

Article Type (Research article/Review article)

Remittances and Nutrition: A Panel Study of Selected Developing Countries in Asia

Farida Rahmawati^{1*}, Azizah Nur'aini², Aisyah Naharus S³, Afrinise Nasywa⁴

¹Faculty of Economics and Business, Universitas Negeri Malang

²Faculty of Economics and Business, Universitas Negeri Malang

³Faculty of Economics and Business, Universitas Negeri Malang

⁴Faculty of Economics and Business, Universitas Negeri Malang

*Corresponding email: farida.rahmawati.fe@um.ac.id

Abstract: This study investigates the effect of remittances on undernutrition in eight developing Asian countries from 2017 to 2022. Using a panel data fixed effect regression, it analyzes how personal remittances (% of GDP) influence the prevalence of undernourishment, with controls including GDP per capita, urban population, school enrollment, and domestic credit to the private sector. The results show that remittances significantly reduce undernutrition, highlighting their role in improving household access to nutritious food and health services. Domestic credit also contributes significantly to lowering undernutrition, suggesting the importance of financial inclusion. While other variables were not statistically significant, their directions align with development theory. The findings emphasize that remittances are not merely financial transfers but serve as tools for enhancing social welfare. This research provides cross-country evidence and supports policy efforts to maximize the developmental impact of remittance inflows.

Keywords: Domestic Credit to Private Sector, GDP per Capita, Panel Data Regression, Remittances and Malnutrition, SDGs, Undernutrition in Developing Countries.

INTRODUCTION

In the past two decades, remittances have evolved into one of the largest sources of external income for many developing countries, even surpassing foreign aid and foreign direct investment. Countries such as Nepal, the Philippines, and Bangladesh have reported that remittances contribute more than 10% of their Gross Domestic Product (GDP) (World Bank, 2024). These remittance flows play a significant role in supporting household consumption, education, healthcare services, and food security. This phenomenon reflects that remittances are no longer just monetary transfers but have become sustainable economic and social instruments.

Although the economic role of remittances is widely recognized, there remains a need to examine their specific effects on aspects of social welfare, such as nutrition. One of the persistent human development challenges in Asian developing countries is the high prevalence of undernutrition, including stunting, wasting, and underweight (UNICEF, 2024). Ironically, this condition often occurs alongside high levels of remittance inflows,

raising the question of whether remittances have truly succeeded in reducing undernutrition, or whether their potential has not been optimally utilized for this purpose. The lack of robust empirical evidence on this relationship necessitates further investigation. If undernutrition remains high despite large remittance inflows, there may be unexamined mechanisms regarding how remittances affect household nutrition.

While remittances have significantly contributed to national economies and household purchasing power, their influence on social welfare especially nutritional status shows mixed results. Some literature indicates that income increases through remittances tend to drive higher household consumption, including expenditures. However, increased consumption does not necessarily equate to improved nutrition quality, particularly in the absence of adequate nutritional knowledge, access to healthcare services, and dietary preferences that support healthy eating.

This phenomenon prompts important questions about the effectiveness of remittances in reducing undernutrition, a serious and persistent issue in many remittance-receiving countries in South and Southeast Asia. It also suggests a potential mismatch between rising incomes and improved health indicators, emphasizing the need for deeper study into the mechanisms of remittance utilization at the household level. Thus, this study aims to analyze the relationship between remittance inflows and household nutritional status, particularly for vulnerable groups such as children under five and women of reproductive age. The study is expected to provide theoretical contributions to the literature on the socio-economic role of remittances and practical contributions in the formulation of policies that optimize the use of remittances to improve nutrition and sustainable human development.

LITERATURE REVIEW

High rates of undernutrition not only compromise individual quality of life but also hinder economic growth, reduce labor productivity, and increase the fiscal burden on national health systems (Rahayu et al., 2018). When children experience early malnutrition, their cognitive and physical potential may be permanently impaired (Eisha Sabila et al., 2023). In the long run, this reinforces intergenerational cycles of poverty. Therefore, understanding the factors that can reduce undernutrition including remittances is vital for evidence-based policymaking. Given the multidimensional impacts of undernutrition, it is important to explore the potential role of remittances as an effective social intervention tool.

