were selected using the snowball sampling method. The process of selecting migrant's family includes contacting some migrant families who migrated to the city before 2012 and asking them to provide the address of their known families who migrated at the same time. After that, these families were also requested to provide information about other

households who also migrated before 2012. The procedure continued, and a total of 108 families are finally interviewed through this process. After careful investigation, a set of variables were classified for final data collection. Primary data from the respondents was collected using an in-depth face-to-face interview with a pre-tested structured questionnaire. Face-to-face interviews with a pre-tested questionnaire and observation techniques have been used to collect data from the households. The data were collected for the years 2012 and 2019 for the same households to compare and measure rural-urban migration's effectiveness on household welfare within the time frame.

2.3 Data Analysis Methods

Descriptive Statistics

With the purpose of calculating the impact of rural-urban migration, descriptive statistics have been applied to compare the differences in other qualitative indicators used in the study. The independent samples t-test has been used to compare the households' social and economic status before-after situations. This test has been used to estimate the statistical difference of quantitative variables such as household income, expenditure, savings, healthcare costs, and land ownership. Chi-square ($\chi2$) test has been applied to measure the statistical distinction among the groups. All calculations and estimation have been done using computer statistical software Stata 12.

Econometric Analysis

Logit Model

Logit model is a commonly used multidimensional technique for dichotomous outcomes. It is also known as logistic regression or logit regression and is used for decision-making subjects. For new values of analytical variables, the regression predicts the result variable. It can help answer questions about the considered phenomenon because the coefficient of each predictive variable undoubtedly defines the relative involvement of this variable to the outcome variable, automatically controlling the influence of other predictive variables. The logistic regression model studies the effect of many independent variables $X_{1, ..., } X_{n,}$ and the dependent variable Y. The dependent variable Y takes two values, 1 and 0. Code 1 means chosen event occurs, and 0 is an adverse event occurs. This regression analysis also helps distinguish between what factors matter and what factors to avoid, and how they interact. Since the logistics function is adopted by the logistic regression where output values range from 0 and 1, the curve formation is identical to the letter S shape. The analytical form of the logistic function used in logistic regression is defined by Equation (1) (Strzelecka et al., 2020):

$$P_i = E(a + \beta_{xi}) = \frac{1}{1 + e^{-(B_1 + B_2 x_i)}} \dots \qquad (1)$$

Where P_i represents the conditional probability of the dependent variable of adopting the specified value subject to x_i, where x_i is the independent vector

variables, and e is the natural logarithm. The logistic regression model can be expressed by the following relationship in Equation (2):

$$P\left(Y = 1/X_{1,\dots,}X_k\right) \ \ = \frac{e^{a_0+a_1X_1+\cdots a_kX_k}}{1 + e^{a_0+a_1X_1+\cdots a_kX_k}} \dots (2)$$

Here, α_0, α_1, ..., α_k are the model parameters, and X_1, ..., X_k are independent variables that can be both qualitative and quantitative.

This study focuses on evaluating factors influencing the decision to migrate to other areas of the country from Jhenaidah city by the households. The decision to migrate to other places is estimated by the binary logistic regression model (Logit Model). In this approach, the household decision to migrate or not migrate is represented using binary response, i.e., 1 and 0, respectively. In this case, the decision to migrate equals 1, where the opposite answer is equal to 0. Parameters in the logit regression model are calculated using the maximum likelihood estimation (MLE) approach. The logistic regression model (Equation 3) can be explained as follows (Islam et al., 2020; Neog & Buragohain).

$$[Ln\left[\frac{P_i}{1-P_i}\right] = \ \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \varepsilon_i \dots (3)$$

Here, P_i refers to the probability of migrating to other cities, specifically if P_i =1 indicates the decision to migrate, and $P_i = 0$ means staying in the current town. In Equation 2, the household's decision to migrate is the dependent variable in this study, which takes the value one if a household plans to migrate and 0 otherwise. There are seven explanatory variables such as Household Head's Age expressed in years (X_1), Education (X_2) in terms of years of schooling, Marriage (X_3) expressed in dummy (Yes=1, Otherwise =0), Income (X_4) per month in BDT, Land Size (X_5) in decimal, Satisfaction (X_6) expressed in dummy (Yes=1, Otherwise =0) and Earning Member (X_7) in number have been used to explain the dependent variables. In addition, β_0 is the intercept and β_1 to β_7 are coefficients, and ε_i is the error term.

