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Research Article

Migration and Human Development in Selected OIC Countries

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ABSTRACT

The study investigates the relationship between Migration, Remittances and Human Development in selected OIC countries over the period 2000 to 2019. Four separate models were built for the purpose of testing the theory. Fixed Effect Model is estimated after checking its validity through Hausmans' test while short run association is measured through VECM. In addition, FMOLS approach was also used to reveal the structure and strength of inter-variable relationships. We found that migration has a positive and insignificant impact on remittances and human development in both bivariate and multivariate models. In multivariate models other variables like corruption, political openness and political Stability had a significant and positive impact on remittances but population had an insignificant and positive impact. Population and foreign direct investment are associated with enhanced levels of human development, while political stability showed insignificant and positive impact and trade had a negative but significant impact on human development. This study's rationale supports policymakers, economic researchers, and investors.

Key Words: Migration, Human Development, Remittances, Integration.

INTRODUCTION

Human development and community wellbeing is the gradual and successive attainment of enhancing freedoms and opportunities for people. In 1990, the United Nations Development Programme (UNDP) propounded the human development index (HDI) to advocate that innovative potential of people should be analyzed alongwith economic growth in the metrics of national development. Therefore, discussing simply per capita GDP growth is insufficient in measuring economic development. Challenges to achieve societal cohesion, institutional improvement, and conducive societal norms are crucial for economic development. Three different indicators were initially used to create the human development index in 1990. Three four criteria demonstrate knowledge, a high standard of livelihood, and longevity of life. Humans migrate seasonally to meet their fundamental requirements, improve their quality of life, and protect their financial security. A person who relocates for better career possibilities or to enhance their financial situation is known as an economic migrant. People migrate when they move from one country or region to another. It is the act of moving from one location to another and settling down there long-term. The topic of migration has generated a widespread debate over its causes, impacts, and implications for the indigenous citizens of affluent and poor countries. Discussions about immigrants' earnings in their destination countries and how much of it they send home are relevant to both affluent and developing nations.



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The migration results in a high level of self-satisfaction. A successful migration decision is influenced by factors such as modern living status, financial resilience, and personal peace of mind, health, and personal safety in general, especially for migrants from poorer countries. (Collier, 2013). In contrast to developed countries, migrants who move to underdeveloped nations are less satisfied with their outcomes.

Remittances from diaspora are one of the greatest financial factors of human development, especially in developing countries. (Srinkandarajah, 2005, p. 29). Money remitted by overseas nationals are the most tangible monetary contribution for home economies (Adams, 2003, p. 4; Skeldon, 2008, p. 3; Taylor et al., 1996, p. 181). Remittance inflow increases are related to advancements in human development. Remittances increase the well-being of family members who are far from migrants themselves and strengthen the economies of the receiving nations. Remittances and economic growth have drawn interest, particularly in relation to developing nations. Such focus is primarily motivated by these countries' persistent budget deficits, low savings rates, and investment shortages (Feltenstein and Iwata 2002; N dikumana 2015). The movements of personal remittances are crucial to the growth of these nations. Personal remittances provide a major contribution to GDP. Since these flows directly affect households, it is crucial to assess their effects, and to make its utilization economically productive as we intend to do for aid or FDI funds (Adams and Klobodu 2016). Diaspora's remitted money is also largely immune to the dynamics of international geo economics and tend to be more stabilizing for the economy. Such financial stability manifests in fostering growth and development during economic downturns and natural calamities. (Matuzeviciute & Butkus, 2016).

With 57 members, the OIC is the second-largest organization after the United Nations representing the continents of Asia, Africa, and America, based on its charter, which emphasizes the protection of Muslim communities' rights and the preservation of their dignity, religion, and cultural identity in non-Member States, it has committed an institutional framework to advancing Muslim communities' concerns and enabling them to fully exercise their rights.

The notion that remittances benefit human development is based on theories from the New Economics of Labor Migration (NELM) school of thought, proposing migration is a sound way to manage risks in both domestic and international markets (Massey et al., 1993, p. 436). We investigate the dynamic relationship between diaspora's remittances and human development (HD) considering we have contradictory findings in existing scholarship. However, in the case of developing countries, remittances typically have little impact on growth because they are not used for productive measures, investments, etc. Additional suggestions for policymakers in OIC member nations could result from this paper. The study is essential because the OIC member nations have the lowest rankings for human development and receive significant remittance inflows. As a result, policymakers in the region could be guided in developing a policy addressing remittance inflows by looking at the association between remittances and HD. We are intrigued to analyze remittance growth relationship to explore additional insights into that relationship.

