# Who Migrates Overseas and is it Worth Their While? An Assessment of Household Survey Data from Punjab, Pakistan

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## ABSTRACT

The study is based on first-hand information gathered in the Punjab province through focus groups and household surveys. The study divided Punjab province into the north, south, west, and centre regions using the sample approach introduced by Cheema et al. (2008). A total of 1000 observations form the basis of the study's sample. According to the study's findings, migrant households would have considerably superior liquidity to finance expenditures, especially those related to buying cars, appliances, and kitchenware like pots and pans. Families with migrants spend significantly more than non-migrant families in every situation. Additionally, a sizeable amount of the received remittances are saved by the homes of migrants. Between migrant and non-migrant families, there is a large difference in annual cash savings; migrant families save nearly nine times as much as non-migrant households. The outstanding debt of migrant households is not significantly higher. Despite having to pay a hefty relocation fee up front, migrant households are used to repaying their loans in a first-come, first-served fashion. Furthermore, it was found that there was a significant disparity between the two groups in the amount of money spent on buying agricultural land by migrant households.

## 1. INTRODUCTION

Migration is considered as one of the essential pillars of economic growth and development and especially in case of developing countries like Pakistan. It is an essential tool for raising revenue, reducing poverty, and fostering development, especially in developing countries (Alfieri & Havinga, 2006). Pakistan received US$ 7.8 billion in 2019-2020, ranked 10th in the world for remittance receipts (State Bank of Pakistan, 2020).

Overall, Pakistani foreigners contribute significantly to the economic development of their home country by raising household incomes and serving as a large source of foreign exchange gains for the country (Javed et al., 2017). Additionally, there are important benefits for households at the level of higher family income, the accumulation of reserves for adverse shocks, and the provision of a buffer against inflated prices. The subject

of the primary factors that influence migration decisions is quite interesting given the significance of migration and remittances. In terms of remittance inflows, the contribution of overseas Pakistanis is noteworthy, as it demonstrated resistance to the deteriorating economic condition after exports and foreign direct investment. As the Pakistani diaspora grows in Saudi Arabia and the United Arab Emirates, a significant increase in remittances has been noticed from these two nations. Apart from that, Pakistanis have developed enterprises, profitable joint ventures, and a large number of employment in various nations (Javed et al., 2015).

The Pakistani government estimates that 6.3 million people, or around 3.5 percent of the country's 180 million people, live and work abroad, mostly in the Middle East, Europe, and North America. The United Kingdom and the Gulf Cooperation Council (GCC) nations made considerable contributions after the United States, whereas remittances from Canada, Australia, Switzerland, Japan, and other countries were negligible and totaled less than a billion dollars.

Even in the face of a slowing trend in the economies of the United Kingdom, the United States, and the European Union, this steady increase in remittance inflows is a positive indicator for Pakistan's economy. The financial assistance supplied in the form of remittances flowing to millions of worker's families in various towns and towns is also critical, as it serves as a buffer against growing inflation and raises their living conditions. At the same time, remittances have favourable effects on a variety of local businesses, including electronic item sales, cattle, autos, and, in particular, the significance of remittances in the growth of the real estate market.

Many causes, particularly the growing Pakistani diaspora in Saudi Arabia and the United Arab Emirates, have contributed to the steady rise in overseas remittances. Second, as the rupee has devalued against the dollar, remittance inflows have increased. The State Bank of Pakistan's contribution is also laudable, since it created the "Pakistan Remittance Initiative (PRI)" in 2009 in collaboration with the Ministry of Overseas Pakistanis and the Ministry of Finance to enhance remittances through banking channels. The Hundi/Hawala system, for example, has been discouraged as a result of this endeavour. Furthermore, it has expanded the business of foreign exchange businesses and commercial banks.

Many academics studied migration causes from various perspectives and contexts. Sjaastad (1962), Todaro (1969), and Harris & Todaro (1969) are some of the older works in this area (1970). In a theoretical investigation, Sjaastad (1962) produced a theory concerning the causes of human migration. He discovered that migrants relocate in order to maximise net real earnings while seeing migration as an investment. Todaro (1969) and Harris & Todaro (1970), for example, used a neoclassical framework to develop their models. They argue, in addition to Sjaastad's hypoyhesis, that migration is driven by variations in predicted wages between rural and urban areas, rather than pay disparities.

Despite its significance, there is a crucial question that needs to be answered: to what extent is this potential realized, and who are the beneficiaries? The cost of moving to another country is typically unreasonably high. The cost of agent fees, visa fees, and other expenses can be very high for the poor. Transferring remittances from the host country to the home country is difficult after securing abroad migration and employment. The use of underground channels like the hundi/hawala system has increased as a result of limited access to and the expensive cost of moving money through the banking system. This study explored the migration related costs and remittance transfer channels and its of migration on household welfare in case of Punjab, Pakistan.

## 2. LITERATURE REVIEW

Sharma and Zaman (2009) looked into the characteristics of international migrants, the cost of migration, the method used to transfer migrants, as well as the effects of migration on household welfare. The study's findings

show that international migrants spend more per person per month than non-migrants, and that their households saved money to help them deal with potential negative shocks.