3. Results and Discussion

3.1 Socioeconomic and Demographic Information

Migrants have left their place of origin to take shelter in urban areas to find jobs or maintain their livelihoods. A person's age is generally considered one of the most significant factors affecting migration decisions from rural to urban. Table 1 shows that at the survey time in 2019, the mean value of migrants' age is 44 years old, and the maximum migrants' age is 75 while the minimum age of that is 21 years old. Whereas, in 2012, the average age of migrants is 37 years old. Their level of education influences people's decision to migrate from one place to another. The majority of the respondent has completed the Secondary education level. It has been found that, on average, every family has three members. Each family has at least one earning member (Table 1).

Table 1: Socioeconomic Characteristics of the Respondents

Variables	Measurement Unit	Year	Obs.	Mean	Std. Dev.	Min	Max
Age	In years	2019	108	44.22	11.02	21	75
		2012	108	37.36	10.97	14	68
Education	Years of schooling	2019	108	9.5	4.66	2	17
		2012	108	9.31	4.50	2	16
Marriage	Dummy (Yes=1, O=Otherwise)	2019	108	0.97	0.60	0	4
		2012	108	0.66	0.47	0	1
Family Member	In numbers	2019	108	3.69	1.23	1	7
		2012	108	3.53	1.54	1	8
Earning Member	In numbers	2019	108	1.33	0.53	1	3
		2012	108	1.11	0.70	0	4

Source: Authors' compilation based on the field survey.

3.2 Purpose of Rural-Urban Migration

Migrants moved to city areas for various reasons: to enjoy a better livelihood, earn money, achieve higher study, etc. (Ebrahim et al., 2010; Reda et al., 2012). In this research, Figure 2 shows that more than 50 percent of migrants come to urban areas to make money. On the other hand, 25 percent of them have relocated to the urban area to pursue higher education from rural areas. Besides, around 20 percent of them shifted to the city to enjoy a higher living standard.

Figure 2: Purpose of Migration from Rural to the Urban Area
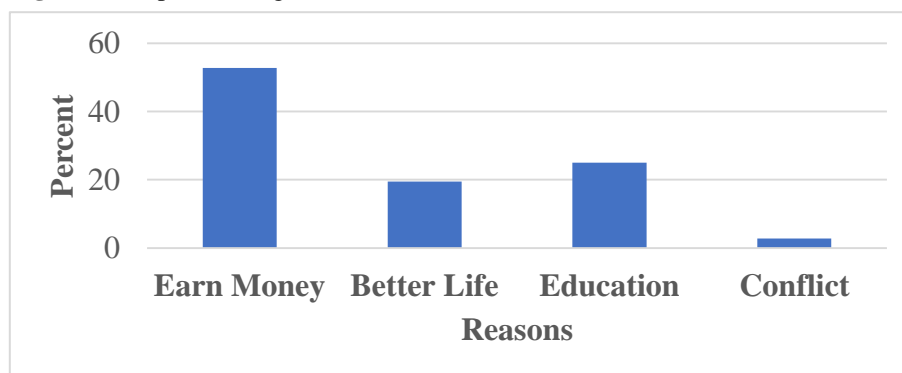
Source: Authors' compilation based on the field survey.

3.3 Economic Condition Changes in Migrant Households

Migration from rural areas to urban areas is one way to get higher income opportunities for rural households (Howell, 2017). Though, the income earned by migrants indicates that their economic capability after migration affects their

earning potential. The change in the financial condition of migrant households' who came to the city after 2012 from nearby villages has been presented in Table 2. The survey data states that migrant families earned almost BDT 8,000 per month on average in 2012, whereas the average household income level was BDT 19,000 per month in 2019. The mean difference in income level is nearly BDT 11,000 a month, and this estimate is statistically significant at a 1 percent level. This result shows that income of the migrated household is increased after migration which is similar to findings (Reda et al., 2012; Uddin & Firoj, 2013).