Karim Barkat et al. (2023), in their study titled “*Can remittances alleviate energy poverty in developing countries? New evidence from panel data*,” discuss the broader role of remittances in enhancing household welfare in developing countries. Their findings show that remittances significantly reduce energy poverty through various channels: increased household income, human capital development (health and education), reduced income inequality, and improved access to basic services. This suggests that remittances support not only energy consumption but also reflect improvements in general household purchasing power, including better access to adequate and affordable food.

A related study titled “*Food Security among Female Migrant Workers in Kerala Returning from the GCC Countries*” by S. Irudaya Rajan underscores the close link between migrant workers' remittances and household food security. The study reveals that remittances from Indian female migrant workers in Gulf countries play a critical role in supporting their families' food consumption and dietary diversity (Irudaya Rajan et al., 2024). Using the *Household Food Insecurity Access Scale* (HFIAS), the study finds that remittance-receiving households enjoy greater access to food variety, although quantity remains a challenge. Similarly, Mora-Rivera and van Gasteren (2021), in their study “*The impact of remittances on food insecurity: Evidence from Mexico*,” report that international remittances significantly reduce food insecurity in rural areas of Mexico (Narges Ebadi et al., 2018).

Most previous studies have focused on remittances and poverty, education, or household consumption. However, very few have directly examined the impact of remittances on undernutrition within a cross-country panel framework, especially in the Asian region. Furthermore, many studies either focus on a single country or fail to control for other structural factors such as urbanization, credit access, and education. This highlights a research gap that needs to be addressed.

To fill this gap, this study employs an empirical approach capable of evaluating the interrelations among socio-economic variables comprehensively. We utilize a quantitative approach with panel regression to analyze the effect of remittances on undernutrition in eight developing Asian countries, incorporating control variables such as urbanization, GDP per capita, education expenditure, and private sector credit access. This approach aims to provide broader and more comparative empirical evidence, assessing whether and through what mechanisms remittances can reduce undernutrition. The findings are expected to offer scientific contributions and data-driven policy recommendations for enhancing remittances' role in improving nutrition and public welfare.

METHOD

This study uses panel data from eight developing countries in Asia, namely Indonesia, India, Tajikistan, the Philippines, Bangladesh, Pakistan, Uzbekistan, and Nepal, covering the period from 2017 to 2022. The data employed are secondary in nature and obtained from the World Development Indicators (WDI), published by the World Bank. This source is selected due to its ability to ensure consistency and comparability across countries and over time. The main objective of this study is to analyze the effect of *Personal remittances, received (% of GDP)* on the *Prevalence of undernourishment (% of population)*, which serves as the dependent variable. The control variables in the model include *GDP per capita (constant 2015 US\$)*, *School enrollment, secondary (% gross)*, *Urban population (% of total population)*, and *Domestic credit to private sector (% of GDP)*.

The empirical model used in this research is a panel data regression with a fixed-effects approach. The selection of this model is based on the results of the Chow test and Hausman test, both of which indicate that the fixed-effects model is more appropriate than the common-effects or random-effects models, as it is better able to accommodate unobserved heterogeneity among cross-sectional units. Data processing and statistical analysis are carried out using EViews software. To ensure the validity of the estimation results, classical assumption tests are conducted, including heteroscedasticity and multicollinearity tests. All regression results are critically analyzed by considering both the statistical significance levels and the substantive implications of the relationship between remittances and the prevalence of undernutrition in the selected developing countries in Asia.

RESULTS

There are three tests used to determine the most appropriate model in panel data regression analysis: (1) the Chow test, which is employed to choose between the common effect and fixed effect models; (2) the Hausman test, which is applied to decide between fixed effect and random effect models; and (3) the Lagrange Multiplier (LM) test, which serves to determine whether the common effect or random effect model is more suitable.

Chow test

$H_0 = \text{Common effect model (prob} > 0.05)$

$H_1 = \text{Fixed effect model (prob} < 0.05)$

Table 1 Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	7.861888	(7,35)	0.0000
Cross-section Chi-square	45.351870	7	0.0000

Source: Author's calculation

Based on the Chow test, the probability value of the F-statistic is 0.0000, which is less than 0.05. Thus, the fixed effect model is considered the most appropriate model.

Housman Test

$H_0 = \text{Random Effect model (prob} > 0.05)$

$H_1 = \text{Fixed effect model (prob} < 0.05)$

Table 2 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob
Cross-section random	12.172006	5	0.0325

Source: Author's calculation

Based on the Hausman test, the chi-square probability is 0.0325, which is less than 0.05. Therefore, the fixed effect model is again confirmed as the most appropriate.