Numerous theoretical arguments favor the underline hypothesis but little attention has been so far on the empirical association between human development and migration (Mohsin and Wajahat (2017). Despite the fact that the body of literature on migration, remittances, and development is growing when it comes to OIC, the subject has been ignored. Even though it is questionable how important remittances are for fostering development. However, the study examines the discussion in the context of these 16 OIC nations. Thus, this study investigates how migration affects human development and remittances, which in turn cause international migration. This study examines the relationship among the HDI, Migration, and Remittances in selected OIC countries from 2000-2019. A new insight has been provided into the literature by introducing political stability, corruption, and political Openness. This study used two multivariate and two bivariate models and the dependent variables are HD and remittances. The study endeavors to examine the linkage between remittances and migration in a selection of OIC states. The study also relates human development and migration in its analysis.

LITERATURE REVIEW

Kandemir (2012), examined international migration and human development as one of the most important concerns facing the economy and society today. He sought to investigate whether international migration flows are influenced by human development or the elements (education, income and health) that impact human development and whether migrants have the chance to reach higher grades of human development. Nonetheless to achieve this goal, the direction of global migration flows was evaluated by comparing the 2010 human development indexes of the 27 largest migratory corridors with the 2011 indexes of the three primary pillars of HDI: income, education and health. According to the study's findings, migrants relocate to areas with higher levels of human development, and the most significant factors influencing human development in conditions of migration are all three components of HDI.

Individual progress and global welfare may improve if barriers to international migration are removed (Ali & Sharif 2017).

Ustubiki and irdam (2012), investigated the impact of remittances on human development. They estimated using the OLS approach. They calculated how much remittances contribute to human development and compared their results to those of government developmental financial initiatives, foreign direct investment (FDI) and official Development Assistance (ODA). According to their findings, remittances are an effective means to advance human development in middle-income nations, particularly over the long term. They also have a favorable link with the degree of human development. They showed that remittances have distinct developmental effects in nations with various approaches to immigration from one another. Remittances, according to their argument, have the most positive impact on advancing human development in nations where the government views immigration as a successful labor export strategy.

Chowdhury M.S.R. (2015), examined a comparative analysis of overseas nationals' remitted money and development factors in poor, lower middle, and higher middle-income countries. He employed a pooled country-level dataset for the years (1981 to 2010). He separates the thirty years into six distinct five-year intervals. In unique ways, his research benefits the stock of knowledge on economic growth indicators, remittances, and economic growth. According to the study, remittances are not related to the expansion of low-income economies. Yet, he came to the conclusion that remittances are considerably and favorably related to the expansion of the economies of lower and upper-middle-income countries. Nevertheless, if other researchers use other methodologies or draw their samples from different socioeconomic categories, the findings of his study can be at odds with their findings. Thus, it is advised to use the policy recommendations with caution.

Ali and Azmi (2017), examined Evidence from OIC Countries on Remittances, Political Stability, and Economic Growth Utilizing data for the 20 years 1993–2012 from 16 OIC (Organization of Islamic Cooperation) nations. They looked at how political stability and remittances affected economic growth. To establish whether or not steady political situations are anticipated to improve the outcome of remittances, they also looked at the interface between remittances and political stability. The following is a summary of their findings: (1) Remittances have no discernible impact on the economies of the OIC, (2) Democracies are more effective than autocracies or dictatorships, and (3) Political stability lessens the impact of Remittances on development.

Imran et al. (2018), looked at the aggregate effect of international remittances on domestic human development in Pakistan's Punjab province. He used the most recent survey, the MICS 2014-15. A household-based human development index (HHDI) is based on three factors: housing, education, and health, and it provides detailed mechanism relevant to the linkage between remittances and human development. He examined the South, North, and Central regions of Punjab. His findings show that immigrant households outperform non-migrant households in all three regions, but this is especially true in South Punjab, which has the lowest HHDI values and the least economic development.

Kausar et al. (2019), examined how migration affects remittances and human development, which ultimately fuels global migration in order to fulfill their objective. They gathered information on remittances, migration, human development, political openness, political stability, population, corruption, FDI, trade, and for the SAARC countries between 2000 and 2014. Their investigation revealed that remittances, human development, and political openness are all impacted by migration, corruption trade and population. The majority of panel statistics reject the null hypothesis as the overall conclusion of their study using penal techniques. They might draw the conclusion that human development and migration are inextricably linked. Policymakers, traders, and economists all agree with the study's rationale.