Table 2: Changes in Economic Conditions of the Migrants

Variables	Year	Obs.	Mean	Std. Dev.	Mean difference	t-value
Household Income level (per month)	2019	108	19,722.22	12,812.69	11,097.22	12.56*
	2012	108	8,625	6,603.29		
Household Expenditure level (last months)	2019	108	14,222.22	6,468.23	6,333.33	17.55*
	2012	108	7,888.89	5,236.61		
Household Healthcare Cost (per 3 months)	2019	108	2,758.33	1,750.47	1,508.33	14.35*
	2012	108	1,250	1,042.06		
Land Size (per decimal)	2019	108	2.86	2.89	0.84	5.92*
	2012	108	2.01	3.10		
Savings (per month)	2019	108	5,500	7,030.64	4,763.89	7.40*
	2012	108	736.11	2,004.04		

Note: *= Significant at 1% percent level.

Source: Authors' Compilation.

Table 2 also indicates that on average, the volume of landholding, monthly household expenditure, and savings of the household had increased from 2012 to 2019, and it is significant at 1 percent level. This study indicated that the mean difference in the respondent's household expenditure is above BDT 6,000 per month. This indicates the positive effect of rural-urban migration on the expenditure level of the migrating households and the similar outcomes are also reported by the findings of Nguyen et al. (2017). The mean difference amount of household savings has been reached nearly BDT 5,000 per month. The land size of the respondents in two time periods on average is almost the same. The average expenditure on health care costs in recent times was increased in 2019, while the mean difference in household healthcare cost is BDT 1,500 per three months of the respondents.

3.4 Decisions to migrate permanently to other parts of the country

The survey findings show that among the migrants' households, 93 percent of them have no willingness to move from the city. Also, 90 percent of them reported being satisfied with the current living conditions of the city. This section attempts to explore the factors affecting the migration decision by applying the logit regression model. The logistic model results presented in Table 3 indicate that the age and education of the household's head, earning member, and satisfaction play a significant role in deciding to move to other parts of the country parentally. The probability of migrants moving to another place is negatively related to the migrants' household age, which is statistically significant at 5 percent level. So, the increasing age of the household head decreases the probability of moving to other places. The estimation also showed that an increase in schooling year leads to an increased livelihood of shifting to different areas for better opportunities. Wu (2006) also outlined that highly educated people are motivated to move areas where better opportunities are available. Another essential factor that determines the decision to move to other places is the family members' earning capacity. The number of respondents' family members is negative to increase the probability of moving to another location. If a family has additional earning members, they tend to stay in the area with no tendency to leave.

On the other hand, it has been found that households' satisfaction is negatively related to the probability of moving to other places. This result is expected in the sense that when a family finds this place suitable for loving and satisfied to live here, they will not think of leaving the area. A similar outcome is also reported by Wu (2004). The other factors are found to be statistically insignificant, although they have expected signs.

Table 3: Determinants of Decision to Migrate Other Places

Variables	Logit Model			
	Coef.	Robust S.E.	P-value	Marginal Effect
Age (X_1)	-0.106	0.048	0.03	-0.004**
Education (X_2)	0.292	0.085	0.00	0.012*
Marriage (X_3)	0.073	0.249	0.77	0.003
Income (X_4)	0.000	0.000	0.16	1.58e-06
Land Size (X_5)	-0.187	0.162	0.25	-0.007
Satisfaction (X_6)	-5.286	1.209	0.00	-0.225*
Earning Member (X_7)	-1.528	0.494	0.00	-0.065*
Constant	5.049	2.119	0.01	
Log pseudolikelihood	- 28.12			
Wald chi-square	29.17			
Prob > chi2	0.00			
Observation	108			

Note: * = significant at 1 percent level, ** = significant at 5 percent level

Source: Authors' Compilation.

