**EXTENDED ABSTRACT**

# MIGRATION'S SOCIO-ECONOMIC FOOTPRINT: ANALYSING THE EFFECTS ON LEFT-BEHND HOUSEHOLDS IN INDIA THROUGH IHDS

## INTRODUCTION

In India, migration is a significant socio-economic phenomenon, with millions seeking better opportunities both within the country and internationally. As one of the largest sources of international migrants, India has millions of citizens working abroad, especially in the Gulf countries, the United States, and Europe (**McAuliffe & Oucho, 2024**). Domestically, migration from rural to urban areas is substantial, driven largely by economic factors. The Census of India, 2011 reported that there were 139 million internal migrants, highlighting the scale of movement within the country for improved livelihoods (**Census of India, 2011**).

The intricate link between migration and development is particularly important in the context of a developing country like India, since it presents both opportunities and challenges for growth. Migrants contribute to destinations by filling labour shortages, boosting innovation, and supporting aging populations (**Goldin et al., 2018**). Additionally, migration plays a vital role in the development of sending regions. Remittances sent back home by migrants provide an important source of income for families and communities. These funds support household expenditures, improve access to education and healthcare, and stimulate local economies (**Ratha et al., 2011**). Migration as a livelihood strategy provides access to better employment, improves standard of living, and provides economic stability. It is evident that in India, migration significantly contributes to poverty reduction and economic development in rural areas (**Deshingkar & Akter, 2009**).

Recognising the dual impact of migration on both destination and origin, this study focuses on the link between migration and the welfare of left-behind families. By putting more emphasis on internal migration within India, this research aims to provide a detailed understanding of how migration influences household welfare using data from the Indian Human Development Survey (IHDS).

## OBJECTIVES

The major objective of the study is to analyse the impact of migration on household welfare using the Indian Human Development Survey (IHDS) dataset for the periods 2004-05 and 2011-12. The specific objectives of the study are as follows:

1. To analyse the impact of migration on the total household expenditure over time of left behind households.
2. To evaluate the differential impact of migration on various categories of household expenditure, including:
    - Food expenditure
    - Non-food expenditure

- Health/Medical expenditure
- Education expenditure
- Energy expenditure
- Temptation goods expenditure

3. To assess the impact of migration on other socio-economic indicators such as income, assets, outstanding household debt and household education level.
4. To determine the impact of migration on household poverty status.
5. To provide policy recommendations based on the findings to support migrant households and optimize the benefits of migration.

**STUDY DESIGN**

**DATA**

The analysis is based on two rounds of The Indian Human Development Survey (IHDS)2004-05 and 2011-12. The nationally representative, multi-topic survey of Indian households has been conducted in all states and union territories of India. The survey was conducted by the National Council of Applied Economic Research (NCAER) in collaboration with the University of Maryland. It provides detailed information on various aspects of human development including health, education, employment, income, and consumption. The IHDS is particularly valuable for the study as it includes two waves of data collection (2004-05 and 2011-12), allowing for longitudinal analysis. The first round in 2004-05 covered 41,554 households, out of which 83 percent were reinterviewed in the second round. Suitable substitutes were found for the remaining households leading to a sample of 41,554 in the second round. To measure the effect of migration, the study focuses on the households which were interviewed in both the first and second round resulting in a sample of 40,018. Further, out of the total households, the study focusses on a sample of 34,906 households which had no migration in 2004-05.

**RESEARCH METHODS**

The data set does not provide direct information on migration but specifies the number of non-resident members of the households. Households have been created as migrant household if there has been any change in their non-resident member status between the two waves. Thus, migrant households have been defined as those households which had zero non-resident members in wave 1 (2004-05) of the survey but had at least one non-resident member in wave 2 (2011-12). The first round of data comprises of households with zero non-resident members enabling a better understanding of impact of migration on households.

The data set provides information on expenditure for various goods such as rice, wheat, clothing etc. From this information, the consumption of individual goods has been aggregated into broad categories to facilitate analysis. In addition, suitable variables provided by IHDS data have been used to encapsulate the socio-economic impact of migration.

The study uses the Difference-in-Differences (DiD) methodology to estimate the causal impact of migration on household consumption expenditure, assets, income, outstanding household debt and highest education in household. This method is one of the most frequently used methods in impact evaluation studies. Based on a combination of before-after and treatment-control group comparisons, the method has an intuitive appeal and has been widely used in economics, public policy, health research, management, and other fields. In this study, the treatment group consists of households that experienced migration between the two survey waves, while the control group comprises households that had no migration in either wave.

