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Institutional quality and the effect of remittances on unemployment: evidence from Africa

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Abstract

Purpose – The study investigates whether the impact of remittances on unemployment in Africa is influenced by the quality of institutions, addressing the inconclusive findings in the existing literature and the limited evidence from the African context.

Design/methodology/approach – Using panel data from 24 African countries spanning 2002 to 2018, the study applies a system generalised method of moments (GMM) estimator to examine the synergistic effect of remittances and institutional quality on unemployment.

Findings – The results reveal that higher remittances lowers unemployment. Further analysis reveals that as institutional quality improves, the unemployment-reducing effect of remittances deepens. This result is robust to an alternative measure of institutional quality.

Practical implications – The study recommends that policymakers in Africa should strive to enhance the quality of institutions, as weak institutions hinder the economy by diminishing the positive benefits of remittances on unemployment.

Originality/value – This study provides a fresh perspective beyond household-level or single-country analyses, offering new insights into how institutional quality influences the effect of remittances on unemployment in Africa.

Keywords Remittance, Institutional quality, Unemployment, Africa

Paper type Research article

1. Introduction

Globally, there is a net migration of people from less developed to developed countries. McAulif and Triandafyllidou (2021) highlight this migration pattern as the largest "corridor", with migrants relocating from developing countries to major economies, including the United States, Germany, the United Arab Emirates and Saudi Arabia. These migrations are mostly in search of economic opportunities that are scarce in developing nations. Migrants who successfully relocate often remit funds to support their families and communities back home. The transfer of money from migrant workers to their home countries is known as remittances (World Bank, 2024). In developing countries, remittances are a major source of international inflows, exceeding foreign direct investment (FDI) and official development assistance (Nepal *et al.*, 2020; Ratha *et al.*, 2024). Hard-working migrants continued to send money home,

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fostering economic resilience and recovery (World Economic Forum, 2021). According to the World Bank estimates, remittance flows to low- and middle-income countries increased by 0.7% in 2023, reaching $656 billion, up from $626 billion in 2022. This growth was largely shaped by the strong labour markets in most advanced countries, particularly in the United States (Ratha *et al.*, 2024). In 2025, remittance inflows are projected to grow by 2.5% to reach $690 billion. In sub-Saharan Africa, remittance flows reached $54 billion in 2023, approximately 1.5 times larger than FDI inflows of $38.6 billion in the same year. The top recipients of remittances in the region, in US dollar terms, were Nigeria, Ghana, Kenya and Zimbabwe. A major contributing factor to the region's remittance growth was the large inflow of remittances to Uganda ($1.4 billion), Kenya ($4.2 billion), Tanzania ($ 0.7 billion) and Rwanda ($ 0.5 billion). However, Nigeria, which accounted for 35% of the region's remittance inflows, saw a 2.9% decline, totalling $19.5 billion (Ratha *et al.*, 2024).

Despite the growing importance of remittance inflows, African countries continue to grapple with persistent unemployment and underemployment, which help explain migration pressures. According to the United Nations Economic Commission for Africa [UNECA] (2023), the continent recorded approximately 63 million unemployed persons in 2023, corresponding to 7.6%. Although this unemployment rate represents a modest decline in the past 2 decades from 8.2% to 7.6%, the absolute number of unemployed individuals has increased by 42%. This was largely due to the economic downturn following the COVID-19 pandemic outbreak. In 2024, the average unemployment rate stood at 6.7%, although national disparities are stark, with the highest unemployment rates among countries such as South Africa (32%), Djibouti (25.9%) and Botswana (23.1%). The unemployment rate understates the broader challenge of labour underutilisation, informal work and working poverty; roughly 85% of Africa's employed labour force remains in informal activities, and about 29.3% of workers live on less than US$ 2.15 per day (working poverty) (Cilliers and Chipanda, 2025). These structural labour market constraints help explain why migration to more developed countries remains a livelihood strategy for many households. In this context, remittances become an important source of income that shapes employment decisions and understanding that this is central to the discourse on SDG 8 (decent work and economic growth) and the broader development challenges confronting African countries.