Table 4: Changes in Financial Conditions of Migrants from 2012 to 2019

Variables	Year 2019 (%)	Year 2012 (%)	Test Statistics[a] (p value)
Occupation			
Government Job	16.67	11.11	
Private Job	36.11	30.56	$\chi2 = 119.18$;
Business	44.44	33.33	($p = 0.00$)
Unemployment	2.78	25.00	
Housing Condition			
Concrete	66.67	22.22	$\chi2 = 15.43$;
Tin Shade	33.33	77.78	($p = 0.00$)
Sanitation Condition			
Concrete	72.22	30.56	$\chi2 = 18.28$;
Tin Shade	27.78	69.44	($p = 0.00$)
Access to Bank Account			
Yes	75.00	36.11	$\chi2 = 20.35$;
No	25.00	63.89	($p = 0.00$)
Loan Taken			
Yes	44.44	27.78	$\chi2 = 21.27$;
No	55.56	72.22	($p = 0.00$)
House Ownership			
Rented	22.22	50.00	$\chi2 = 30.86$;
Own House	77.78	50.00	($p = 0.00$)
Assets Holding			
Furniture			
Yes	94.44	38.89	$\chi2 = 4.04$;
No	5.56	61.11	($p = 0.04$)
Jewelry			
Yes	75.00	27.78	$\chi2 = 13.85$;
No	25.00	72.22	($p = 0.00$)
Vehicles			
Yes	77.78	33.33	$\chi2 = 6.03$;
No	22.22	66.67	($p = 0.01$)
Shop			
Yes	38.89	25.00	$\chi2 = 56.57$;
No	61.11	75.00	($p = 0.00$)
Business			
Yes	41.67	25.00	$\chi2 = 33.02$;
No	58.33	75.00	($p = 0.00$)

[a]Statistical results are provided from the independent samples Chi-square test.

Source: Authors' Compilation.

The study assesses the changes in the financial conditions of the migrants after moving from rural areas. A Pearson Chi-square ($\chi2$) test has been used to test whether there are any changes in the period's financial conditions. The estimated results from the Chi-square ($\chi2$) presented in Table 4 shows that government job

holders and businesses increased in 2019 compared with 2012, which is significant at 1 percent level. Also, the number of unemployed respondents in 2012 was 25 percent. In contrast, the present unemployment rate is meager, and work involvement increased in private jobs in 2019. The initial employment status of the migrants has been positively changed after migration to urban areas and this result is consistent with the findings of Haque and Islam (2012). The estimated results also found that the migrants' housing and sanitation conditions after migration to the study area improved in 2019, and it is statistically significant. Chi-square (χ^2) tests assessed for other categorical variables such as access to the bank account, taking a loan, house ownership, and asset holding indicate that migrants availed the increased number of bank accounts and access the loan facility after the migration (Ishtiaque & Ullah, 2013; Ullah, 2004). Besides, the number of house owners increased in the following periods. More importantly, household assets, including furniture, jewelry, vehicle, shop, and business, increased compared to the initial migration time and this findings is also supported by the findings of Adri and Simon (2018). All the changes are statistically significant, providing strong evidence of improving migrants' living standards after migrating to the urban area.

4. Concluding Remarks

Rural-urban migration is one of the accelerators of the urbanization process in developing countries. For many reasons, people migrate from rural to urban areas either for push factors or pull factors. In the present study, it has been seen that most of the migrants moved to the city for pull factors such as earning money, leading high quality of life, or achieving higher studies. After migrating to the destination place, the migrants reported that they are satisfied with the purpose they moved to accomplish. Even most of them remained in the area permanently. The statistical analysis results provided strong evidence that the migrations' overall social and economic well-being have improved compared to the initial migration period. The study results also indicated that pull factors regarding rural-urban migration are associated with positive changes in the migrants' living standard. The findings of this research provide important and relevant policy implication for better understanding of the socioeconomic effects of rural-urban migration on migrating people in urban areas of Bangladesh. The outcomes of the study also render insightful knowledge for the policy makers to adopt and implement sustainable urban development plans for future generations.

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