In their 2010 study, Adams and Cuecuecha looked at how international migration affected Indonesia's ability to save money and make investments. The study made three key discoveries. The first is that remittances have a considerable impact on reducing poverty. Second, an additional 8.5% of the migrant family's income is spent on food. Third, receiving remittances reduces the marginal expenditure on investment goods like housing by 39.2 percent.

Bracking and Sachikonye (2010) examined how migration affected Zimbabwe's efforts to combat poverty. To create a comprehensive picture of RRHs and non-RRHs, the study utilised quantitative and qualitative methodologies. Remittances have a significant influence on reducing poverty in urban Zimbabwe, according to the study. It has been determined that migration has a favourable effect on financial development since migrant households' well-being is higher than that of non-migrant households.

The present and potential advantages of remittances to the countries of origin have been studied by Maphosa (2007). The policy framework needed to achieve sustainable development was also examined in this study. The study's findings show that remittances raised people's standards of living, particularly in the areas of education and health. Remittances have been helpful during difficult economic times.

The impact of increased remittance inflow on the Jamaican economy was studied by Bussolo and Medvedevs in 2008. The findings revealed a weak but negative association between remittances and labour supply. This relationship also revealed positive shocks to remittances, decreased labour force participation, appreciation of the real exchange rate, and decreased country competitiveness in the global trade market. The study also discovered that while a heavily indebted government offset the negative effects of remittance inflows, impoverished people nevertheless bear the brunt of the tax burden.

Brown and Jimenez (2008) tried to explore the impact of remittances and migration on poverty and income inequality for Tonga and Fuji. The study has used household survey dataset 2005 and adopted various econometric techniques including instrumental variables to find the results. The results found that when the superior counterfactual method is been used, poverty shows considerable impact and for the robustness of results associated indicators for poverty has been measured on the different sub-sample household. The income inequality is higher in Fuji than Tonga depict that the inflow of remittances in Fuji is higher than Tonga. The reduction in poverty in Tonga is higher than Fuji. The education and health status of migrant are moved than non-migrants and migration is significantly contributing in order to achieve development goals.

Lokshin et al. (2010) investigated the impact of domestic and international migration on work and poverty in Nepal and found that a percent increase in migration will lead to declined 20 % in poverty while poverty will increase from 30% to 33% in case of absence of migration. In absence of migration, the per capita expenditure would be decreased from 15000 to 14000.

Catrinescu et al. (2009) analyzed the impact of remittances on development in long run. Through implementing effective economic policies, remittances are the good source of the business environment in long run. The study tested the key to increasing the development in long run through remittances. The study also found that the reverse causality between growth and remittances is due to omitted variables bias. Remittances can be effectively channelized through the proper mechanism of institutions of any country.

Zhu and Luo (2010) have investigated the impact of regional migration on inequality and poverty of rural settlement. The study found that migration from rural to urban is a "potential source" for the household and remittances also helpful in the reduction of poverty. Due to the lack of health facilities, education level, lack of resources are the cause of migration and remittances. The study also found that income of migrant is lower

in the counterfactual situation than non-migrant so, remittances are considered as a major source to optimize income.

The study by Siddique et al. (2010) found that there exist a uni-directional relationship between economic growth and growth in remittances but for Sri Lanka, the study found bi-directional causality that remittances promote economic growth and vice versa. The study recommended the following suggestion, there should be the development of rapid and reliable and low-cost remittances channel modes this will maximize the transition through formal modes. There should be a restriction on female migration. As some illegal migration reported, the law should be enforced against human trafficking. Microfinance program should be introduced by the financial institutions in order to bear the migration cost of low-income households.

Javed et al. (2015) explored the relationship between migration, remittances and welfare of household for district Toba Tick Singh, Pakistan. The study collected data through survey including information regarding transaction cost faced by migrants and sources through which household finance to oversee migration. The study applied propensity score matching, and revealed that the families of migrants are enjoying benefits regarding expenditure on education, expenditure on health, consumption level and level of saving. The study suggested following policies. Government should established department in order to improve the skill level of workers, there should be promotion campaign regarding opportunities available and migration process, development of financial institute that provides loan to potential migrants, reduction in traction cost and establishment of awareness department regarding migration.

Javed et al. (2017) investigated the time involved, financial cost and benefits at households level in migration. The household surveyed were conducted including information about characteristics of households, time involved, cost of transaction and mode of financing by migrants. The study adopted propensity score matching technique. The results of study indicates that migrants are enjoying benefits in form of total expenditure, food expenditure, non-food expenditure, clothing expenditures and in level of their savings. The study suggested that, creation of micro finance institute and training centers for workers. There should be improvement in modes of transition cost and establishment of "Pakistan Remittances Initiatives" would be some policy recommendation in order to tackle the issues regarding migration.

The impact of domestic migration in China on migrant families' spending habits was examined by Demurger and Wegan in 2016. The study examined the effects of remittances on the consumption and investment of rural migrant households using data from the Rural-Urban Migration in China (RUMC) survey. The study used the propensity score matching technique to select the remittance-receiving families and to determine the average treatment effects on those homes. Remittances provide a supplement to the household income of migrants, according to the study. Instead of increasing investment spending, this resulted in a rise in consumer spending. Remittances were also shown to have a detrimental effect on educational spending, which is thought to be a significant part of human capital in rural China.