The ability to translate remittances into positive economic benefits is conditioned on the quality of institutions (Osabuohien and Efobi, 2013). Evidence from the 2024 Ibrahim Index of African Governance points to stagnation in Africa's institutional quality performance between 2014 and 2023, alongside cross-country variation. While 33 countries, representing 52.1% of the population, recorded improvements, 21 countries hosting 47.9% experienced net deterioration, with decline intensifying in countries such as Nigeria, Uganda, Senegal and Tunisia. This stagnation is driven mainly by persistent weakening in security and rule of law, as well as declines in participation, rights and inclusion (Mo Ibrahim Foundation, 2024). Low institutional quality in such contexts has the potential to constrain the effectiveness of financial institutions by raising transaction costs, weakening contract enforcement and limiting access to credit, thereby reducing the capacity to channel remittances into productive investment. As a result, remittances are more likely to finance consumption rather than entrepreneurship or job creation, where stronger institutions and financial frameworks enhance their development impact (Osabuohien and Efobi, 2013; Sambira, 2013).

There has been much interest in the literature on remittances. Most prior studies have either focused on the economic growth impact of remittances (Rao and Hassan, 2011; Ziesemer, 2012), the impact of remittances on poverty and inequality (Bang *et al.*, 2016); remittances and financial development (Brown *et al.*, 2013; Coulibaly, 2015); environmental effects of remittances (Li and Zhou, 2015); the impact of remittances on labour productivity (Al Mamun *et al.*, 2015) or the impact of remittances on political institutions (Williams, 2017). These studies also focus on single-country and individual-level data (see Habib, 2023). Even though remittance inflows could alter the labour market structure, as argued earlier, prior research has paid little attention to investigating this relationship in the African context. Where a few

studies exist, the results are often mixed. In addition, previous studies often assume linearity in the relationship, which could account for the inconsistency in existing results. As aptly observed in the literature, the nexus between remittances and employment remains complex (Pal *et al.*, 2022), and the role of institutions in the remittance-unemployment relationship remains unexplored.

To the best of our knowledge, this is one of the first attempts to examine the complex nexus between remittances and unemployment while considering the role of institutions. We use a partial differential equation to isolate the impact of remittances on unemployment, given a country's level of institutional quality. This approach is necessary because, in the presence of interaction terms, the effect of one variable depends on the value of the interacting variable. Specifically, the marginal effect of remittances on unemployment varies with the level of institutional quality and cannot be interpreted directly from the coefficient on remittances or the interaction term alone. Partial differentiation, therefore, allows for correct interpretation of the conditional effect, avoiding misleading inferences that may arise from relying solely on estimated coefficients (Bambor *et al.*, 2006). We further contribute to the literature by going beyond the usual single-country and household-level studies to examine the relationship at the aggregate level in Africa. This could provide great insights into continent-wide policy on migration and institutional quality, particularly given the growing calls for economic integration across the continent.

The rest of the article is organised as follows: Section 2 presents a review of the theoretical and empirical literature; Section 3 describes the methods for the study, including the data and the theoretical and empirical model specifications; Section 4 presents the results and discussion and Section 5 concludes the study.

2. Literature review

2.1 Theoretical literature review

Theoretical arguments support a two-way main opposing effect of remittance on labour market structure (Funkhouser, 1992). On the one hand, remittances relax household and firm credit constraints, stimulate aggregate demand and support capital accumulation, thereby increasing labour demand and reducing unemployment. When channelled into business creation or expansion, remittances promote self-employment and microenterprise development, particularly in the informal sector, generating jobs and raising labour earnings (Anwar *et al.*, 2026; Jijin, 2026). Remittances also finance education, which may temporarily reduce labour supply but enhances employability and employment opportunities in the long run (Lucas and Stark, 1985).