Kabiru et al. (2021), examined Foreign Remittances, Good Governance, and Human Development in Sub-Saharan Africa: Evidence from FMOLS. For 20 nations in sub-Saharan Africa, they looked at the impact of foreign remittances and governance on human growth. Data from 1996 to 2019 was utilized. For long-run coefficients, they used the FMOLS and DOLS approaches. All of the variables are co-integrated, cross-section dependent, and I (1). According to their findings, sub-Saharan African governments and overseas remittances both support long-term human growth. The findings also demonstrated that while financial development has a favorable long-term impact on individual wellbeing in sub-Saharan Africa, population increase, inflation, and military spending have negative long-term effects on human development. They propose that policies should be put in place to attract and encourage sending remittances through official channels, particularly in relation to the cost of doing so to sub-Saharan Africa.

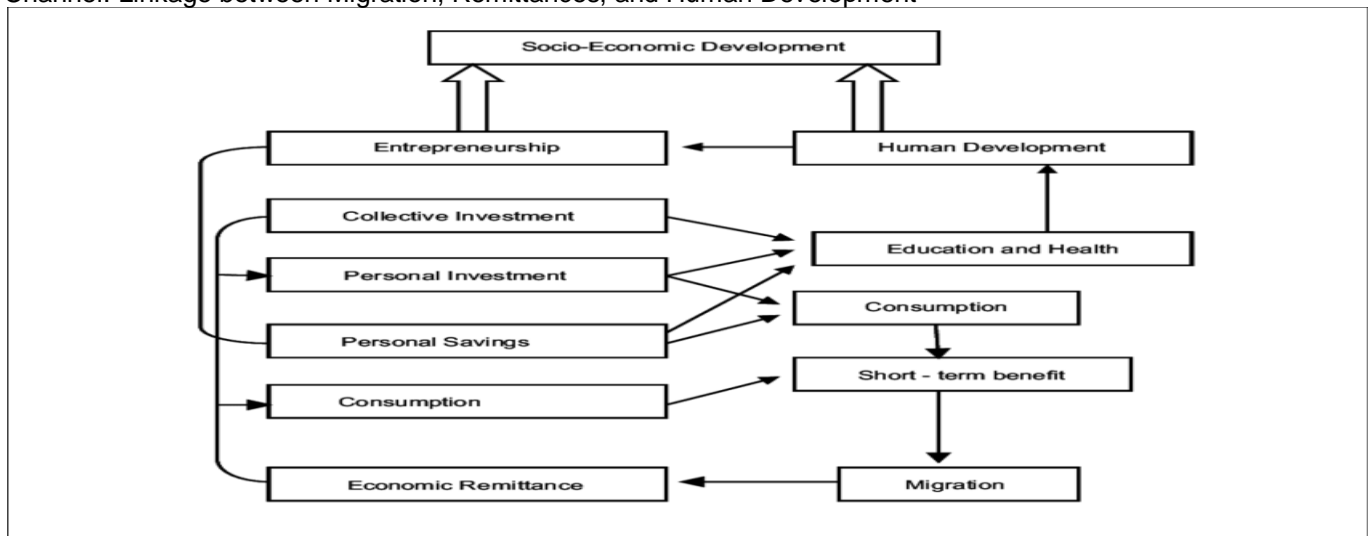
Shelton (2021) observed the relationship between migrant-sent money and economic growth, alongwith combined effects of migrant remittances and financial sector advancement on growth. The question of whether remittances complement or substitute financial development was also investigated. Over a 30-year period, he used dataset basedon a panel of 64 countries. To account for potential endogeneity, he used the system GMM approach. His estimation results showed that remittances have a positive but marginal effect on growth on their own. However, the positive coefficient on the interaction terms, which demonstrated a corresponding effect of remittance and economic development, showed that the variable was favorably significant in its interaction with the development of the economic sector. He sums up that remittances favour economic growth and that they complement financial development in this regard.

Kabiru et al. (2022), examined the linkage of human development and inflows of remittances among OIC members. They used data from 1990 to 2018. They found mixed stationary in their variables using the second-generation unit roots test. Their results of the Westerlund co integration method also showed that the variables had long-term correlations. The (DCCE) and (CS-ARDL) approaches' shorter and longer time horizon coefficients suggest that remittance inflows promote human growth. They demonstrated that, despite statistically insignificant short-run coefficients, both financial development and foreign direct investment inflows have a positive impact on human development. The causality test results revealed that there was only a one-way causal relationship between remittance inflows and human development, as well as a one-way causal relationship between financial development and human development. On the other hand, it was shown that HD and FDI had a bidirectional causal relationship. They concluded that remittances encourage human development in OIC member nations. The OIC's officials ought to take into account measures that will encourage migrant employees to send money home.