Classical Assumption1. *Correlation test***Table 3 Correlation Test**

	Remi	Dcps	Gdpc	Upopulation	Edu
Remi	1.0000	-0.0289	0.4969	-0.3125	0.1789
Dcps	-0.0289	1.0000	0.0927	-0.1772	0.1922
Gdpc	-0.4969	-0.0927	1.0000	0.6028	0.5190
Upopulation	-0.3125	-0.1772	0.6028	1.0000	0.2213
Edu	0.1789	0.1922	0.5190	0.2213	1.0000

Source: Author's calculation

For the multicollinearity test, the correlation coefficients between all variables are below 0.8, indicating the absence of multicollinearity.

2. *Heteroscedasticity Test*

In terms of the heteroscedasticity test, the chi-square probability is 0.5081, which is greater than 0.05. This indicates that the data are free from heteroscedasticity issues.

Table 4 Panel Regreesion

	Coefficient	Std. err.	t-Statistic	P > z
C	28.84035	6.162611	4.67	0.000
REMI	-0.275060	0.077434	-3.55	0.001
UPOPULATION	-0.191020	0.214832	-0.88	0.379
DCPS	-0.001556	0.032279	-2.92	0.005
GDPC	-0.001556	0.001936	-0.80	0.426
EDU	-0.028313	0.034397	-0.82	0.415
	R-squared			0.6581

Source: Author's calculation

The panel regression results indicate that the remittance variable (REMI) has a significant influence on the level of undernutrition. The coefficient of REMI is -0.275060 with a p-value of 0.001, indicating a strong and statistically significant negative relationship at the 1% level. This suggests that higher remittance inflows are associated with lower undernutrition rates. Remittances function as an additional income source for households, which can be used to meet basic needs such as nutritious food and healthcare services. In developing countries, remittances often serve a broader social role as an alternative income source amid limited access to formal employment (Azizi SS, 2018). Evidence from Mexico also shows that remittances significantly improve food consumption and healthcare access among poor households (Azizi SS, 2018).

The variable DCPS (Domestic Credit to Private Sector) is also statistically significant at the 1% level, with a coefficient of -0.001556 and a p-value of 0.005. This suggests that increased access to domestic credit contributes to reducing undernutrition, possibly through the enhanced capacity of households or small enterprises to finance consumption and nutrition-related investments. The development of the financial sector can reduce poverty and inequality (Clinton Sinaga et al., 2024), and in the context of nutrition, it can increase household purchasing power and improve food quality.

Meanwhile, other variables such as urban population (UPOPULATION), GDP per capita (GDPC), and education (EDU) do not show statistically significant effects, with p-values greater than 0.05. Although not significant, the direction of the coefficients remains consistent with theoretical expectations, suggesting that economic growth, education, and urbanization tend to reduce undernutrition, even though this cannot be statistically confirmed in the present model. Urbanization is often linked with better access to food and healthcare services; however, unplanned urban growth may result in slum areas with limited access to adequate nutrition and sanitation (Uddin, 2018). Similarly, GDP per capita has a coefficient of -0.001556 and a p-value of 0.426, indicating that while income increases, the benefits may not be evenly distributed or translated into improved access to basic services. Education shows a negative coefficient (-0.028313) with a p-value of 0.415, implying that while it may contribute to improved nutrition awareness and health behaviors, its effect is likely indirect and long-term.

The R-squared value of 0.6581 suggests that approximately 65.81% of the variation in undernutrition levels can be explained by the variables included in the model. This indicates a relatively strong explanatory power within the context of this panel study on selected developing countries in Asia. Overall, the findings support the hypothesis that remittances are more than simple monetary transfers and play a crucial role in reducing undernutrition. These results imply that policies promoting efficient and affordable remittance transfers can have direct implications for enhancing social welfare and public health.

DISCUSSION

Remittances and Malnutrition: Theoretical Linkage

Remittances have evolved into one of the main sources of external income in developing countries, often surpassing official development assistance and foreign direct investment (Ratha, 2023). In several countries, such as Tajikistan, Honduras, and Nepal, remittances account for over 25% of GDP, reinforcing their significance as a stable and sustainable “development resource” beyond commercial capital (World Bank, 2024). Masron and Subramaniam (2018) found that in 44 developing countries, a one percent increase in remittances relative to GDP is associated with a 0.4 percentage point reduction in absolute poverty, primarily through improved food consumption, housing, and health expenditures. These findings imply that remittances can serve as an indirect channel for reducing undernutrition by improving overall household welfare.