Gobel Kristin (2013) examined the impact of remittances on spending decisions of households in Ecuador. The study found strong evidence that remittances increase the educational expenditure, health expenditures and expenditure on housing but decrease food expenditure. The study does not find the impact of sex of remitter and receiver on decision pattern.

Ershaul and Mazharul (2012) analyzed the rural-urban migration and living conditions in Bangladesh and applied multivariate Ordinary Least Square (OLS). The study found that rural-urban migration improves the living conditions of households significantly particular on education and occupation. Once the effect of education and occupation are controlled, the relationship between migration status and living condition remains significant, advantages regarding urban natives over rural natives fall down. Based on results it suggested that

improvement in higher education and employment opportunities outside the agriculture and labor sector played more role in improving living conditions in Bangladesh.

Zhu Mengbing (2016) analyzed the relationship between remittances, migration and educational investment in rural China. The study utilized China Household Income Project (CHIP), 2013 dataset. The study found the negative impact of remittances and migration on school investment and educational investment. Migration effect adversely affects educational decision especially children in the older age group. The study also found a negative association between remittances receiving/sending households and educational investment. The non migrant has more focused on the quality of compulsory education than migrant families because of the relatively low return to education in China.

Garip (2014) looked into the effects of remittances and internal migration on wealth distribution and accumulation in rural Thailand. With the help of OSL, matching, and instrumental variables techniques, the study created indices of household productive and consumer assets. The findings demonstrated that although impoverished households gained a productive asset with migration, wealthier households lost a productive asset. The study also discovered that regardless of wealth position, the household does neither lose or acquire consumer assets with migration. It also implied that remittances had an equalising influence on how wealth was distributed in rural Thailand.

In Senegal, the pattern of remittances and household spending was investigated by Randazzo and Piracha in 2014. OSL and propensity score matching were used in the study to access the effect of remittances on various household budget shares. According to the study, foreign remittances are used effectively in Senegal, but when marginal spending behaviour is taken into account, this benefit disappears. Remittances may help the community's development process, according to the study's findings.

In their 2017 study, Thapa and Achary looked into how remittances affected how much money households spent. The study employed propensity score matching to minimise selection bias and evaluate observational data. The study came to the following conclusions. Comparatively speaking, households that get remittances tend to spend more on consumption, health, and education. Regarding the constructive and unproductive uses of remittances, the report says nothing. As compared to non-migrant families, migrant households spend their income ostensibly on non-food things like health, education, and durable goods, suggesting that migrant families will have a long-term, sustained welfare boost.

Hangen (2015) discovered that the welfare of households and communities is significantly improved by remittances. Education level, health status, and other economic indices all improved as a result of migration. It also aids in lowering poverty. The study also discovered that countries with migration from lower deciles have a greater influence on reducing poverty. The survey also discovered that immigrant families' welfare is better than that of non-immigrant families.

Antman (2010) investigated how international migration affects the spouse decision regarding determining the allocation of resources at the household level. The study used longitudinal data of households and applied a difference-in-difference regression model in order to remove endogeneity. The study found the fraction of expenditure on boys is less than girls especially on education and clothing when the father is migrant in the US while after returning to hometown Mexico, the fraction of expenditure rises on boys than girls predicting that fathers are biased toward son and mothers are toward the daughter. The results of the study are significant and consistent. The study also revealed that the head of migrant household made expenditure from remittances on children.

Hagedorn and Wang (2013) explored the evidence from Kyrgyzstan about changing strategies regarding spending pattern of the household after receiving remittances. Kyrgyzstan is considered the second largest remittance-dependent country in the world. The study used panel data and applied the fixed effect. The study

found that after receiving remittances household shifted remittances from housing and food to other expense like legal and educational expenditures. The study also suggested that remittance-dependent country can easily execute policies regarding migration as remittances increases in a country.

Egger and Litchfield (2017) investigated the impact of repeated migration within the household on the welfare of the families. The study used data of household panel survey, 2013 from the rural areas of Ghana. To overcome the problem of omitted variable and reverse causality bias the study exploit the rich information regarding migration. By using indicator of housing quality, the study measured wealth index through applying Multiple Correspondence Analysis. The study also applied entropy-balancing weights (Heinmueller, 2012) to obtain the valid comparison group of our analysis. The study revealed that migrant household has more than one migrant and new migrant is most likely to form younger generation and faced lower migration cost. The study also found that the impact of new migrant on the welfare of household is almost negligible because of new migrant remit less money. All the results were consistent and significant.

Mainul Islam and bishah (2017) examined the impact of remittances on expenditures of health and analyzed different types of treatment of migrant household in Bangladesh. The study applied univariate analysis and for the significance of the result, t-test and cross tabulation has been used. The study found the international receiving household have a high predicted probability of per capita health expenditure than non-migrant households. Remittances allow a household to increase their consumption on local goods and services whereas international remittances receiving household have a higher predicted probability of seeking treatment from modern services provider than a non-receiving migrant.