A contrasting strand of the literature suggests that remittances may reduce labour market participation through potential disincentive effects. While remittances raise household income, they may reduce labour force participation through an income effect, as remittances represent a non-labour source of income (Funkhouser, 1992). Consistent with the neoclassical model of labour-leisure choice, remittances can increase the reservation wage and reduce the shadow value of market wages by relaxing budget constraints, particularly for women, thereby discouraging labour force participation, especially in households with high dependency ratios (Killingsworth, 1983; Jadotte, 2009). Borja (2020) further argues that by easing income constraint, remittances can substitute for wage earnings, allowing recipients to increase consumption and leisure, which ultimately reduces labour supply and may lead to unemployment.

Overall, the effect of remittances on labour market outcomes is theoretically ambiguous and context dependent, varying across countries and institutional settings, and therefore remains an empirical question.

2.2 Empirical literature review

Empirical studies on the relationship between remittances and labour market outcomes have yielded mixed results. While some studies find that remittances help reduce unemployment by

stimulating aggregate demand and entrepreneurial activity, others highlight negative labour supply effects. A third strand of the literature reports no statistically significant relationship, suggesting that the remittance-labour market nexus is highly context dependent.

Several recent studies confirm a negative relationship between remittances and labour supply. For instance, using household panel data from Tajikistan, Murakami *et al*. (2021) apply control function and endogenous switching regression techniques showing that migration and remittances reduce households' labour supply. Similarly, Dey (2022) used household-level data from rural India and employed instrumental variable and selectivity-corrected probit techniques to find that remittances reduce labour market participation, particularly among recipients of international remittances. At the macro-level, Pal *et al*. (2022) relied on a panel dataset for high-, middle- and low-income countries spanning 1991–2020 and estimated fixed effects, random and fully modified ordinary least squares models to analyse labour market effects of remittances. The study finds that remittances inflows are associated with higher unemployment in high-income countries, while reducing unemployment in low- and middle-income countries. Habib (2023) employed panel data for Tunisia and its major European destination countries from 1997 to 2017 and estimated the three-stage least squares to find that remittances reduce labour supply and thus increase unemployment in the case of an ageing population. In a recent study, Yoda (2025) examines the heterogeneous effects of migrant remittances on labour force participation in 30 SSA countries from 2005 to 2023 using Driscoll–Kraay, Lewbel instrumental variables and system GMM estimators. The study finds that while remittances generally reduce labour force participation, the negative effects are mitigated in countries with higher financial development and entrepreneurial activity, highlighting these channels as important mediators. Jijin (2026) examines the impact of remittances on labour force participation using panel data for 50 lower-middle-income countries from 1990 to 2020. The study finds that remittances reduce labour force participation among the youth and the elderly, while having no significant effect on the participation of the prime-age labour force.

Conversely, some studies show positive (negative) effects of remittances on employment (unemployment). Wu *et al*. (2023) examine the impact of remittances on unemployment in Asian economies using 2SLS and GMM models for the period 2004–2021. The findings indicate a significant negative relationship between remittances and unemployment. Similarly, Ngoa (2022) analyses the effect of remittance on the labour market outcomes in 44 SSA countries from 1975–2019. The findings based on system GMM suggest that remittances increase labour force participation and self-employment, leading to unemployment reduction. More recently, Adigun *et al*. (2025) found a positive effect of remittances and foreign direct investment on employment, using data from 15 ECOWAS countries from 1990–2022 and applying panel dynamic ordinary least squares and vector error correction estimators.

Another strand of the literature finds insignificant or neutral effects of remittances on labour supply or unemployment. For example, Kokotović and Kurečić (2022) find no significant long-run relationship between remittances and self-employment, using a panel ARDL estimator for selected South-East European Economies over the period 1996–2020. Relying on panel fully modified and dynamic ordinary least squares estimator, Sevencan (2023) finds no significant impact of unemployment on remittances and development in low-income countries over the period 1990–2019. These mixed findings have prompted increased attention to mediating factors influencing the nexus between remittance and labour supply. Institutional quality, as a mediating factor, has the potential to reconcile opposing theoretical mechanisms by shaping how remittances are utilised, with strong institutions facilitating their channelling into productive investment, entrepreneurship and job creation, while weak institutions increase the likelihood that remittances are absorbed through consumption and income effects that dampen labour supply. Existing studies largely examine remittances, institutional quality and labour supply in isolation. For example, Motha *et al*. (2022), relying on ARDL and data from India from 1990 to 2018, show that remittances improve institutional quality, while labour supply dampens institutional quality. More recently, Elorabi *et al*. (2024)