This model assumes the parallel trends assumption, meaning that in the absence of migration, the changes in household consumption expenditure for migrant households would have followed the same trend as those of non-migrant households. This assumption is crucial for the identification strategy and the validity of the Difference-in-Differences (DiD) estimator. The Hausman test validates the choice of fixed effects. The result of the test strongly rejected the null hypothesis that the difference in coefficients between the fixed-effects and the random-effects models is not systematic (P-values of the tests are smaller than 0.01). To better understand the impact of migration on poverty, the analysis continues with a probit regression model. This approach helps in identifying the probability of households falling below the poverty line as influenced by migration patterns, while accounting for certain control variables.

**Econometric results**

Impact of migration on household expenditure

Table 1 elaborates the results of the DiD fixed effects regression on various categories of household expenditure. The interaction term (DiD) capturing the treatment effect of migration shows a significant and positive impact on total household expenditure. This implies that for the treatment group (migrant households), migration leads to 13.5 percent increase in total consumption expenditure compared to the control group (non-migrant households). This increase in household expenditure with migration is well-documented in literature and can be attributed to the increase in remittance income. Migration has been associated with increased living standards of households through higher per capita expenditures in Vietnam (**De Brauw & Harigaya, 2007**).

The results for food expenditure also indicate significant and positive impact over time and for migration. Specifically, there is a 13.1 percent increase in food expenditure among migrant households attributed to migration. This aligns with findings from Indonesia where having at least one migrant in the family increases the composite index of food consumption and enhances the family's food security (**Hasanah, Mendolia, & Yerokhin, 2017**). Similarly, for the category of non-food expenditure, migration shows significant and positive impact on non-food expenditure in migrant households.

Specifically, with migration there is a 14.9 percent increase in non-food expenditure in migrant households.

For expenditure on education, it is seen that migration has a significant but negative impact, decreasing per capita expenditure on education by 57.4 percent. This negative effect of migration on education expenditure in India is important to understand as mostly literature has suggested increase in education expenditure with migration. However, Vietnam presents a similar situation like India, where migration leads to decrease in education expenditure. This can be explained by a co-insurance mechanism by rural households of having migrants as some of these rural household members must stop studying and join the labour force in the place of origin **(Grote & Nguyen, 2017)**.

Table 2 presents interesting results for health expenditure where it is noted that migration has no significant impact on this expenditure category. Although there is literature indicating positive impact on health expenditure by migrant households, the impact of internal migration on this expenditure was negligible in rural China. This was explained by households' allocation of remittances on immediate consumption needs such as food, clothing, and daily necessities **(Démurger & Wang, 2016)**. This trend holds true for India as well, where migration significantly impacts food and non-food expenditure, highlighting Indian households' priority of budget allocation to these categories over others. Further, this pattern is reflected in the expenditure on temptation goods such as entertainment, as migration has no significant impact.

However, it is noted that migration has a significant and positive impact on expenditure on energy requirements by 19.8 percent in migrant households.

**Table 1: Results for DiD fixed effects regression for impact of migration on different expenditure categories.**

| **Variables** | **Per capita monthly total expd (ln)** | **Per capita monthly food expd (ln)** | **Per capita non-food expd (ln)** | **Per capita monthly health expd (ln)** | **Per capita monthly education expd (ln)** | **Per capita monthly energy expd (ln)** | **Per capita monthly temptation good expd (ln)** |
|---|---|---|---|---|---|---|---|
| Post (1=2011-12) | 0.233*** (0.014) | 0.180*** (0.013) | 0.224*** (0.053) | 0.555*** (0.149) | 0.454*** (0.061) | 0.527*** (0.064) | 0.074 (0.094) |
| DiD estimator | 0.135*** (0.012) | 0.131*** (0.012) | 0.149*** (0.036) | 0.011 (0.091) | -0.574*** (0.114) | 0.198*** (0.031) | -0.072 (0.066) |
| Constant | 6.654*** (0.007) | 6.323*** (0.007) | 6.575*** (0.027) | 1.950*** (0.074) | 3.336*** (0.033) | 2.185*** (0.033) | 2.835*** (0.046) |
| Observations | 68034 | 68071 | 69590 | 69712 | 69737 | 69347 | 69716 |

Note: 1. *p<0.10, **p<0.05, ***p<0.01
2. Standard errors are in parentheses
3. Household fixed effects are included in all models

Impact of migration on income, assets, household debt and education

Further, to encapsulate the impact of migration on other socio-economic indicators, the results of the DiD fixed effects regression on these dependant variables has been presented in Table 2. As evident from the table, migration has a significant and positive impact on per capita monthly income of migrant households. Specifically, migration leads to a 21.8 percent increase in monthly income of migrant households in comparison to non-migrant households. Remittances significantly boost household incomes, which is critical for understanding the economic lifeline that remittances provide to households in vulnerable regions **(Brown and Leeves ,2007)**.

However, the DiD estimator shows that migration does not have any significant impact on assets for migrant households in comparison to the non-migrant households. This could be due to prioritised budget allocation towards food and non-food expenditures. In contrast, migration shows a significant and positive effect on household debt. Migrant households experience a 54.7 percent increase in household debt compared to non-migrant households. This could be attributed to financing the high costs of migration.