Different studies produced contradictory findings, but in the case of developing and OIC countries, remittances generally have little to no influence on human wellbeing and development because they are not used for productive investments, or other purposes, and they are often motivated by altruism. This theoretical review section explores the conceptual framework of social safety nets as a poverty reduction strategy. It includes diverse perspectives such as the capability approach, human development approach, and social exclusion approach (Hagen et al., 2017), emphasizing the need to address the multifaceted nature of poverty. Poverty, as defined by the World Bank (2022), involves pronounced deprivation of well-being, encompassing material deprivation, social exclusion, and limited opportunities (Sen, 1992; Alkire & Santos, 2014; Ali & Aisha, 2025). Social safety nets are aimed at addressing these complex and multidimensional aspects of poverty to improve the welfare of individuals and communities.

CONCEPTUAL FRAMEWORK

Channel: Linkage between Migration, Remittances, and Human Development



For a recipient country, remittances are a resource of foreign currency. They also help to stabilize the stability of accounts, which is fine for growth Ratha (2005). Given the aforementioned information, it is not shocking that personal remittance flows are significant contributors to the growth of recipient nations. Personal remittances make a sizable contribution to GDP. Additionally, they provide a means of living for numerous households in developing

nations. Since these flows directly affect households, it is crucial to assess their effects, making the distribution of funds just as significant as aid or FDI (Adams and Klobodu 2016)The hypothesis of the study are as follows;

- i) There is a positive association among migration and remittances.
- ii) There is a positive relationship between migration and human development.

MATERIALS AND METHODS

This section discussed the study's Methodology. This study uses two types of models where the former one excludes any covariates except the variable of interest and the latter one will include multiple variables with an extended econometric argument.

Bivariate Models

Bivariate analyses are used to determine how two sets of values are related. To determine the short-run and long-run relationships between remittances to migration and human development to migration, two bivariate models were constructed.

$$REM_{it} = \alpha_0 + \beta_1 MIG_{it} + \varepsilon_{it} \quad \text{Model 1}$$

$$HD_{it} = \alpha_0 + \beta_1 MIG_{it} + \varepsilon_{it} \quad \text{Model 2}$$

Multivariate Models

Multivariate models forecast potential outcomes by using multiple variables.

In order to measure the hypothesis, two multivariate models are also used.

$$REM_{it} = \alpha_0 + \beta_1 MIG_{it} + \beta_2 PO_{it} + \beta_3 PS_{it} + \beta_4 COR_{it} + \beta_5 POP_{it} + \varepsilon_{it} \quad \text{Model 3}$$

$$HD_{it} = \alpha_0 + \beta_1 MIG_{it} + \beta_2 POP_{it} + \beta_3 FDI_{it} + \beta_4 TRD_{it} + \beta_5 PS_{it} + \varepsilon_{it} \quad \text{Model 4}$$

Variable Description and Data Sources

The main goal of this study is examining the relationship and effects of migration on remittances and human development in the context of a selected OIC countries. To achieve the goal of this study, panel data from 2000 to 2019 was gathered for nine different economic variables, totaling 320 observations: corruption, foreign direct investment, human development, migration, political openness, population, political stability, remittances, and trade. Each nation's Human Development Index collects information on human development on a scale from 0 to 1, with 0 denoting the lowest human development and 1 denoting the highest human development. The International Migration Database gathered migration data values in the thousands and confirmed them with the United Nations Department of Economics and Social Affairs. Every nation's central bank gathers remittance information in US dollar units. Data of other variables including trade as percentage of GDP, foreign direct investment as (net inflows of GDP), population as population growth(Annual %), political stability data collected from polity5 which captures the polity score ,the regime authority spectrum, ranging from -10(monarchy) to +10 (consolidated democracy),Political openness is measured on a scale of 1 to 100 by the KOF index of globalization, and corruption is measured on a scale of 100 (highly clean) to 0 (highly corrupt) by the Transparency International Corruption Perception Index; all of these variables are used as proxies for control variables.

