THE EFFECT OF THE QUALITY OF REMITTANCES ON HEALTH INEQUALITY IN VIETNAM: THE REGULATORY ROLE OF QUALITY OF GOVERNANCE INSTITUTION

Nguyen Thi Bich Tram¹, Hoang Thu Hien², Vu Thi Thanh Binh³, Hoang Minh Quyen⁴ and Vu Ngoc Khanh⁵

¹,²,³,⁴,⁵National Economics University

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ABSTRACT

The study examines the effect of remittances on health inequality: the regulatory role of quality of governance institutions in 63 provinces in Vietnam through the Vietnam Household Living Standard Survey (VHLSS) and the Vietnam Provincial Governance and Public Administration Performance Index (PAPI) within 5 years (2012, 2014, 2016, 2018 and 2020). The article measures health inequality using the Atkinson index through the health index proposed by Bui and Erreygers (2020). Applying the general method model of moments (GMM), the study shows that remittances have a negative effect on health inequality. From there, the study proposes recommendations to improve health inequality in Vietnam.

Keywords: Remittances, quality of governance institutions, health inequality.

1. INTRODUCTION

The emergence and global outbreak of the Covid-19 pandemic have attracted a significant amount of research on the topic of health inequality. Specifically, the authors have focused on access to healthcare services, vaccination rates, maternal and child mortality rates, and more. Most studies indicate that health inequality is increasing globally and poses a profound risk to economic, political, and social stability in certain countries (Ahmed et al. 2022).

Some opinions suggest that in order to minimize the consequences of health inequality on the global economy, it is necessary to identify the factors that contribute to its increase or decrease (Vo et al. 2019). Particularly, trends such as globalization and international labor migration have led to a significant increase in migration rates and remittances, which have become major sources of investment in developing countries (Guettat and Sridib, 2017; Tamar and Nino, 2023).
Consequently, the impact of remittances on health inequality has gained more attention from researchers.

Most studies indicate that under the influence of remittances, health inequality tends to decrease. Hildebrandt et al. (2005) found a positive correlation between remittances and access to high-quality healthcare facilities for the poor. Research suggests that remittances help increase household income and encourage higher spending on health services. As a result, children in disadvantaged households receive better healthcare, reducing the risks of illness and mortality. This demonstrates that remittances from migrants make a significant contribution to narrowing the health inequality gap between poor households and those with better conditions.

However, some authors also argue that remittances contribute to increasing health inequality. Specifically, remittances can create disparities in accessing local healthcare services. A study by J. Valdero-Gil (2009) showed that not all households receive remittances and benefit from them. Therefore, remittances widen the gap in access to healthcare services and health outcomes between recipient households and the rest. Similar conclusions have been found in studies by McKenzie (2006); Alcaraz and Salcedo (2012).

From previous research, it can be observed that the impact of remittances on health inequality depends on various factors such as geography, economics, and quality of governance (Arango, 2000; De Haas, 2010). Particularly, the quality of governance plays a significant role in effectively utilizing remittances for investment in health and social sectors. In countries with good governance, remittances can be efficiently utilized to invest in healthcare facilities, build hospitals and schools in disadvantaged areas, provide higher wages for healthcare workers, and support health insurance for the population, thereby reducing health inequality among different social groups (Gupta et al. 2001). On the other hand, in countries with weak governance, high corruption rates, and low social equity, remittances are often not used effectively for legitimate purposes (Tanzi and Davoodi, 2001). Instead of investing in healthcare equipment and helping people seek medical treatment in hospitals, remittances in these countries are used for unnecessary expenses (Gupta et al. 1998), hindering economic development, exacerbating social inequality, and widening the gap in health inequality between the rich and the poor, urban and rural areas.

However, previous studies have often focused on the relationship between remittances and the health outcomes of local populations without delving into the issue of health inequality in society and the factors that influence this relationship (Ponce and Onofa, 2011). This study aims to clarify the effects of remittances on health inequality and the role of governance quality in effectively utilizing remittance funds in Vietnam. Consequently, the authors provide
recommendations to reduce health inequality and improve governance quality toward sustainable economic development and social equity.