Jena Faria (2015) empirically investigated the determination of migration, remittances and how households change their expenditure pattern due to remittances in Kenya. The study used the cross-sectional household data and applied OLS and probit model. The finding revealed that remittances send by one migrant has a significant impact on the welfare of the household while other migrants have an insignificant impact. The expenditure pattern of households is also showing that, while allocating budget to durable goods and physical investment, the remittances are not combined with general income of the households. The study also applied the bivariate probit model and found that remittances are exogenous for physical investment and endogenous for durable goods.

Nguyen and Vu (2017) examined the impact of remittance on the wellbeing of the household in Vietnam using panel data and applied the fixed effect. The study found that the impact of remittance on the employment of a remaining household member of the migrant is less than non-migrant families. There is no evidence found regarding remittance can help the household member to work in non-farm fields. International migration is a key factor to increase the per capita income and expenditure of the household. Due to decrease household size, there is an increase in per capita consumption expenditure among migrant families than non-migrants. The study also found that the overall welfare of the household increases after receiving international remittances.

Medina and Cardona (2010) measured the effects of remittances on consumption of a household, educational attendance, and living standard of household in Colombia. To find the impact of remittance on consumption the study estimated Engel curve. Due to Colombia Crisis 1998, the country has to face unemployment. Remittances have considered a key component to remove the crisis in Colombia. The study also found the remittance has a positive impact on education, expenditure on education in migrant families is 10 percent more than non-migrants. There is no effect found on overall enrollment rate, health expenditure, and investment.

Randazzo and Piracha (2017) analyzed the behavior of households in Senegal after migration by applying two econometric technique, propensity score matching and multinomial treatment method using living standard survey dataset. While considering only impact of remittance on production behavior of household, the study found that all migrants using remittances productively however after including spending behavior this impact

has been disappears. The study found that remittances does not affect the household consumption pattern. The study also found that remittances is considered just a source of income while allocating the income to different goods.

Ramona and Traverso (2016) measured the impact of international migration on food security in case of Bangladesh by using six food security indicator at household level. Moreover, the study highlighted the impact of remittances on food security. The study applied standard OLS and propensity score matching and found that estimates of PSM have same sign as compare to standard OLS but magnitudes are higher. The study found that remittances has positive relationship with the food security however due to unavailability of data, the study suggested the future research about the channel that involving in improving food security after getting remittances.

## 3. DATA AND METHODOLOGY

### Analysis of Household Level Impacts: Hurdles and Obstacles

Because the characteristics of migrants and non-migrants differ due to households that produce the availability of migration opportunities to their members who may be socially more interacted than those who do not, the problem of potential endogeneity and other aspects of the data must be addressed in order to analyze the household level impact. Effect assessments between the two groups would be distorted when the relevant household elements could not have received the observable facts and figures. According to the aforementioned point of view, the Propensity Score Matching (PSM) method is being used because this method uses non-experimental design approaches and offers the most accurate estimations of the impact of migration.

### History and Development

Regarding this, Rosenbaum and Rubin (1983) established the requirement for "Propensity Score Matching" (PSM) in experimental analysis for causal effects, but Heckman's early work from the late 1970s and his study on dummy endogenous variables from 1978 show the same challenge when non-random assignment is present. Following that, Lalonde's work from 1986 played a significant role in the movement against non-random assignment. By establishing numerous therapy and control groups, he also helped the National Supported Work (NSW) study's examination. His study's conclusions were alarming because they seemed to go against the results of actual experiments. Dehejia & Wahba's research from a decade later is commendable; they both followed Lalonde (1986) and analysed the identical set of data, but they employed matching techniques rather than regression methods and found that the results were constant with the actual experimental results. As a result, this development stage is beneficial and created a new route for applying matching algorithms.

### Empirical Methodology

In order to find the impact of migration on welfare of household, the study applied PSM which is explain as follow:

Let

$M_i^1$ = Household`s outcomes if any member is migrated

$M_i^0$ = Household's outcome if the member does not migrated

The impact of migration can be measured by

$\Delta = M_i^1 - M_i^0$

Where, $M_i^1$ or $M_i^0$ is observable for each case.

Let Dummy `N` represent the migration status of household

N=1; If the member of household is migrated

N=0; Otherwise

In order to find the average impact of migration

(1) $E(\Delta|Z,N=1) = E(M_1 - M_0|Z,N=1)$

$= E(M_1|Z,N=1) - E(M_0|Z,N=1)$

Where `Z` represent the vector matric of control variables

The above measure represent the "average impact of treatment (migration) on treated group"

While from the above equations $E(M_0|Z,N=1)$ is not observable.

The counterfactual situation can be measured with method provided by PSM (Rosenbaum and Rubin 1983).

Let $P(Z) = Pr(N=1|Z)$ is representing the probability of household having migrant family member.

PSM is used to contract comparison group of migrant and non-migrants by matching observations with similar values of P(Z) following the two assumptions.

(1) $E(M_0|Z,N=1) = E(Y_0|Z,N=0)$

(2) $0<P(Z)<1$

The expression (1) representing the average impact of non-migrant household is same with counterfactual situation of migrant if they have not migrated after controlling the values of `Z` which is known as 'Conditional Mean Independence' while expression (2) is showing that matching is valid and well defined with the probability lies between 0 and 1.