RESULTS AND DISCUSSION

Table 4.1. Descriptive Statistics.

| Variables | MIG | REM | HD | POP | TRD |
|--------------|----------|----------|----------|----------|----------|
| Mean | 17144.41 | 4814.937 | 0.649068 | 70614967 | 68.33038 |
| Maximum | 270626.0 | 26781.40 | 0.820000 | 2.71E+08 | 220.4068 |
| Minimum | 3843.0 | 2.243715 | 0.403000 | 2267973. | 1.218845 |
| Std. Dev. | 46892.68 | 6111.999 | 0.103678 | 71563600 | 39.32096 |
| Observations | 320 | 320 | 320 | 320 | 320 |

Author's own calculation

The above table 4.1 shows the results of descriptive statistics for the variables of Migration, Remittances, Human Development, population and trade. The table illustrates mean, minimum and maximum values for all the variables. According to our findings, all of the variables have a normal distribution. The study has total of 320 observations.

Table 4.2. Descriptive Statistics.

| Variables | FDI | COR | PO | PS |
|-----------|----------|----------|----------|-----------|
| Mean | 3.303199 | 2.944731 | 55.51735 | -0.071598 |
| Maximum | 55.07030 | 6.300000 | 81.39252 | 9.000000 |

| | | | | |
|--------------|-----------|----------|----------|-----------|
| Minimum | -4.541592 | 0.400000 | 31.25336 | -9.000000 |
| Std. Dev. | 5.776038 | 1.142897 | 11.64990 | 6.179721 |
| Observations | 320 | 320 | 320 | 320 |

Author's calculations

Table 4.2 discusses FDI, corruption, political openness and political stability variables. FDI has 3.303199 Mean value and has 5.776038 std-deviation's value. Corruption has 2.944731 mean while 1.14289 standard deviation values. Others variables like PO has 55.51735 mean value and 11.64990 of std- deviation while PS has -0.071598, 6.179721 mean and std-deviation values respectively.

Table 4.3. Correlation Matrix Results.

| | MIG2 | PS | POP | TRD | REM | HDI | FDI | COR | PO |
|-----|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| MIG | 1 | 0.149 | -0.052 | -0.219 | 0.249 | -0.145 | -0.114 | -0.068 | -0.063 |
| PS | 0.149 | 1 | -0.016 | 0.031 | 0.258 | -0.064 | -0.103 | -0.052 | 0.215 |
| POP | 0.052 | -0.016 | 1 | 0.041 | 0.007 | 0.042 | -0.096 | 0.102 | -0.047 |
| TRD | 0.219 | 0.032 | 0.045 | 1 | -0.376 | 0.512 | 0.267 | 0.429 | 0.505 |
| REM | 0.249 | 0.258 | 0.007 | -0.376 | 1 | -0.269 | -0.118 | -0.042 | -0.003 |
| HDI | 0.145 | -0.064 | 0.041 | 0.519 | -0.269 | 1 | 0.142 | 0.518 | 0.699 |
| FDI | 0.114 | -0.103 | -0.096 | 0.267 | -0.118 | 0.142 | 1 | -0.041 | 0.116 |
| COR | 0.068 | -0.051 | 0.102 | 0.429 | -0.042 | 0.518 | -0.041 | 1 | 0.645 |
| PO | 0.063 | 0.215 | -0.047 | 0.505 | -0.003 | 0.699 | 0.116 | 0.645 | 1 |

Author's calculation

Table 4.4. Cross-Sectional Dependence Test.

| Model-1 | Model-2 | | | Model-3 | | | Model-4 | | | | | |
|-------------------|---------|-----|------|---------|-----|------|---------|-----|------|--------|-----|------|
| Test | Stat | Df | Prob | Stat | Df | Prob | Stat | Df | Prob | Stat | Df | Prob |
| Bruesh-pagan LM | 1951.04 | 120 | 0.00 | 599.92 | 120 | 0.00 | 910.54 | 120 | 0.00 | 1636.7 | 120 | 0.00 |
| Pesaran scaled LM | 118.194 | | 0.00 | 30.978 | | 0.00 | 51.03 | | 0.00 | 97.91 | | 0.00 |
| Pesaran CD | 41.02 | | 0.00 | 10.25 | | 0.00 | 18.83 | | 0.00 | 36.91 | | 0.00 |

Author's calculation

Results for cross-sectional dependence were shown in the table 4.4. If the Probability value of all the tests is less than 0.05, reject the null hypothesis and accept the alternative hypothesis. We find that cross-sectional dependence exist. For prediction reliability of cross-sectional dependency over the long term, the analysis employed second-generation econometric approaches.