In the ASEAN region, remittances have been shown to significantly reduce poverty levels in recipient countries. However, the effectiveness of these transfers varies depending on the financial infrastructure and financial literacy of recipient households (Nahar et al., 2017). This confirms that remittances play a critical role in enhancing food security and household welfare in developing economies, but their impact is highly dependent on how the funds are used and the socio-economic context of the recipients. Consequently, policies that encourage the allocation of remittances toward investments in nutrition, health, and education are essential to maximize their developmental benefits.

Income Effect Channel (X_1 – Remittances Received as % of GDP)

Remittances serve as a significant source of additional income for households in developing countries, especially given limited access to formal employment and social safety nets. The increase in income from remittances allows households to meet basic needs that were previously unaffordable, such as nutritious food and essential healthcare services. A study by Shair et al. (2024) using data from the Pakistan Social and Living Standards Measurement Survey found that households receiving remittances were less likely to fall into poverty. Remittances are not only used for short-term consumption but also create space for investment in education, nutrition, and health, thereby enhancing long-term welfare. The poverty-reducing effect of remittances becomes even stronger as the amount received increases. These transfers offer a stable source of income amidst domestic economic uncertainty and function as an effective mechanism for improving household resilience.

A panel study across developing countries also found that remittances contribute significantly to improving human capital indicators, including nutrition and the reduction of malnutrition. A 10% increase in per capita remittances was associated with a 1.5% decrease in undernutrition and a 1.9% reduction in food deficits, emphasizing the essential role of remittances in directly supporting household food security (Azizi SS, 2018). Thus, remittances should not be understood solely as economic tools but also as social mechanisms that broaden access to nutrition and strengthen household resilience against food insecurity. The implication is that remittance management strategies that encourage productive spending can substantially support efforts to reduce undernutrition, especially in regions with high vulnerability.

Economic Growth Channel (X_2 – GDP per Capita, Constant 2015 US\$)

Gross Domestic Product (GDP) per capita is a crucial indicator reflecting a country's economic capacity to provide adequate health and nutrition infrastructure (Yaya et al., 2020). Increases in GDP per capita are often linked to reductions in undernutrition prevalence because higher national income allows for greater investment in food security programs, social assistance distribution, and public nutrition interventions. However, economic growth alone is not always sufficient to address malnutrition. Factors such as unequal income distribution, insufficient investment in health and nutrition sectors, and ineffective public policy can limit the positive impact of GDP growth on food security.

Therefore, while a negative correlation between GDP per capita and undernutrition prevalence may exist, the effectiveness of this relationship depends heavily on how economic growth is translated into policies and programs that directly target nutritional improvement. Inclusive social policies and investment in health and nutrition infrastructure must accompany economic development strategies to ensure that the benefits of growth are felt equitably across all population segments.

Human Capital Channel (X_3 – Secondary School Enrollment, % Gross)

Education plays a vital role in increasing knowledge about healthy diets, sanitation, and childcare. Higher educational attainment among household members enhances nutritional awareness and healthy living behaviors. Moreover, remittances can support educational attainment by enabling families to afford school-related expenses (Bucheli et al., 2018). Thus, secondary school enrollment serves not only as a control

variable but also as a potential mediator in the relationship between remittances and undernutrition.

Better education among household members leads to improved understanding of balanced nutrition and better caregiving practices. As an additional source of income, remittances help households finance their children's education, which, in turn, can build human capital and reduce vulnerability to malnutrition in the long term.

Urbanization Channel (X_4 – Urban Population, % of Total Population)

Urbanization is a global phenomenon that has the potential to improve quality of life, particularly in terms of access to food, healthcare, education, and other basic infrastructure. In urban areas, public and private facilities are generally more accessible than in rural regions, which can support better public health and nutrition outcomes (UN-Habitat, 2020). Easier access to food markets enables households to purchase a wider variety of nutritious food, while proximity to healthcare services allows for earlier detection and treatment of nutritional issues (Swinburn et al., 2019).

However, unplanned urbanization can lead to inequality in access to these services and increase malnutrition risks in slum areas (Rahaman et al., 2023). Poorly managed urban growth often results in spatial and social inequalities, reflected in the expansion of informal settlements and the marginalization of low-income communities. In such environments, access to nutritious food, clean water, and adequate sanitation is often severely limited, increasing the risk of both chronic undernutrition (such as stunting) and overnutrition (such as obesity) (Popkin et al., 2020). This demonstrates that the effects of urbanization on nutritional status are contextual and cannot be generalized.