For the large number of characteristics used in matching, there may a raised a problem called 'Curse of Dimensionality' which states that the chance to find exact match is reduces when number of characteristics for matching between migrants and non-migrants increases. Rosenbaum and Rubin (1983) solved the problem of the "Curse of Dimensionality" by adding PSM matching. He hypothesised that propensity scores may be used to link beneficiaries and non-beneficiaries. It is possible to predict migration probability based on all visible household factors. Migrant households are matched with non-migrant households that are most comparable in terms of likelihood utilising probabilities.

There is a significant difference in the results of migrants and non-migrants after matching, as indicated in the figure.
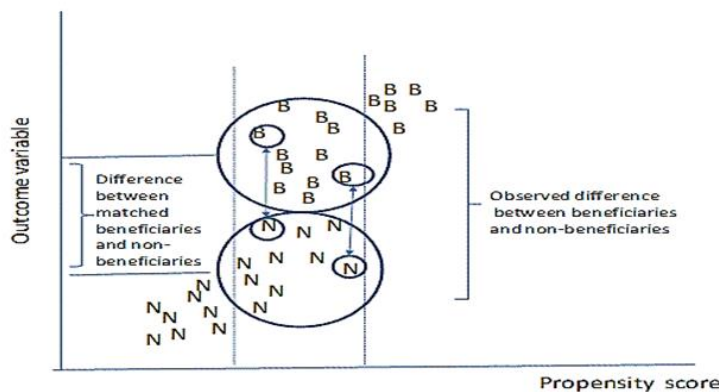


**Figure 1.** Graphically Representation of Propensity Score Matching.

## Sampling Methodology

The study is based on primary data that was gathered from the Punjab province and was gathered through focus groups and household surveys (FGDs). In terms of population, Punjab is Pakistan's largest province. The study divided Punjab province into the north, south, west, and centre regions using the sample approach created by Cheema et al. (2008). Four districts make up the North area, seven districts make up the South, and eight and seventeen districts, respectively, make up the West and Central areas. In the study, one district served as a representation for each geographical area. One tehsil from each district was then randomly selected after the district selection. One town was chosen from a group of tehsils. Furthermore, by employing simple random selection, the research interviewed 250 households from each district. Overall, the sample of the study is based on 1000 observations.

## 4. RESULTS AND DISCUSSION

### Migration and Remittances: Household Level Impact

The study employed a logit model that included both migration drivers and covariates that affect consumption outcomes and estimated the household level consequences of migration and remittances. However, there must be significant overlap between the features of migrants and nom-migrants (shared support) for application and validity to exist.



**Figure 2.** Characteristics for PSM.

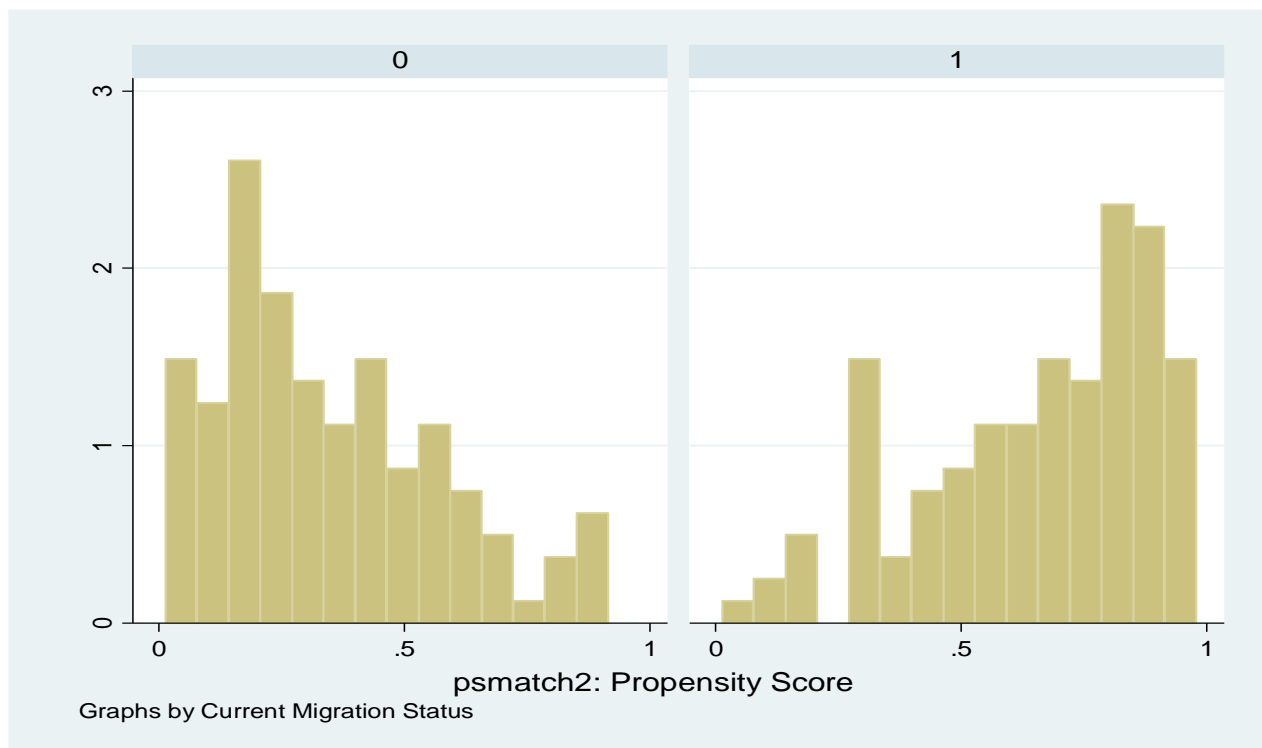In Table **1**, the elements affecting migration status are displayed. All of the statistically significant variables that are well-matched with earlier studies are the role of friends and relatives in the destination country, proportion of adult females, the agricultural land before migration, proportion of adult females with primary education, and the household head's business before migration.

