

SOCIO-ECONOMIC DETERMINANTS OF INTERNAL MIGRATION IN GILGIT BALTISTAN AN EMPIRICAL ANALYSIS

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ABSTRACT

This study investigates the socio-economic factors influencing internal migration in Gilgit Baltistan, Pakistan. Using primary data from 76 households, the research employs both descriptive statistics and econometric modeling to analyze the determinants of migration. Key variables include household infrastructure, education, employment status, and land ownership. The findings reveal that infrastructure deficiencies, particularly frequent power outages (load shedding), significantly drive migration decisions. The presence of a concrete house negatively correlates with migration, suggesting that better housing conditions deter movement. Surprisingly, other factors such as family size and working status did not show a statistically significant impact. The model explains approximately 48% of the variance in migration status, indicating the relevance of the included variables while also pointing to the need for further exploration of other potential influences. These insights provide a foundation for policy interventions aimed at improving living conditions and addressing migration drivers in the region.

Keywords: Internal Migration, Socio-economic factors, Housing conditions, Infrastructure, Load shedding

I. INTRODUCTION

Human migration has become an international phenomenon over the years and a lot of people has left their places to find their luck somewhere else (Joseph, 1988). The migration of the masses from one particular area to another is not new, it is happening since ages. Human migration means when a person leaves their place permanently and starts to live somewhere else (Manning & Trimmer, 2020). Everybody wants to get better over time and for that they look for opportunities through which they can improve their living standard. Normally all around the world people migrates from rural areas to urban areas of the country with a hope to find better facilities and further opportunities so that they can live the life of their own by fulfilling their wants and needs. In rural areas, most of the population relies on agriculture industry and the situation of the

infrastructure of the education, health, roads, connectivity are not that good (McCartney & Brunner, 2021). These are the kind of things which are necessities and it's the basic right of the public to get all these facilities. Not just these facilities which attracts the public to move to urban areas of the country, but with the development of industrial sector, there are wide variety of job opportunities are creating, this gives them the financial security and provides a platform to achieve their dreams. Agriculture sector is the traditional part of the economy and most of the population is directly or indirectly linked to this sector, but to achieve higher growth and eventually development, the migration of rural population towards urban areas is necessary and part of the development process especially for the developing countries.

This study tries to investigate the factors that forces the peoples to move from Gilgit Baltistan, Pakistan to other parts of the country. The study will focus on understanding the determinants of internal migration in Gilgit Baltistan and the impact of migration on income and expenditure. These questions will guide the research and help in achieving the objectives of the study. It addresses the socio-economic factors influencing internal migration in Gilgit Baltistan, which has not been extensively researched before. By identifying these factors, the study can provide valuable insights about the living standards in the region. The study focuses specifically on Gilgit Baltistan and analyzes the factors behind internal migration within the region. The sample size is limited to 76 respondents, which may limit the generalizability of the findings. Additionally, the study relies on self-reported data collected through questionnaires, which may be subject to bias and limitations in recall. However, despite these limitations, the study provides valuable insights into the impact of migration on living standards.

After introduction, the rest of paper is organized as follows. Section II presents literature review, section III explains the methodology, followed by results and discussion. At the end section V provides conclusion and recommendations.

II. Literature Review

Migration is a global phenomenon that has been occurring for an extended period. People relocate to different parts of the country either by choice or due to various factors compelling them to move. When individuals move within a country willingly, it is termed internal migration; otherwise, they are referred to as internally displaced persons (IOM, n.d.). Kuhn (2015) Indicates that internal migration in less developed countries (LDCs), similar to more developed countries (MDCs), is advantageous for both development and social transformation, although the ways in which it exerts influence are intricate. In the developing countries like Pakistan where the economy is volatile and there always remains some kind of uncertainty, internal migration can respond to the shocks through in or out migration rates (Monras, 2018). This indicates that, despite the challenges faced by migrant families, there are economic advantages associated with internal migration.