examined the nexus between remittances, political stability and unemployment in the Middle East and North African region. Their findings suggest that remittances have a stronger impact on reducing unemployment in the recipient economies with high political stability. While this study aligns with the current research, it focuses solely on political stability, overlooking broader institutional factors that shape labour market outcomes. By employing a comprehensive institutional quality index and focusing on African countries, the present study offers a more holistic and contextually relevant contribution to the literature.

3. Method

3.1 Data

The study relies on annual panel data for 24 African countries [1] spanning 2002 to 2018. The countries and periods for the study were selected based on data availability. Our variables, including unemployment, remittances, institutional quality, economic growth, inflation, financial sector development and trade openness, were selected exclusively based on the literature. All the data are sourced from the World Development Indicators database, except the institutional quality and financial sector development variables. These data were gleaned from the World Governance Indicators and the International Monetary Fund databases, respectively. Following extant studies in the literature (see Abdih *et al.*, 2012; Jackman, 2014; Pal *et al.*, 2022), unemployment is measured as the total number of unemployed as a percentage of the total labour force, while remittance is measured as personal remittance received as a percentage of GDP. This variable is expected to correlate negatively with unemployment. We measure institutional quality with an index created using the Principal Components Analysis (PCA) approach. This was done to overcome the criticism against the use of a single variable measure of institutional quality (see Kuncic, 2014). Measuring institutional quality as a single variable fails to capture the multidimensional nature of institutional quality. To address this limitation, the study employs PCA to construct a composite institutional quality index using indicators such as voice and accountability, political stability, government effectiveness, regulatory quality, control of corruption and the rule of law (measured on a standardised scale ranging from -2.5 (weak institutions) to $+2.5$ (strong institutions). The results of the institutional quality index estimation are provided in the Appendix (Table A1). The index is normalised to range from 0 to 1 to have a proper interpretation. A higher value (1) of the institutional quality index denotes strong institutions and vice versa. This measure has been previously used by Osei (2024) and is expected to be inversely related to unemployment.

The study controlled for economic growth, inflation, financial development and trade openness. These variables have been widely used as determinants of unemployment (see Abdih *et al.*, 2012; Jackman, 2014). Economic growth is measured with an annual percentage growth rate of GDP at market prices based on constant 2015 US dollars. Inflation is measured as a percentage change of the annual consumer price index, while the financial development index measures financial sector development. We measure trade openness as the summation of the exports and imports of goods and services as a percentage of GDP.

3.2 Theoretical model

Drawing on the theoretical framework of Fedderke and Romm (2006), as adopted by Elorabi *et al.* (2024), the effect of remittances on unemployment is modelled within a modified Cobb–Douglas production function that incorporates remittances alongside other explanatory variables, as specified below:

$$Y_{it} = A^{\delta} K_{it}^{\alpha} L_{it}^{\beta} \tag{1}$$

where Y_{it} denotes total output, K_{it} represents capital stock, L_{it} is labour and A_{it} captures total factor productivity. The parameters α and β measure the output elasticities of capital and labour, while δ represents factors influencing productivity (Greenaway *et al*., 1999). Under profit maximisation, wages (W) equal the marginal product of labour(C) and the cost of capital equals its marginal revenue, specified in Eq. (2) as follows:

$$Y_{it} = A^{\delta}\left(\frac{\alpha L_{it}}{\beta}\times\frac{W_{it}}{C_{it}}\right)^{\alpha} L_{it}^{\beta} \tag{2}$$

Taking the logarithm to linearise Eq. (2) yields the following demand function:

$$ln\, L_{it} = \rho_0 + \rho_1 ln\, Y_{it} + \rho_2 ln \frac{W_{it}}{C_{it}} \tag{3}$$

where $\rho_0 = \frac{-(\delta lnA + \alpha \ln \alpha - \alpha ln \beta)}{\alpha+\beta}$, $\rho_1 = \frac{1}{\alpha+\beta}$, and $\rho_2 = \frac{-\alpha}{\alpha+\beta}$