**Table 1. Results of Logit Model.**

| Current Migration Status | Coefficients | T-Statistic |
|---|---|---|
| Home Area Before Migration | 0.004313 | 0.24 |
| Agricultural Land Before Migration | -0.11495 | -3.04** |
| Business of Household Head Before Migration | -1.30906 | -3.61** |
| Household Head Occupation Before Migration | 0.879882 | 1.55 |
| Number of Adult Males | 0.50322 | 1.16 |
| Number of Adult Females | -0.67848 | -2.06** |
| Adult Males with Primary Education | -0.00649 | -0.01 |
| Adult Females with Primary Education | 0.600828 | 1.87* |
| Education Level of Head of Household | 0.016502 | 0.32 |
| Education Level of Spouse | -0.00552 | -0.48 |
| Maximum Education Among Adults | 0.165232 | 2.23** |
| Friends & Relatives in the Destination Country | 2.047815 | 6.05** |
| _cons | -2.69006 | -3.61** |

**Household level Outcomes and Role of Migration**

**Nearest Neighbor Matching (With Replacement)**

When using nearest neighbour matching, the treated person with the greatest propensity score is matched with a member of the comparison group. This chosen person might be used once more in the future if they are replaced in the comparison group and returned. Table 2 displays the key findings listed below.

First, the study found that monthly per capita non-food expenditures, monthly per capita total expenditures and monthly per capita food expenditures are statistically significantly different from one another. The majority of the time, migrant households reported statistically significant expenses.

Second, the study found that migrant families spend much more than non-migrant households with respect to monthly per capita clothes, and monthly per capita schooling expenditures, and monthly per capita health-related expenses. Although spending on health care and education is uneven, this analysis did find statistically significant variations.

Third, it was predicted that Migrant families consistently spend a lot more money than non-migrant families. Moreover, migrant households spend more on car purchases, appliances, and kitchen goods like pots and pans. Fourth, our results support earlier hypotheses that migrant households save a sizeable part of remittances received. Between migrant and non-migrant families, there is a large difference in annual cash savings; migrant families save nearly nine times as much as non-migrant households.

Fifth, the outstanding debt of migrant households is not significantly higher. Despite having to pay a hefty relocation fee up front, migrant households are used to repaying their loans in a first-come, first-served fashion.

Sixth, it was revealed that migrant households and non-migrant households spent significantly different amounts of money on the purchase of agricultural land. Except for the difference in outstanding loans, which was not determined to be significant between the two groups, the study showed a positive and significant effect on expenditures for food, non-food items, clothing, health and education-related expenses, level of cash savings, and change in agricultural land.

**Table 2. Results by using Nearest Neighbor Matching (With Replacement).**

| Outcome Variables | Sample | Treated | Controls | Difference | T-Statistic |
|---|---|---|---|---|---|
| Monthly Per Capita Total Expenditures | Unmatched | 6695.406 | 2797.252 | 3898.154 | 10.11** |
| | ATT | 6683.323 | 2657.844 | 4025.479 | 6.38** |
| Monthly Per Capita Food Expenditures | Unmatched | 3304.894 | 1449.436 | 1855.458 | 8.05** |
| | ATT | 3301.388 | 1311.62 | 1989.768 | 5.25** |
| Monthly Per Capita Non-food Expenditures | Unmatched | 889.998 | 316.532 | 573.466 | 7.63** |
| | ATT | 862.005 | 320.2832 | 541.7218 | 5.18** |
| Monthly Per Capita Clothing Expenditures | Unmatched | 268.838 | 21.244 | 247.594 | 9.66** |
| | ATT | 254.8087 | 19.9187 | 234.89 | 6.33** |
| Monthly Per Capita Health Expenditures | Unmatched | 720.038 | 293.74 | 426.298 | 6.26** |
| | ATT | 752.5096 | 328.5449 | 423.9647 | 2.6** |
| Monthly Per Capita Education Expenditures | Unmatched | 1053.278 | 331.732 | 721.546 | 5.33** |
| | ATT | 1068.855 | 320.3019 | 748.5531 | 4.04** |
| Monthly Per Capita Expenditures On Pots & Pans | Unmatched | 182.51 | -24.5 | 207.01 | 12.07** |
| | ATT | 179.8648 | -21.0065 | 200.8713 | 8.17** |
| Annual Expenditures on Appliances | Unmatched | 6624.854 | 1055.1 | 5569.754 | 11.7** |
| | ATT | 6509.07 | 1194.199 | 5314.871 | 8.92** |
| Annual Expenditures on Vehicles | Unmatched | 20362.19 | 2167.9 | 18194.29 | 5.03** |
| | ATT | 21178.86 | 2023.638 | 19155.22 | 4.54** |
| Annual Cash Savings | Unmatched | 110006.2 | 11703.1 | 98303.09 | 8.5** |
| | ATT | 102468.6 | 12590.93 | 89877.66 | 7.77** |
| Outstanding Loans | Unmatched | 18643.79 | 9552.46 | 9091.33 | 1.45 |
| | ATT | 20848.95 | 7303.078 | 13545.87 | 1.19 |
| Change in Agricultural Land | Unmatched | -18.2564 | -79.756 | 61.4996 | 3.58** |
| | ATT | -18.4979 | -79.9785 | 61.48066 | 2.94** |