The article consists of five parts: Introduction, Theoretical Foundation, Research Methodology, Research Findings, Conclusion and Recommendations.

2. LITERATURE REVIEW.

2.1. The effect of the quality of remittances on health inequality

Health inequality is understood as the unfair disparity in access, availability, utilization, and quality of healthcare services among individuals, communities, or nations (O'Neill, 2001; Fleurbaey et al. 2009). One of the factors influencing health inequality can be attributed to remittances sent by migrants (McKenzie and Sasin, 2007; Zhunio et al. 2012; Green et al. 2019). Some studies suggest that remittances help reduce health inequality, while others have found contrary results (McKenzie and Sasin, 2007; Pernia, 2008).

On the positive side, (1) *remittances contribute to increasing financial resources for the healthcare system and improving access to healthcare services for vulnerable populations (Gupta et al. 1998)*. Remittances provide crucial financial resources for investing in healthcare systems and infrastructure in remote and underdeveloped regions. Developing countries can utilize these financial resources to build and upgrade healthcare infrastructure, provide necessary equipment and medications, and enhance the recruitment and training of healthcare personnel, thereby enabling underserved areas to access quality healthcare services comparable to those in urban and economically prosperous regions (Drabo and Ebeke, 2011). As a result, remittances contribute to reducing health inequality between disadvantaged and developed regions. (2) Remittances reduce the mortality rate among the elderly and young children in economically disadvantaged areas. A study by Green et al. (2019) in Kyrgyzstan demonstrated that pregnant women in migrant remittance-receiving households had better access to specialized prenatal care and a higher likelihood of delivering healthy newborns due to better nutrition absorption from the mother, compared to pregnant women in financially constrained households or households without remittance inflows. Additionally, Zhunio et al. (2012) found that a 1% increase in remittances leads to a 0.03% increase in average life expectancy and a 0.15% decrease in infant mortality rate. These findings were derived from Zhunio et al. (2012) study on remittance flows and healthcare outcomes in 69 low-income countries. (3) Remittances enhance the well-being and mental health of migrants (Bhugra et al. 2004; Priebe et al. 2016). A study by Priebe et al. (2016) indicated that migrants who send remittances to their home countries experience better mental health compared to those who do not send remittances. Similarly, Livingston et al. (2001) highlighted that remittances provide comfort and empathy, alleviating financial and economic
stress faced by migrants and their families. In contrast, individuals who do not receive remittances are more prone to depression due to prolonged financial and anxiety-related stress, leading to increased psychological disconnection from their communities and contributing to health inequality (Livingston et al. 2001). Based on these studies, it is evident that remittances play an important role in reducing health inequality.

On the negative side, (1) remittances may lead to brain drain, depriving particularly challenging regions of access to healthcare professionals, as they tend to migrate to economically more developed areas for remittance opportunities (Kangasniemi et al. 2007). This phenomenon results in a shortage of healthcare professionals in the migrants' home countries and an oversupply of healthcare professionals in larger cities, thereby exacerbating healthcare access inequality (Kangasniemi et al. 2007). (2) Remittances contribute to healthcare disparities (D. Ratha and Mohapatra, 2007; Valdero-Gil, 2009). While many studies suggest that remittances bring financial benefits to families and individuals, not everyone can enjoy these benefits (Valdero-Gil, 2009). Low-income families or those without strong remittance connections may face difficulties in accessing healthcare due to financial constraints (Valdero-Gil, 2009). This creates inequality in access and generates disparities in healthcare between individuals with and without remittance connections. (3) Remittances are one of the factors contributing to increased hospitalization rates among households receiving remittances (McKenzie, 2006). In Mexico, remittances prevent adults in the family from providing care for their children, leading to children in these families having remittances but being unable to sustain themselves. Children between the ages of 10 and 16 have to work strenuously, resulting in issues such as malnutrition, stunted growth, and gastrointestinal diseases. In contrast, children in wealthier families receiving remittances have access to advanced healthcare and can address many health problems (McKenzie, 2006; Alcaraz et al. 2012). Based on these studies, it can be observed that remittances contribute to increasing health inequality. To gain a comprehensive understanding, further research and detailed analysis of this impact are needed in specific countries and territories.