Table 4.5. 2nd Generation Unit Root.

| Variables | Pesaran –CIPS | Stationary at, |
|-----------|---------------|----------------|
| MIG | < 0.01 | I(0) |
| HDI | < 0.10 | I(0) |
| REM | > = 0.10 | Not stationary |
| TRD | < 0.01 | I(1) |
| PS | >= 0.10 | Not stationary |
| PO | < 0.01 | I(1) |
| FDI | <0.01 | I(0) |
| COR | <0.01 | I(1) |
| POP | <0.01 | I(1) |

Author's self-calculation

Unit root test of various factors are shown in the above table 4.5. The results show that Migration, Human Development Index and Foreign Direct investment are stationary at level. Other variables like Trade, Political Openness, Corruption and Population are stationary at 1st difference while Remittances and Political Stability are not stationary at any level.

Table 4.6: Correlated Random Effects-Husman's Test.

| | Model 1 | Model 2 | Model 3 | Model 4 |
|--------------|----------------------|----------------------|----------------------|----------------------|
| Test summary | Cross-section random | Cross-section random | Cross-section random | Cross-section random |
| Chi-sq | 9.633 | 42.111 | 3.8618 | 11.867325 |
| Chi-sq df | 1 | 5 | 1 | 5 |
| Prob | 0.002 | 0.0000 | 0.04 | 0.0367 |

Author's calculation

The Hausman test is also known as the model misspecification test. In panel data analysis, the Hausman test helps to differentiate between fixed-effects and random effects tests. In essence, the test determines whether the model's regressors and unique errors are related. No relationship between the two exists as per our null hypothesis.

These are the hypothesis of the test

Ho: The random effect Regression is appropriate.

H1: The fixed effect Regression is appropriate.

5% level of statistical significance criteria rejects the null hypothesis and accepts the alternative hypothesis as p-value is less than 0.05. Therefore, Hausman test confirms the endogeneity and is in the favor of fixed effect model in all of the study's models.

Table 4.7. Fixed effect Results.

| Fixed Effect for REM | | | | | |
|----------------------|-------------|--------|-------------|--------|------|
| Multivariate | | | Bivariate | | |
| Variable | Coefficient | Prob | Coefficient | Prob. | |
| C | -0.410697 | | 20.60077 | 0.0000 | |
| MIG | 0.0000002 | 0.9941 | 1.633529 | 0.1034 | |
| PO | 0.115982 | 0.0000 | | | |
| PS | 0.056409 | 0.0022 | | | |
| COR | 0.465168 | 0.0000 | | | |
| POP | 0.047111 | 0.4936 | | | |
| R-square | 0.87 | | | | 0.64 |

Author's self-calculation.

Table 4.7 showing the results of the fixed effect model in this table, two types of models, multivariate and bivariate, are shown. Remittance (REM) is the dependent variable of the study's models. Multivariate model migration (MIG) has a positive but statistically insignificant impact on remittances (Ali and Azmi, 2017; Barajas et al., 2009; Adams and Klobodu, 2016). Our results also match up to those of (Chimi et al. 2005). Further, our results are also according to the endogenous migration approach. A one-unit rise in the MIG will lead to an increase in the REM by 0.0000002 percent. (PO) has a significant positive impact on REM; if the PO increases by one unit, the REM will also increase by 0.12 percent. PS and COR also have a positive and significant impact on REM (Farzana et al. 2019), which is 0.056 and 0.465, respectively. The POP is statistically insignificant but has a positive impact on REM (Farzana et al. 2019). If the POP increases by one unit, the REM will also increase by 0.047 percent. The value of R-square shows that 87 percent of the change in the dependent variable is due to the model's variables, and the rest is due to other factors. In the bivariate model, the MIG has a positive but insignificant impact on REM. R-square shows that 64 percent of the change in the model is due to MIG.

Table 4.8. Fixed Effect Results.

| Fixed Effect for HD | | | | | |
|---------------------|-------------|--------|-------------|--------|------|
| Multivariate | | | Bivariate | | |
| Variable | Coefficient | Prob | Coefficient | Prob. | |
| C | 0.668406 | | 20.60077 | 0.0000 | |
| MIG | 0.00000004 | 0.9941 | 1.633529 | 0.3498 | |
| POP | 0.007430 | 0.0000 | | | |
| FDI | 0.000560 | 0.0022 | | | |
| TRD | -0.000478 | 0.0000 | | | |
| PS | 0.000588 | 0.4936 | | | |
| R-square | 0.89 | | | | 0.87 |