**Nearest Neighbor Matching (Without Replacement)**

The matching gap develops in terms of propensity score when fewer nearby units are available for matching. The results of the Neatest Neighbor Matching are shown in Table 3. (Without Replacement). These estimates agree with the impact figures discovered by nearest neighbour matching (With Replacement).

**Table 3. Results by using Nearest Neighbor Matching (Without Replacement).**

| Outcome Variables | Sample | Treated | Controls | Difference | T-stat |
|---|---|---|---|---|---|
| **Monthly Per Capita Total Expenditures** | **Unmatched** | 6680.406 | 2854.602 | 3825.804 | 10.11** |
| | **ATT** | 6668.323 | 2940.549 | 3727.774 | 8.78** |
| **Monthly Per Capita Food Expenditures** | **Unmatched** | 3289.894 | 1506.786 | 1783.108 | 8.05** |
| | **ATT** | 3286.388 | 1549.297 | 1737.091 | 7.01** |
| **Monthly Per Capita Non-food Expenditures** | **Unmatched** | 874.998 | 373.882 | 501.116 | 7.63** |
| | **ATT** | 847.005 | 387.6519 | 459.3531 | 6.75** |
| **Monthly Per Capita Clothing Expenditures** | **Unmatched** | 253.838 | 78.594 | 175.244 | 9.66** |
| | **ATT** | 239.8087 | 83.1939 | 156.6148 | 8** |
| **Monthly Per Capita Health Expenditures** | **Unmatched** | 705.038 | 351.09 | 353.948 | 6.26** |
| | **ATT** | 737.5096 | 366.7266 | 370.783 | 5.8** |
| **Monthly Per Capita Education Expenditures** | **Unmatched** | 1038.278 | 389.082 | 649.196 | 5.33** |
| | **ATT** | 1053.855 | 402.1939 | 651.6611 | 5.02** |
| **Monthly Per Capita Exp. On Pots & Pans** | **Unmatched** | 167.51 | 32.85 | 134.66 | 12.07** |
| | **ATT** | 164.8648 | 34.75467 | 130.1101 | 10.56** |
| **Annual Expenditures on Appliances** | **Unmatched** | 6609.854 | 1112.45 | 5497.404 | 11.7** |
| | **ATT** | 6494.07 | 1122.11 | 5371.96 | 10.63** |
| **Annual Expenditures on Vehicles** | **Unmatched** | 20347.19 | 2225.25 | 18121.94 | 5.03** |
| | **ATT** | 21163.86 | 2284.727 | 18879.13 | 4.53** |
| **Annual Cash Savings** | **Unmatched** | 109991.2 | 11760.45 | 98230.74 | 8.5** |
| | **ATT** | 102453.6 | 11518.37 | 90935.22 | 8.28** |
| **Outstanding Loans** | **Unmatched** | 18628.79 | 9609.81 | 9018.98 | 1.45 |
| | **ATT** | 20833.95 | 10725.57 | 10108.38 | 1.41 |
| **Change in Agricultural Land** | **Unmatched** | -33.2564 | -22.406 | -10.8504 | 3.58** |
| | **ATT** | -33.4979 | -22.5911 | -10.9067 | 3.46** |

**Results of Impact Estimates through Bootstrapped Standard Errors**

The technique of bootstrapping is used to provide accuracy measures to sample estimates. Almost every statistic's sample distribution may be calculated using this methodology. When parametric assumptions are in dispute or methods for generating standard errors are overly cumbersome, it can be utilised for hypothesis testing. Although its utilisation in the literature is still uncertain, several research propose utilising bootstrapping for standard error estimations.

The study's main concern is that the estimated variance of the treatment effect should also take into account variation related to common support imputation, propensity score estimation, and the order in which treated individuals are matched. This results in greater variation than the average sample variation.

This issue can be resolved by bootstrapping. This is a typical way of determining standard errors when analytical estimations are missing or distorted. For various matching techniques, the bootstrapped standard errors and t-statistic values were calculated from Tables 4 through 6. The results show that all estimates agree and are well matched with the aforementioned data.