The authors of this study build upon and expand previous research on the impact of remittances on health inequality. In this study, the authors propose the hypothesis:

(H1): Remittances have an inverse impact on the health inequality rate in Vietnam.

2.2. The effect of the quality of remittances on health inequality

Many scholars around the world affirm that political factors, specifically the quality of governance, have a significant impact on the relationship between remittances and health inequality. Good governance is a prerequisite for countries to effectively invest in healthcare,
improve the population's health, and reduce health inequality (Delery and Doty, 1996; Bowen and Ostroff, 2004; Collins and Smith, 2006).

On one hand, good governance enables countries to efficiently utilize remittance funds to reduce health inequality. According to a report by the European Commission (2017), the quality of governance strongly influences governments' remittance investment decisions in improving hospital quality, enhancing public health, and facilitating access to basic healthcare services. In countries with good governance, remittances can be used to build additional hospitals and healthcare facilities in disadvantaged areas, provide higher wages for healthcare professionals, and establish social insurance for the population (Klomp and Haan, 2008). Consequently, remittances contribute to increased healthcare access, high-quality medical services, and a decrease in the risks of infectious diseases, maternal mortality, and infant mortality (Gupta et al. 2001). Overall, good governance provides a foundation for remittance funds to easily, promptly, and effectively address health-related issues, promote health, and reduce health inequality in certain countries, including Vietnam.

On the other hand, countries with poor governance, characterized by high corruption rates, reduced investment, and low social equity, pose barriers to improving health inequality through remittances. In these countries, remittance funds are often misused for improper purposes, driven by individual gains rather than improving healthcare quality and public health (Tanzi and Davoodi, 1998). The reduction in investment funds from remittances leads to inadequate medical equipment in hospitals and healthcare facilities, hindering their ability to provide adequate healthcare services to the population (Mauro, 1998). In rural areas, people face additional challenges in accessing healthcare facilities and health knowledge due to the lack of investment from remittances, influenced by factors such as corruption (Akcay, 2006). It is evident that poor governance acts as a barrier to effective remittance investment in healthcare and contributes to increased health inequality in these countries.

Overall, the quality of governance directly affects and strongly influences the relationship between remittances and health inequality. Based on previous research findings, the authors propose the hypothesis:

(H2): The quality of governance positively affects healthcare inequality rates.

3. METHODOLOGY

3.1. Data

The article uses data from the following sources:
First, the Vietnam Household Living Standard Survey (VHLSS) for 5 years 2012, 2014, 2016, 2018, and 2020 to measure health inequality.

Second, the Vietnam Provincial Governance and Public Administration Performance Index (PAPI) is conducted annually by the United Nations Development Program (UNDP), the Vietnam Fatherland Front and the Centre for Community Support Development Studies (CECODES) are used to measure the quality of provincial governance institutions in Vietnam.

Third, a number of data sources are published from the Statistical Yearbook of the General Statistics Office of Vietnam for each locality, for example, urban-rural population ratio, poverty rate, GDP per capita growth, Socio-Economic regions.

3.2. Measure

Measuring remittances, based on the concept of the International Monetary Fund and the available data of the VHLSS, remittances are defined as all cash and in-kind values for subsistence use by outsiders members who give, donate, celebrate and help send from home and abroad. In addition, to have a clearer view of the impact of remittances on health inequality, the study measures remittances through remittances per capita of 63 provinces and cities calculated by taking the total remittances of each province divided by the population of that province in the survey year as suggested by Nguyen and Nguyen (2015).

Measuring governance quality, the Provincial Governance and Public Administration Performance Index (PAPI) is frequently used in studies on governance quality and PAR implementation in Vietnam. Giang et al (2014); Jairo et al (2015); Hue (2019); Dao Quyet Thang et al (2021). Therefore, in this study, the authors use the Provincial Governance and Public Administration Performance Index (PAPI) to measure the governance quality of 63 provinces and cities in Vietnam.