Author's calculation

Table 4.8 shows the results of the fixed effect model. Multivariate model migration (MIG) has a positive but statistically insignificant impact on HD. A one-unit increase in the MIG will correspond to an increase in the HD by

0.00000004 percent. Our results are reliable with the findings of Barajas et al. (2009) and Adams and Klobodu (2016). POP has a positive and significant impact on HD, as one unit increase in POP will also increase HD by 0.007430 percent. If the PO increases by one unit, the HD will also increase by 0.0074 percent (Farzana et al. 2019). TRD has a negative and significant impact on HD, AS one unit increase in TRD will decrease HD by 0.00056 and 0.00047, respectively. The positive and statistically significant impact of PS and FDI is shown in the table. One unit increase in the PS and FDI will also increase HD by 0.000588, 0.00560, respectively. Our results are in line with Ali and Azmi's 2017 results. The R-square shows that 89 percent of the change in the dependent variable is due to the model's variables, and the rest is due to other factors. MIG has an insignificant positive impact on HD. In the bivariate model, one unit increase in MIG will increase HD by 1.633529 percent. R-squared shows that 87 percent of the change in the model is due to MIG. Our results are reliable with those studies (Barajas et al., 2009; Adams and Klobodu, 2016).

Table 4.9. Co-integration Test.

| | Model 1 | | Model 2 | |
|---------------------|-----------|-------|----------|-------|
| | Stat | Prob. | Stat | Prob. |
| Within dimension | | | | |
| Panel v-Statistic | -0.156915 | 0.56 | 30.16096 | 0.00 |
| Panel rho-Statistic | | | 3.554196 | 0.99 |
| Panel PP-Statistic | 3.672024 | 0.99 | 0.042829 | 0.517 |
| | 1.298771 | 0.003 | | |
| Panel ADF-Statistic | -2.858183 | 0.002 | -1.67636 | 0.056 |
| Between dimension | | | | |
| Group rho-Statistic | 4.283851 | 1.00 | 4.737626 | 1.00 |
| Group PP-Statistic | -5.570799 | 0.00 | -1.49175 | 0.067 |
| Group ADF-Statistic | -4.311877 | 0.00 | -1.83911 | 0.033 |

Author's calculation

Pedroni (1996) suggests seven different panel co-integration tests to assess if there is or is not co-integration among the theories. The hypothesis for the tests are,

Ho = There is no co-integration

H1 = There is co-integration

While making a decision, take into account the results of all of these tests. If the majority of them yield a p value of less than 0.05%, then reject the null hypothesis and accept the alternative one since the maximum number of significant findings supports the existence of co-integration in our results. According to our results, the majority of the tests have a p-value of less than 5%, so co-integration exists by accepting the null hypothesis.

Table 4.10. Fully Modified Ordinary Least Square Test Results.

| FMOLS for REM | | | | | |
|---------------|--------------|--------|--|-------------|--------|
| Variable | Multivariate | | | Bivariate | |
| | Coefficient | Prob | | Coefficient | Prob. |
| MIG | 0.00000009 | 0.9941 | | 0.469910 | 0.6388 |
| PO | 0.106862 | 0.0000 | | | |
| PS | 0.059740 | 0.0022 | | | |
| COR | 0.592423 | 0.0000 | | | |
| POP | 0.076267 | 0.4936 | | | |

Author's calculation

Table 4.10 illustrates the results of the FMOLS Model. For each of the four models, FMOLS determines long-run flexibility and to find the regression coefficients. Results for remittance models are presented in the below table. Remittance (REM) is the dependent variable of the study's models. Migration (MIG) has a positive but statistically insignificant impact on remittances in the multivariate model. A oneunit increase in the MIG leads to an increase in the REM by 0.000000009 percent (Barajaset et al., 2009; Adams and Klobodu, 2016). Our results also match up with

Chami et al. (2005), who quarrel that remittances are not profit-driven and that PO, PS, and COR significantly positively affect remittances (Ali and Azmi 2017). While POP has a positive but insignificant impact on remittances (Farzana et al. 2019). In the bivariate model, MIG is also statistically insignificant and has a positive impact on REM. Chami et al. (2005).