Internal migration, the movement of people within a country, is shaped by a range of socio-economic

factors that profoundly influence individuals' decisions to relocate. Among these factors, economic considerations play a pivotal role (Ibáñez et al., n.d.). Employment opportunities represent a primary driver of internal migration, as individuals often seek regions with promising job markets and career prospects (Alam & Mamun, 2022). Disparities in income levels also contribute significantly, with people drawn to areas offering better earning potential and improved living standards. Additionally, the overall economic development of a region serves as a compelling factor influencing internal migration patterns. Regions experiencing robust economic growth tend to attract individuals in search of better opportunities, creating a dynamic interplay between economic factors and internal migration trends (Basso & Peri, 2020). Understanding the intricate relationship between these economic factors is essential for policymakers and researchers seeking to comprehend and address the dynamics of internal migration within a socio-economic context.

Social factors significantly shape internal migration patterns, reflecting the broader impact of education, healthcare, and social networks on individuals' decisions to move within a country. Access to education opportunities is a compelling driver, as people often migrate to areas with better educational facilities for themselves or their families. Studies consistently show a positive correlation between educational prospects and internal migration (Aydemir et al., 2022; Sadeghi et al., 2021). Similarly, the availability and quality of healthcare facilities in specific regions play a crucial role. Individuals may relocate to areas with better healthcare infrastructure to ensure improved well-being and access to medical services. Moreover, social networks exert a profound influence, with individuals often migrating to locations where they have established connections, seeking support systems and a sense of community (McAreavey, 2017). Social factors, therefore, not only contribute to the decision-making process but also impact the overall well-being of individuals in their chosen destination. Recognizing these social dynamics is crucial for policymakers aiming to create environments that attract and retain

Demographic and environmental factors are integral components influencing internal migration patterns. Demographically, age and gender dynamics, as well as family structure, contribute significantly to

migration trends. For instance, young adults often seek better opportunities, leading to higher migration rates among this demographic group (Ebimngbo et al., 2022). Additionally, family structures, such as the presence of dependents or elderly members, influence migration decisions as individuals consider the well-being of their families during relocation (Albert & Coimbra, 2017). Population growth also plays a role, as areas experiencing rapid population expansion may witness increased internal migration, placing pressure on resources and services (Clark, 2020). Environmental factors, on the other hand, are crucial determinants, particularly in the context of natural disasters and climate change. Regions prone to natural disasters may experience displacement, as evidenced by studies linking internal migration to events like floods and high temperature (Berlemann & Steinhardt, 2017). Similarly, climate change influences migration patterns through its impact on living conditions, agricultural practices, and water availability (Falco et al., 2019). Access to natural resources further contributes to migration trends, with individuals often moving in search of regions offering sustainable environmental conditions and resource abundance. Understanding the interplay of these demographic and environmental factors is vital for comprehensive insights into the complexities of internal migration.

Within the realm of understanding internal migration, various theoretical frameworks offer insights into the motivations behind individuals' decisions to move. One such framework is the neoclassical economics theory, which posits that migration is largely driven by rational decision-making influenced by economic factors (Sjaastad, 1962). Individuals are drawn to locations with better job opportunities and higher wages, while simultaneously considering the cost of living and potential income disparities in their current location. In contrast, the Push-Pull theory provides a more nuanced perspective, acknowledging that migration is often a response to both unfavorable conditions pushing individuals away from their current location and attractive factors pulling them towards new destinations (Lee, 1966). This theory recognizes the dynamic interplay between negative factors, such as economic challenges or environmental hazards, pushing individuals to migrate, and positive factors, such as employment opportunities or improved living conditions, pulling them to specific destinations. By employing these theoretical

frameworks, researchers can better comprehend the multifaceted nature of internal migration, encompassing economic rationality and the nuanced interplay of push and pull factors.

The existing literature reveals two notable gaps. First, there's a scarcity of studies focusing on internal migration in Gilgit, Pakistan, indicating a lack of research exploring the migration patterns and dynamics specific to this region. Second, there is limited research addressing how migration influences living standards. Understanding the impact of migration on the well-being and living conditions of individuals is crucial, yet current research in this area is restricted, highlighting the need for more comprehensive investigations into this aspect of internal migration. Closing these gaps would contribute significantly to a more holistic understanding of migration trends and their implications.