Financial Development Channel (X_5 – Domestic Credit to Private Sector, % of GDP)

The development of the financial system is a key pathway for enhancing household economic and social welfare. The indicator of domestic credit to the private sector (as a percentage of GDP) reflects the extent to which the financial sector supports private households and small businesses through financing access (IMF, 2024). A well-developed and inclusive financial system facilitates remittance flows, broadens access to banking services, and improves the availability of credit needed for managing expenditures and economic risks.

Access to formal financing enables households to invest in critical areas such as healthcare, education, and nutritious food, thereby improving nutritional outcomes, especially for children and women. The availability of credit also strengthens household capacity to respond to economic shocks such as food crises, price fluctuations, or income losses due to employment insecurity. In this context, a robust financial system not only drives economic growth but also functions as a risk mitigation instrument that enhances food and nutrition security (Naylor et al., 2020). Accordingly, financial development as reflected by increased credit to the private sector is expected to be negatively correlated with undernutrition prevalence, both by enhancing food purchasing power and by strengthening household adaptive capacity against economic shocks.

CONCLUSION

The findings of this study affirm that remittances have a significant impact in reducing the prevalence of undernutrition in developing countries across the Asian region. This implies that remittances serve not only as channels for income transfer, but also function as social instruments that enhance household access to nutritious food and basic health services. In this regard, remittances can be seen as an important mechanism in promoting human development, particularly in improving nutritional status. These findings are aligned with the study's objective to empirically examine the effect of remittances on undernutrition within a cross-country framework.

However, not all control variables in this study show statistically significant effects. Urbanization, per capita income, and education, despite having directions of influence consistent with theoretical expectations, do not strongly explain the variation in undernutrition levels in the sample countries. This suggests that the relationship between remittances and nutritional status is complex and influenced by various structural factors that may not be fully captured in the current model. Consequently, generalizing the findings should be done cautiously, considering the limitations in data and the scope of variables employed.

The policy implications of these results emphasize the importance of encouraging the use of remittances for productive and long-term expenditures, particularly in the areas of food, health, and education. In addition, strengthening financial infrastructure and improving financial literacy among remittance-receiving households could be strategic measures to optimize the function of remittances as social intervention tools. Future research is advised to expand the analytical scope geographically, temporally, and in terms of mediating variables in order to gain a more comprehensive understanding of the mechanisms linking remittances to nutrition security.

Implication

This study highlights the crucial role of remittances not only as economic transfers but also as social tools that can improve nutritional outcomes in developing countries. The findings contribute to development and public health literature by emphasizing remittances as a policy-relevant mechanism to support food security and household well-being. Policymakers should consider strategies that enhance the productive use of remittances, particularly through financial literacy and access to health and nutrition services.

Limitation and Future Direction

This study is limited by its regional scope and reliance on macro-level data, which may not capture household-level variations. Future research should explore micro-level data and mixed-method approaches to better understand how remittances influence nutrition decisions. Expanding the analysis to other regions can also test the robustness and generalizability of these findings.