Measuring health inequality, the article uses the Atkinson inequality index number to measure health inequality through the health index $h_i$

Firstly, the study builds a health variable to measure the health aspect indirectly as suggested by Bui and Erreygers (2020). An individual's health index $h_i$ is a comparison of this individual's health expenditures with their total expenditures (the total expenditures are the equivalized per capita consumption augmented with the health expenditures). Health expenditures include the total amount an individual pays for themselves and the amount covered by health insurance for medical services at medical facilities. To calculate the health index $h_i$, the study uses the following formula (1) as proposed by Bui and Erreygers (2020):
\[ h_i = 1 - \frac{t_i}{t_i + c_i} = \frac{c_i}{t_i + c_i} \] (1)

Where:

\( c_i \) is consumption expenditures
\( t_i \) is health expenditures

Secondly, to calculate health inequality, the study uses the Atkinson inequality index proposed by Atkinson (1970) according to the formula (2):

\[ I = 1 - \left[ \frac{1}{n} \sum_{i=1}^{n} \left( \frac{h_i}{\mu(h)} \right)^{1-\epsilon} \right]^{\frac{1}{1-\epsilon}} \] (2)

Where:

\( h_i \) is individual's health index
\( \mu(h) \) is the average attainment in health
\( \epsilon \) is a parameter capturing the degree of aversion to inequality

3.3. Empirical methodology

Firstly, to analyze the impact of remittances on health inequality, the authors consider through regression equation (1)

\[ AI_{jt} = \beta_0 + \beta_1 \cdot rem_{jt} + \beta_2 \cdot rem_{jt} \cdot papi_{jt} + \beta_3 \cdot X_{jt} + u_{jt} \] (1)

Trong đó:

\( AI_{jt} \) is health inequality index of province j in year t, measured by Atkinson index

\( rem_{jt} \) is remittances per capita of province j in year t

\( papi_{jt} \) is the quality of governance institutions of province j in year t, measured by the PAPI

\( X_{jt} \) are control variables, including urban population, poverty rate, GDP per capita growth, Socio-Economic regions

\( u_{jt} \) are unobservable variables
Secondly, to estimate the regression equation, the study uses the Generalized Method of Moments (GMM). Many previous studies looking at the relationship between factors and health inequality have shown endogenous phenomena. Therefore, in order to avoid endogeneity in the model, the study uses the GMM method to overcome it as suggested by Hansen (1982).

Besides, the Hansen test (or Sargan test) is used to ensure that the GMM estimates are appropriate. This is a test of over-identifying restrictions or the fit of an instrumental variable in the GMM model. The results in Table 1 show that, with the condition P-value>0.1, all the instrumental variables used in the model are reasonable.

Using the Arellano - Bond (AR) test to test the autocorrelation property of GMM model variance in the form of second difference (AR(2)) as proposed by Arellano and Bond (1991). With the condition that the P-value>0.05 and the closer the P-value is to 1, the more no 2nd order autocorrelation is shown for the residuals. The results in Table 1 show that there is no 2nd order autocorrelation for residuals in the estimated model.

4. RESULTS

Table 1: The effect of the quality of remittances on health inequality in Vietnam: the regulatory role of quality of governance institutions

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coeff.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health inequality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lagged of health inequality</td>
<td>-0.176***</td>
<td>0.018</td>
</tr>
<tr>
<td>Remittances</td>
<td>-0.031**</td>
<td>0.00002</td>
</tr>
<tr>
<td>Quality of governance institutions</td>
<td>-0.0081**</td>
<td>0.0037</td>
</tr>
</tbody>
</table>

Control variable

<table>
<thead>
<tr>
<th>Urban - rural population ratio (Collate: Rural population)</th>
<th>Urban population ratio</th>
<th>Coeff.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban population ratio</td>
<td>-0.0347***</td>
<td>0.0079</td>
<td></td>
</tr>
<tr>
<td>Ratio</td>
<td>Coefficient 1</td>
<td>Coefficient 2</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---------------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>Poverty rate</td>
<td>-0.0009***</td>
<td>0.00017</td>
<td></td>
</tr>
<tr>
<td>GDP per capita growth</td>
<td>0.00003**</td>
<td>0.00002</td>
<td></td>
</tr>
<tr>
<td>Socio-Economic regions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Collate: The northern midlands and mountainous region)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Red river delta</td>
<td>0.0049</td>
<td>0.0047</td>
<td></td>
</tr>
<tr>
<td>The North central and Coastal</td>
<td>-0.0129***</td>
<td>0.0038</td>
<td></td>
</tr>
<tr>
<td>The Central Highlands</td>
<td>-0.0034</td>
<td>0.0042</td>
<td></td>
</tr>
<tr>
<td>The Southeast region</td>
<td>-0.0104</td>
<td>0.0067</td>
<td></td>
</tr>
<tr>
<td>The Mekong Delta region</td>
<td>-0.0106**</td>
<td>0.0043</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>0.0423***</td>
<td>0.0063</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>246</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Instruments</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wald &gt; chi2 (11)</td>
<td>1827.26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prob &gt; chi2</td>
<td>0.000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p<0.1; ** p<0.05; ***p<0.01