III. Research Methodology

In the examination of migration factors in Gilgit Baltistan, Pakistan, a direct method to quantify the number of individuals crossing borders was initially considered. However, due to data availability challenges, primary data collection through questionnaires became the chosen approach, involving a sample size of 76 respondents. The questionnaire covered a diverse set of inquiries to understand the motivations behind migration and assess the living standards of the people. The sampling strategy employed was purposive, targeting residents or migrants of Gilgit Baltistan. The study's focus on internal migration involved primary data from a sample size of 76, with the mean of migrant households as the dependent variable and the mean difference of variables as the independent variable. To evaluate whether migration positively impacts living standards, a T-test assessed the significance of variables, followed by the application of Ordinary Least Square (OLS) with migrant households as the dependent variable and mean difference of variables as the independent variable in the econometric model:

$$\text{Migration} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$$

Here, Migration is binary (Yes=1, No=0),

β_0 represents the constant,

and β_1 , β_2 , β_3 represent the mean differences of variables. The error term is denoted by μ .

Descriptive Statistics

Table 1.

Variables	Mean	Std. Dev.	Kurtosis	Probability	Sum Sq. Dev.
Load Shedding	0.658	0.477567	1.443077	0.001302	17.10526
Education	14.066	3.991109	7.506963	0	1194.671
Disease	0.579	0.497009	1.102273	0.001747	18.52632
Electricity	0.289	0.456532	1.861953	0.000548	15.63158
Gender	0.276	0.450146	2.000866	0.000364	15.19737
Home	0.316	0.467918	1.628205	0.000951	16.42105
Concrete House	0.303	0.46245	1.73831	0.000749	16.03947
Internet	0.355	0.481773	1.365835	0.001437	17.40789
Land	0.289	0.456532	1.861953	0.000548	15.63158
Migrant Location	0.539	0.501751	1.025087	0.001774	18.88158
Origin	0.763	0.42797	2.532567	0.000043	13.73684
Sectarianism	0.342	0.477567	1.443077	0.001302	17.10526
Running Water	1.671	1.330545	1.377366	0.01198	132.7763
Married	0.171	0.379057	4.052503	0	10.77632
Single	0.658	0.477567	1.443077	0.001302	17.10526
Net Expense	59183.22	71426.27	24.83963	0	3.83E+11
Education	14.066	3.991109	7.506963	0	1194.671

The table 1. summarizes the characteristics of the data collected to study migration patterns in Gilgit Baltistan. It shows average values (mean) for various factors like load shedding (0.658), education (14.07 years), and disease prevalence (0.579). Standard deviation (Std. Dev.) indicates the spread of the data around the mean, with education showing the highest variation (3.99 years). Interestingly, some variables are binary (0 or 1), signifying yes/no answers, like having a concrete house (0.303) or running water

(1.671). The p-value (Probability) less than 0.05 for most variables suggests a statistically significant difference from a random distribution. Notably, net expense has a very high mean (59183.22) and a large standard deviation, indicating significant variation in income levels. Overall, this data offers a glimpse into the socio-economic factors potentially influencing migration patterns in the region.

IV. Results and Discussion

Bi Variant Analysis

Table 2. Mean Difference of Migration

Var	Mig (n=76)	Non-Mig (n=76)	Mean Diff	significance
Age	26.47619	24.03636	2.439827	
Sex	0.238095	0.290909	-0.05281	
Family members	6.1	8.745098	-2.6451	***
Education	15	14.50943	0.490566	
Working	0.380952	0.690909	-0.30996	*
House	0.428571	0.254545	0.174026	
Concrete home	0.1	0.407407	-0.30741	***
Internet	0.047619	0.472727	-0.42511	
Load shedding	0.315789	0.830189	-0.5144	***
Land owned	0.55	0.207547	0.342453	*
Monthly nonfood expenditures	10761.91	9996.154	765.7509	
Transportation expenditures	1976.191	3716.981	-1740.79	

Healthcare expenditures	3000	2820.37	179.6296
Educational expenses	36444.44	38361.59	-1917.14
Any other expenses	6714.286	1857.143	4857.143

*, **, *** indicates 1 %, 5%, and 10 % level respectively.