REFERENCES

- Azizi SS. (2018). The impacts of workers' remittances on human capital and labor supply in developing countries. *Economic Modelling*.
- Barkat, K., Alsamara, M., & Mimouni, K. (2023). Can remittances alleviate energy poverty in developing countries? New evidence from panel data. *Energy Economics*, 119. <https://doi.org/10.1016/j.eneco.2023.106527>
- Bucheli, J. R., Bohara, A. K., & Fontenla, M. (2018). Mixed effects of remittances on child education. *IZA Journal of Development and Migration*, 8(1). <https://doi.org/10.1186/s40176-017-0118-y>
- Clinton Sinaga, Berdin Rumahhorbo, & Angry Sitanggang. (2024). Peran Sektor Keuangan Perbankan Dalam Mengatasi Kemiskinan Di Indonesia. *Anggaran : Jurnal Publikasi Ekonomi Dan Akuntansi*, 2(1), 34–43. <https://doi.org/10.61132/anggaran.v2i1.286>
- Eisha Sabila, Fasya Sumirta, & Sudarsono Muhammad Ihrom. (2023). KKN Tematik UPI 2023: Persepsi Masyarakat Terkait Stunting di. *Jurnal Lentera Karya Edukasi*, 4(1), 33–42. <https://doi.org/10.17509/lentera.v4i1.62214>
- IMF. (2024). *STRENGTHENING BANK CREDIT TO THE PRIVATE SECTOR WHILE LIMITING RISKS TO FINANCIAL SECTOR STABILITY 1*.
- Irudaya Rajan, S., Heller, A., & John, A. (2024). Food security among female migrant workers in Kerala returning from the Gulf Cooperation Council countries. *Global Food Security*, 41. <https://doi.org/10.1016/j.gfs.2024.100773>
- Masron, T. A., & Subramaniam, Y. (2018). Remittance and poverty in developing countries. *International Journal of Development Issues*, 17(3), 305–325. <https://doi.org/10.1108/IJDI-04-2018-0054>
- Misati, R. N., Kamau, A., & Nassir, H. (2019). Do migrant remittances matter for financial development in Kenya? *Financial Innovation*, 5(1). <https://doi.org/10.1186/s40854-019-0142-4>
- Nahar, F. H., Nahar, M., & Arshad, M. (2017). EFFECTS OF REMITTANCES ON POVERTY REDUCTION: THE CASE OF INDONESIA. In *Journal of Indonesian Economy and Business* (Vol. 32, Issue 3).
- Narges Ebadi, Davod Ahmadi, Ibrahim Sirkeci, & Hugo Melgar. (2018). View of The Impact of Remittances on Food Security Status in the Global South. *Remittances Review*, 3.
- Naylor, J., Deaton, B. J., & Ker, A. (2020). Assessing the effect of food retail subsidies on the price of food in remote Indigenous communities in Canada. *Food Policy*, 93. <https://doi.org/10.1016/j.foodpol.2020.101889>

- Popkin, B. M., Corvalan, C., & Grummer-Strawn, L. M. (2020). Dynamics of the double burden of malnutrition and the changing nutrition reality. In *The Lancet* (Vol. 395, Issue 10217, pp. 65–74). Lancet Publishing Group. [https://doi.org/10.1016/S0140-6736\(19\)32497-3](https://doi.org/10.1016/S0140-6736(19)32497-3)
- Rahaman, M. A., Kalam, A., & Al-Mamun, M. (2023). Unplanned urbanization and health risks of Dhaka City in Bangladesh: uncovering the associations between urban environment and public health. In *Frontiers in Public Health* (Vol. 11). Frontiers Media SA. <https://doi.org/10.3389/fpubh.2023.1269362>
- Rahayu, A., Km, S., Ph, M., Yulidasari, F., Putri, A. O., Kes, M., Anggraini, L., Mahasiswa, B., & Masyarakat, K. (2018). *STUDY GUIDE-STUNTING DAN UPAYA PENEGAHANNYA*.
- Ratha, D. (2023). *Resilient Remittances: The money that migrant workers send home provides stable income to millions of people in developing economies*. <https://www.imf.org/en/Publications/fandd/issues/2023/09/B2B-resilient-remittances-dilip-ratha>
- Shair, W., Afzal, H., Ahmad, A., & Hassan, R. U. (2024). Impact of Remittances on Household Poverty in Pakistan. *Journal of Education and Social Studies*, 5(3), 319–329. <https://doi.org/10.52223/jess.2024.5336>
- Uddin, N. (2018). Assessing urban sustainability of slum settlements in Bangladesh: Evidence from Chittagong city. *Journal of Urban Management*, 7(1), 32–42. <https://doi.org/10.1016/j.jum.2018.03.002>
- UN-Habitat. (2020). *World Cities Report 2020: The Value of Sustainable Urbanization*. United Nations Human Settlements Programme.
- UNICEF. (2024). *PERUBAHAN IKLIM DAN GIZI DI INDONESIA*.
- World Bank. (2024). *Personal Remittances, Received (current US\$)*. <https://data.worldbank.org/indicator/BX.TRF.PWKR.CD.DT>
- Yaya, S., Uthman, O. A., Kunnuji, M., Navaneetham, K., Akinyemi, J. O., Kananura, R. M., Adjiwanou, V., Adetokunboh, O., & Bishwajit, G. (2020). Does economic growth reduce childhood stunting? A multicountry analysis of 89 Demographic and Health Surveys in sub-Saharan Africa. In *BMJ Global Health* (Vol. 5, Issue 1). BMJ Publishing Group. <https://doi.org/10.1136/bmjgh-2019-002042>