Source: Extract from STATA.
The results presented in Table 1 demonstrate a significant negative impact of remittances on health inequality at the 1% significance level. Specifically, an increase of 1 million per capita in remittances leads to a reduction of 0.031 points in the Atkinson index for health. These findings align with the observations made by Mohapatra and Ratha (2011); Zhunio et al. (2012); Green (2019). The reason is that households receiving remittances tend to invest more in healthy and nutritious foods (Mohapatra and Ratha, 2011), especially in low-income countries. On average, remittance flows improve people's health, increase life expectancy and reduce health disparities, thereby reducing inequality (Zhunio et al. 2012). Therefore, the hypothesis (H1) that the research team put forward is proven.

Research results on the effect of remittances on health inequality with the regulatory role of quality of governance institutions show that: quality of governance institutions can moderate the relationship between remittances and health inequality. Accordingly, if the quality of governance institutions is good, the health inequality will decrease, specifically, when the quality of governance institutions increases by 1 point, the health inequality will decrease by 0.0081 points. This result is similar to Klomp and Haan (2008); Ferraral and Nistico (2019). This is because good governance and strong health policies that promote disease prevention, discourage tobacco consumption and encourage the use of healthy nutrients can have a positive impact on the health of the people, especially the disadvantaged and low-income groups in society, and reduce health inequalities (Ferraral and Nistico, 2019).

In addition, Table 1 also shows that the urban-rural population ratio and the poverty rate have an impact on health inequality. Specifically, the proportion of the urban population and the rate of poor households increased by 1% and the health inequality decreased by 0.0347 and 0.0009 points respectively. However, when GDP per capita growth increased by 1%, health inequality increased by 0.0003 points. In addition, health inequality varies across Socio-Economic regions of Vietnam.

5. CONCLUSION

With data from 63 provinces and cities over 5 years (2012, 2014, 2016, 2018, and 2020), the study examines the impact of remittances on health inequality and the regulating role of governance quality in Vietnam. The results reveal an inverse relationship between remittances and health inequality, indicating that an increase in remittances leads to an improvement in health inequality. Additionally, the study identifies the role of governance quality in regulating and reducing health inequality in Vietnam.

Based on the research findings, it can be concluded that improving governance quality, promoting migration, and attracting remittances are essential for addressing health inequality in Vietnam.
Vietnam. Specifically, the government should implement policies and provide support to encourage planned, efficient, and legal migration, aiming to enhance the quality of life. Moreover, specific measures should be taken to facilitate the adaptation of migrants to life in host countries, such as reducing bureaucratic procedures, residency requirements, and improving access to education and healthcare services for immigrants. Alongside providing stable living conditions, ensuring job security, and creating material prosperity for migrants, the government and state authorities should also formulate appropriate policies to attract investment capital from remittances, with a focus on developing the economy and society, particularly in healthcare activities to improve public health and narrow the gap in health inequality among different population groups.

The results also emphasize that governance quality plays a crucial role as a foundation for maximizing the effectiveness of remittance investment in reducing health inequality. Therefore, the government needs to make efforts to improve governance quality, combat corruption, and enhance investment policies related to healthcare and public health. Specifically, national and local authorities should effectively and efficiently allocate remittance funds to enhance the quality of hospitals and healthcare facilities in rural and difficult areas, enabling easy access to high-quality healthcare services, and promoting health knowledge and awareness among the population.

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