Prepared by author

The table provides a comparative analysis of the characteristics of migrants and non-migrants in Gilgit Baltistan. The data suggests that age, family size, property ownership, infrastructure, land ownership, expenditures, employment status, and other demographic factors significantly influence migration decisions.

Migrants are generally older and have smaller families compared to non-migrants. This could be due to various reasons such as the need for stability in retirement or the desire to provide better opportunities for children. The lower ownership of concrete houses among migrants might be attributed to the sale of properties before migration. However, migrants experience less frequent load shedding, which could be an incentive for them to move. Additionally, they are more likely to own land, possibly for livelihood purposes.

In terms of expenditures, migrants spend less on transportation, which could be due to changes in commute patterns after migration. However, the category "Any other expenses" is significantly higher

for migrants, which warrants further investigation. It's important to note that migrants are less likely to be employed compared to non-migrants, which could be due to various factors such as lack of job opportunities or reluctance to leave their homes.

The analysis is based on a relatively small sample size, which limits the generalizability of the findings. Furthermore, the meaning of the "sex" and "working" variables needs clarification. The table shows correlations, not causation, and further research is needed to understand why these factors differ between migrants and non-migrants.

Overall, the results offer valuable insights into potential influences on migration decisions in Gilgit Baltistan. By understanding these trends, policymakers can develop targeted interventions to address the needs of migrants and non-migrants alike. With a larger sample size, clearer variable definitions, and further analysis, we can gain a more comprehensive understanding of these trends and inform decision-making processes in the region.

Multivariate analysis

Table 3

Variables	Coefficients	Std. Error	T-stats	Level of sig.	Prob.
C	0.337	0.178	1.884	***	0.064
Family members	-0.016	0.014	-1.131	***	0.262
working	0.170	0.109	1.548	***	0.126
Concrete house	-0.234	0.113	-2.075	**	0.042
Load shedding	0.598	0.117	5.101	*	0.000
Land owned	-0.130	0.120	-1.081	***	0.283
R-squared	0.367090				
Adjusted R-squared	0.318405				
F-statistics	7.54				
Prob(F-stat.)	0.000012				

*, **, *** indicates 1 %, 5%, and 10 % significance level respectively.

Prepared by author

The statistical analysis of the sample size of 76 households in Gilgit Baltistan reveals several significant relationships between independent variables and the dependent variable, which is

migrant household status. The t-statistics for family members (-1.131) and working status (1.548) indicate that these variables are significant at the 10% level, suggesting that there is a notable

difference in family size and employment status between migrant and non-migrant households. This could imply that larger families or those with more working members are more likely to migrate, potentially seeking better economic opportunities for their children.

Furthermore, the t-statistic for load shedding (5.101) demonstrates significance at the 1% level, indicating a strong association with migration. The probability values less than 0.05 for load shedding and concrete housing also highlight their statistical significance. These findings suggest that infrastructure deficiencies, such as frequent power outages, may be driving factors for migration. Additionally, the ownership of land by migrants compared to non-migrants appears to be a significant factor, possibly reflecting differences in economic stability or the need for land as a resource in the region.

The R-squared value of 0.3601 indicates that approximately 36% of the variance in migration

status can be explained by the independent variables considered in this study. This leaves a substantial portion of the variance unexplained, suggesting that other factors not included in this model may also play a role in household migration decisions. The P value related to the F-statistic being less than 0.05 confirms that at least one of the independent variables is significantly related to the dependent variable, reinforcing the notion that factors such as family structure, employment status, infrastructure quality, and land ownership are critical considerations for households when making migration decisions in Gilgit Baltistan. These findings underscore the complex interplay of social, economic, and infrastructural factors influencing migration patterns within the region, highlighting potential areas for policy interventions aimed at addressing the underlying causes of migration and improving the livelihoods of residents in Gilgit Baltistan.