**Table 1. Results of Bootstrapped Standard Errors for Nearest Neighbor Matching (Without Replacement).**

| Outcome Variables | Observed Coefficients | Bootstrapped Standard Errors | T-Statistic |
|---|---|---|---|
| Monthly Per Capita Total Expenditures | 3717.494 | 394.7883 | 9.08** |
| Monthly Per Capita Food Expenditures | 1726.811 | 225.6091 | 7.2** |
| Monthly Per Capita Non-Food Expenditures | 449.0731 | 57.22567 | 6.33** |
| Monthly Per Capita Clothing Expenditures | 146.3348 | 5.91838 | 7.28** |
| Monthly Per Capita Health related Expenditures | 360.503 | 48.57473 | 5.82** |
| Monthly Per Capita Education related Expenditures | 641.3815 | 110.3104 | 5.2** |
| Monthly Per Capita Expenditures on Pots & Pans | 119.8301 | -3.22496 | 10.11** |
| Annual Expenditures on Appliances | 5361.681 | 518.0947 | 10.06** |
| Annual Expenditures on Vehicles | 18868.85 | 4040.79 | 4.66** |
| Annual Cash Savings | 90924.92 | 12320.14 | 7.37** |
| Outstanding Loans | 10098.1 | 7096.265 | 1.42 |
| Change in Agricultural Land | -21.1867 | -16.8381 | 3.22** |

**Table 2. Results of Bootstrapped Standard Errors for Kernel Matching Bootstrapped Standard Errors for Kernel Matching.**

| Outcome Variables | Observed Coefficients | Bootstrapped Standard Errors | T-Statistic |
|---|---|---|---|
| **Monthly Per Capita Total Expenditures** | 3873.85 | 430.061 | 8.69** |
| **Monthly Per Capita Food Expenditures** | 1824.463 | 245.5793 | 7** |
| **Monthly Per Capita Non-Food Expenditures** | 488.9823 | 73.6598 | 5.56** |
| **Monthly Per Capita Clothing Expenditures** | 150.784 | 6.0115 | 7.13** |
| **Monthly Per Capita Health Expenditures** | 379.0717 | 71.84626 | 4.44** |
| **Monthly Per Capita Education Expenditures** | 662.0936 | 127.8416 | 4.68** |
| **Monthly Per Capita Expenditures On Pots & Pans** | 120.4325 | -2.9845 | 9.4** |
| **Annual Expenditures on Appliances** | 5203.092 | 523.1763 | 9.65** |
| **Annual Expenditures on Vehicles** | 18682.42 | 4185.679 | 4.45** |
| **Annual Cash Savings** | 88238.83 | 12066.03 | 7.3** |
| **Outstanding Loans** | 12700.99 | 8016.996 | 1.58 |
| **Change in Agricultural Land** | -18.2737 | -17.3971 | 2.97** |

**Table 3. Results of Bootstrapped Standard Errors for Local Linear Matching.**

| Outcome Variables | Observed Coefficients | Bootstrapped Standard Errors | T-statistic |
|---|---|---|---|
| **Monthly Per Capita Total Expenditures** | 3828.174 | 473.0118 | 7.86** |
| **Monthly Per Capita Food Expenditures** | 1788.026 | 260.744 | 6.52** |
| **Monthly Per Capita Non-Food Expenditures** | 476.7487 | 81.78386 | 5.05** |
| **Monthly Per Capita Clothing Expenditures** | 151.5837 | 9.3706 | 6.61** |
| **Monthly Per Capita Health Expenditures** | 372.219 | 78.55494 | 4.12** |
| **Monthly Per Capita Education Expenditures** | 671.4936 | 140.1196 | 4.41** |
| **Monthly Per Capita Expenditures On Pots & Pans** | 120.7662 | -0.56567 | 8.81** |
| **Annual Expenditures on Appliances** | 5115.309 | 543.721 | 9.17** |
| **Annual Expenditures on Vehicles** | 18675.75 | 4100.674 | 4.54** |
| **Annual Cash Savings** | 87341.21 | 12400.96 | 7.04** |
| **Outstanding Loans** | 12723.36 | 8490.303 | 1.5 |
| **Change in Agricultural Land** | -17.7592 | -15.9369 | 2.93** |

## 5. CONCLUSION AND POLICY OPTIONS

This study reveals that household well-being is positively impacted by migration because all matching approaches show that the overall expenditures of migrant households are much higher per capita. On the other hand, because they save more money, migrant households are more resilient to adverse shocks. Results shows that food and non-food expenditures, level of savings, health and education-related expenditures, annual appliance and car expenditures, and change in agricultural land, the analysis discovered statistically significant variations, In terms of per capita total expenditures. Based on the findings, the study comes to the conclusion that Wages and remittances can increase if migrant members' abilities are improved. To meet this urgent need, technical training facilities should be established. As a result, immigrants will be able to benefit from a wider choice of professional opportunities abroad. The establishment of microfinance organisations capable of providing loans of the requisite amount and payback period. The issue is one of access and cost; informal transfer channels should be discouraged, and the price of official transfer channels should be further reduced. Information campaigns and services can assist impoverished and under-informed persons in understanding the migration process, reducing the danger of fraud and loss.

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