Also, it is noted that for highest adult education in household, both time and migration have significant impacts. However, the direction of the impact differs, with time affecting education positively as a unit change leads to a 0.79 unit increase in adult education. Whereas migration impacts education negatively as a unit change leads to a decline by 0.771 units. This aligns with the negative impact of migration on education expenditure empirically proved in the analysis above. It is important to reiterate that since some members of the household have migrated, there could be reallocation of labour within the remaining members. This shift in responsibility in response to increases labour demands can divert financial resources away from education.

**Table 2: Results for DiD fixed effect regression for impact of migration on assets, monthly income, education and outstanding household debt.**

| **Variables** | **Assets** | **Per capita monthly income (ln)** | **Highest adult education in household** | **Outstanding household debt (ln)** |
|---|---|---|---|---|
| **Post (1=2011-12)** | 2.849*** | 0.308*** | 0.790*** | -0.243 |
| | (0.161) | (0.034) | (0.058) | (0.238) |
| **DiD estimator** | -0.048 | 0.218*** | -0.771*** | 0.547*** |
| | (0.091) | (0.023) | (0.076) | (0.167) |
| **Constant** | 11.774*** | 6.882*** | 7.405*** | 5.350*** |
| | (0.075) | (0.017) | (0.030) | (0.124) |
| **Observations** | 69792 | 68790 | 69754 | 60387 |

Note: 1. *p<0.10, **p<0.05, ***p<0.01
2. Standard errors are in parentheses
3. Household fixed effects are included in all model

Impact of migration on poverty

According to the probit regression results in Table 3, the DiD estimator which encapsulates the effect of migration is also significant indicating that migration is associated with a reduction in the probability of a household being in poverty by 4.7 percentage points holding other factors constant. This significant reduction in poverty with migration works through multifaceted mechanisms. Primarily, the increase in income through remittances provides stability and enables the household to meet their consumption requirements.

**Table 3: Results for probit regression for impact of migration on household poverty status**

| VARIABLES | Coefficient | Marginal effect (dy/dx) |
|---|---|---|
| **Post (1=2011-12)** | -0.248***<br>(0.080) | -0.053***<br>(0.019) |
| **DiD estimator** | -0.233***<br>(0.047) | -0.047***<br>(0.008) |
| **Constant** | -0.942***<br>(0.122) | |
| **Observations** | 69750 | 68672 |

Note: 1. *p<0.10, **p<0.05, ***p<0.01
2. Standard errors are in parentheses.

## CONCLUSION

The econometric analysis, utilizing Difference-in-Differences (DiD) fixed effects regression, revealed several key findings. Firstly, migration significantly increases total household expenditure with a 13.5 percent increase for migrant households in comparison to non-migrant households, attributed primarily to remittance income. This result aligns with previous literature documenting the positive impact of remittances on household living standards.

In terms of specific expenditure categories, migration positively impacted food, non-food, and energy expenditures. Migrant households saw a 13.1 percent increase in food expenditure and a 14.9 percent increase in non-food expenditure, reflecting improved living conditions and increased household welfare. Additionally, migration led to a 19.8 percent increase in energy expenditure, further highlighting the enhanced financial capacity of migrant households to meet their essential needs.

Contrary to expectations, migration had a significant negative impact on education expenditure, decreasing it by 57.4 percent. This finding suggests a potential reallocation of household resources, possibly due to immediate economic pressures or the need for additional labour in the place of origin. This suggests that households may prioritize short-term economic needs over long-term investments in human capital. This is also visible in the insignificant impact of

migration on health expenditure of households. The lack of expenditure in these categories indicates a critical area for policy intervention to ensure that migration does not adversely affect human capital development.

The analysis of other socio-economic indicators showed that migration significantly boosts household income by 21.8 percent, providing a stable foundation to households for incurring expenditures. However, migration did not significantly impact asset accumulation, possibly due to prioritized spending on immediate consumption needs. Migration also resulted in a significant increase in household debt by 54.7 percent, likely due to the high costs associated with migration which can impose significant economic burdens on the household.

Furthermore, migration had a complex impact on education levels within households. While the overall level of adult education increased over time, migration itself negatively impacted this indicator, possibly due to the diversion of financial resources and labour towards immediate economic needs. Importantly, migration was associated with a significant reduction in household poverty as indicated in the probit regression analysis. The probability of a household being in poverty decreased by 4.7 percentage points due to migration, highlighting the role of remittances in providing economic stability and reducing their vulnerability to economic shocks.

In summary, the study concludes that migration has multifaceted impacts on household welfare in India. While migration enhances overall expenditure, food security, and income, it also presents challenges such as increased household debt and negative effects on education expenditure. These findings underscore the need for targeted policy interventions to maximize the positive impacts of migration while mitigating its adverse effects.

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