Table 4.11. Fully Modified Ordinary Least Square Test Results.

| FMOLS for HD | | | Bivariate | | |
|-----------------------|-------------|--------|-------------|--------|--|
| Multivariate Variable | Coefficient | Prob | Coefficient | Prob. | |
| Mig | 0.0000008 | 0.2947 | 0.00000009 | 0.2155 | |
| Pop | 0.013945 | 0.0297 | | | |
| Ps | 0.000373 | 0.7504 | | | |
| Trd | -0.000568 | 0.0349 | | | |
| Fdi | -0.001348 | 0.5233 | | | |

Author's calculation

In the table 4.11, results of FMOLS for HD-dependent models are illustrated. In the multivariate model, Migration (MIG) has a statistically insignificant positive impact on remittances. A one-unit increase in the MIG will correspond to an increase in the HD by 0.0000008 percent (Chami et al., 2005; Adams and Klobodu, 2016). POP has a significant positive impact on HD. The PS has a positive but insignificant impact on HD. TRD negatively affects HD. showing the significance, while FDI shows the positive and insignificant impacts on HD (Ali and Azmi 2017). MIG is statistically insignificant and has a positive impact on HD. As MIG increases by one unit, HD will also increase by 0.0000009 percent.

Table 4.12. Error Correction Model Results.

| | Model 1 | | Model 2 | | Model 3 | | Model 4 | |
|---------|-----------|--------|----------|--------|------------|--------|------------|--------|
| C | 354.8131 | 0 | 255.3253 | 0.0006 | 0.00564 | 0 | 0.005667 | 0 |
| D(MIG2) | 0.002086 | 0.0463 | 0.002269 | 0.0278 | -0.0000008 | 0.1158 | -0.0000007 | 0.167 |
| D(PO) | | | 157.9255 | 0.0089 | | | | |
| D(COR) | | | 528.2912 | 0.0256 | | | | |
| D(PS) | | | -26.2017 | 0.4708 | | | | |
| D(TRD) | | | | | | | -0.00006 | 0.1567 |
| D(POP2) | | | | | | | 0.002106 | 0.0092 |
| D(FDI) | | | | | | | -0.00009 | 0.3735 |
| D(PS) | | S | | | | | -0.00027 | 0.1263 |
| ECT | -0.039678 | 0.0007 | 0.040459 | 0.0007 | -0.00569 | 0.0613 | -0.0056 | 0.1121 |

Author's calculation

For each of the four models, vector error correction estimates have been run to evaluate the short-run connection among the variables. In Model 1, LREM is the dependent variable, while MIG is an independent variable. In this model, ECT has a negative value, and there is a short-run relationship. There is 0.0397 of convergence towards equilibrium. Our results are in line with Farzana et al. (2019), who found that MIG has a significant and positive effect on Rem in the short run. In model 2, LREM is the dependent variable, while MIG, PO, POP, COR, and PS are the independent variables. As the ECT has a positive value in the shorter time horizon there is no relationship between the dependent and independent variables and a 0.0404 divergence from equilibrium. In model 3, HD is an independent variable while MIG is a dependent variable. There is a 0.0057 convergence towards equilibrium in this model. ECT has a negative value; there is presence of short-run relationship. Model 4 exhibits that HD is the dependent variable, while MIG, TRD, POP, FDI, and PS are the independent variables. A short-run affiliation does not exist due to the positive ECT. There value of is 0.0056 of divergence from equilibrium.

CONCLUSION AND POLICY RECOMMENDATIONS

The main goal of the study is to examine the relationship and effects of migration on remittances and human development from the perspective of OIC member countries. Four alternative models were formed for the testing of the hypothesis. We find that there is a constructive or positive association between migration and either bivariate or multivariate models. These findings support our hypothesis. Because remittances are not used for productive measures in developing countries. Additionally, our findings support the claims made by Chami et al. (2005) that remittances are not driven by profit and do not influence economic progress. Our findings are also consistent with the endogenous migration theory, which contends that remittances are driven by altruistic intentions. We believe that the majority of remittances are made out of altruism, which is why our findings are not shocking or unexpected, given that many OIC nations are impacted by war and terrorism.

This study also discovered that mainstream panel statistics had a favorable but small impact on remittances and HD migration. According to these findings, FDI—which is found to have a significant impact on our estimates—might be more important for these nations than remittances as a source of financial flow.

This investigation can be strengthened using extensive data and additional macroeconomic variables. This study can be applied to other nations, not just undeveloped ones but also other OIC nations, and it will likely yield some useful information for improving the migration issue. The government should create an enabling political and societal environment to keep its workforce and support the nation's economic operations. According to study findings, remittances have less of an impact on nations with more stable political systems. This suggests that nations with more stable political systems may not always need to rely on remittances (Ali and Azmi, 2017). Policymakers in the OIC should take into account measures that will attract migrant workers to send money home. Policies that encourage sending remittances through authorized channels should be implemented in order to advance human development.

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