Multivariate analysis

Table 4

Variable	Coefficient	Std. Error	t-Statistic	Level of sig.	Prob.
Constant	1.240718	0.639646	1.939694	*	0.0572
Family members	-0.019160	0.014043	-1.364378	*	0.1776
Working	0.090912	0.124028	0.732996		0.4665
Concrete house	-0.281994	0.112742	-2.501221	**	0.0152
Load shedding	0.565437	0.113298	4.990725	**	0.0000
Land owned	-0.105184	0.119105	-0.883116		0.3808
Age	-0.010621	0.011165	-0.951254		0.3454
Sex	-0.195111	0.132012	-1.477980	*	0.1447
R-squared	0.481870	Mean dependent var			0.464789
Adjusted R-squared	0.385269	S.D. dependent var			0.502309
F-statistic	4.988269	Durbin-Watson stat			1.985438
Prob(F-statistic)	0.000019				

*, **, *** indicates 1 %, 5%, and 10 % significance level respectively.

Prepared by author

The multivariate analysis presented here provides a more nuanced understanding of the factors influencing household migration in Gilgit Baltistan. The model, which now includes additional variables such as age and sex, aims to explain the variation in migration status based on a range of socio-economic and demographic factors.

The coefficients in the model indicate the change in the dependent variable (migrant household status) for each unit change in the independent variables, holding all other variables constant. Notably, the presence of a concrete house (coefficient: -0.281994)

and load shedding (coefficient: 0.565437) are statistically significant at the 5% level, with load shedding being particularly impactful, suggesting that infrastructure deficiencies play a crucial role in migration decisions. This is further underscored by the high level of significance associated with load shedding (Prob. < 0.0000), indicating that frequent power outages are a major concern for households in the region.

Other variables such as family members, working status, land owned, age, and sex do not show statistical significance at conventional levels,

implying that these factors may not be as influential in migration decisions within this specific context. However, it is worth noting that the sign of the coefficient for 'family members' suggests that larger families might be less likely to migrate, potentially due to deeper roots in the community or greater support networks.

The R-squared value of 0.481870 indicates that approximately 48% of the variance in migration status can be explained by the independent variables included in the model. This is an improvement from the previous model, suggesting that the additional variables have enhanced the explanatory power of the analysis. The adjusted R-squared value of 0.385269 takes into account the number of predictors in the model and provides a more conservative estimate of the model's explanatory power.

The F-statistic (4.988269) with a highly significant probability value ($\text{Prob}(F\text{-statistic}) = 0.000019$) confirms that the overall regression model is statistically significant, indicating that at least one of the independent variables is related to the dependent variable. This reinforces the notion that the factors included in the model play a role in household migration decisions in Gilgit Baltistan.

In summary, the multivariate analysis highlights the importance of infrastructure quality, particularly in relation to electricity supply, as a key determinant of migration in Gilgit Baltistan. While other variables such as family structure and employment status do not show significant effects, they still provide valuable context for understanding the complex dynamics of migration in the region. These findings could inform policy interventions aimed at improving living conditions and reducing the need for migration among households in Gilgit Baltistan.

V. Conclusion

This study provides a comprehensive analysis of the factors influencing internal migration in Gilgit Baltistan, utilizing a sample of 76 households. The results underscore the critical role of infrastructure quality, particularly electricity supply, in migration decisions. Load shedding emerged as a highly significant determinant, with households experiencing frequent power outages being more likely to migrate. This finding highlights the urgent need for infrastructure improvements to mitigate migration pressures. The negative correlation between the presence of a concrete house and migration suggests that better housing conditions are

associated with reduced migration propensity. This could be due to the stability and comfort provided by better housing, reducing the need to move. Other factors, such as family size and employment status, did not show significant effects in this study, indicating that these variables might not be as influential in the context of Gilgit Baltistan's migration dynamics.

The adjusted R-squared value of 38.5% indicates that while the model has decent explanatory power, a substantial portion of the variance remains unexplained. This suggests that other unexamined factors, possibly cultural or social, could also play significant roles in migration decisions. Future research should aim to include these aspects to provide a more holistic understanding of migration patterns. The policy implications of this study are clear: addressing infrastructure deficiencies, particularly in electricity supply, can significantly reduce the need for migration. Furthermore, improving housing conditions could also deter migration by providing a sense of stability and security. Policymakers should focus on these areas to improve living standards and reduce migration pressures in Gilgit Baltistan.

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