It is important to note A_{it} is expected to improve over time and to be positively associated with remittance inflows through their role in financing human capital formation and physical environment. Hence, A_{it} is modelled as a time-varying parameter as:

$$A_{it} = e^{\vartheta_0 T_i} REM_{it}^{\vartheta_1} \tag{4}$$

where REM_{it} and T_i are remittances and time trend, respectively, and ϑ_0 and $\vartheta_1 > 0$. Substituting the log of A_{it} into the labour demand function (Eq.3) yields the relationship between remittances and employment as follows:

$$ln\, L_{it} = \omega + \rho_1 ln\, Y_{it} + \rho_2 ln \frac{W_{it}}{C_{it}} + \rho_3 ln\, REM_{it} + \rho_4 T \tag{5}$$

where $\omega = \frac{-(\alpha \ln \alpha - \alpha ln \beta)}{\alpha+\beta}$, $\rho_3 = \varphi\vartheta_1$, $\rho_4 = \varphi\vartheta_0$ and $\varphi = \frac{-\delta}{\alpha+\beta}$

3.3 Empirical strategy

We explore the effect of remittances on unemployment by setting up a model where unemployment is a function of a country's remittances, quality of institutions and other control variables such as economic growth, inflation, financial sector development and trade openness. This model can be expressed as:

$$UNE_{it} = f(REM_{it} IQ_{it} CONT_{it}) \tag{6}$$

where UNE_{it} is unemployment in country i at time t; REM_{it} and IQ_{it} are remittances and institutional quality, respectively, while $CONT_{it}$ represents a set of control variables such as economic growth, inflation, financial sector development and trade openness.

In Equation (7), we present the empirical version of our model where the initial lag of unemployment, remittances, institutional quality and other control variables are included. This is specified as follows:

$$UNE_{it} = \gamma_0 UNE_{it-1} + \gamma_1 REM_{it} + \gamma_2 IQ_{it} + \gamma_3 \mathrm{CONT}_{it} + \vartheta_i + \varnothing_t + \mu_{it} \tag{7}$$

where UNE_{it-1} is the lag of unemployment; ϑ_i is unobserved country-specific effects, $\varnothing_t$ is the time effects, μ_{it} is the idiosyncratic error term, while other variables denote their previous definitions.

The interactive term of remittances and institutional quality is included in Equation (8) to help test the hypothesis that institutional quality conditions remittances to affect unemployment. The equation is formulated below:

$$UNE_{it} = \alpha_0 UNE_{it-1} + \alpha_1 REM_{it} + \alpha_2 IQ_{it} + \alpha_3 \text{CONT}_{it} + \delta(REM_{it} * IQ_{it}) + \vartheta_i + \varnothing_t + \mu_{it} \quad (8)$$

From Equation (8), while α_1 and α_2 measure the direct impact of remittances and institutional quality on unemployment, δ measures the effect of the interactive term of remittances and institutional quality on unemployment . To interpret the coefficient of the interactive term, we compute the net or marginal effect of remittances on unemployment based on the interaction between remittances and institutional quality. This is achieved through the partial differentiation approach (Brambor *et al.*, 2006), as shown in Equation (9). Specifically, we differentiate unemployment with respect to remittance and evaluate the net effect at the mean value of the institutional quality variable.

$$\frac{\partial UNE_{it}}{\partial REM_{it}} = \alpha_1 + \delta IQ_{it} \quad (9)$$

The above equations were estimated using the system generalised method of moments (GMM) inspired by Arellano and Bond (1991) and Blundell and Bond (1998). System GMM is preferred because the model is dynamic and includes a lagged dependent variable and potentially endogenous regressors. Two-stage least squares (2SLS) and related estimators are less suitable in this setting as they do not adequately correct for dynamic panel bias and rely on external instruments and strict exogeneity. Blundell and Bond (1998) showed that system GMM, which combines equations in levels and differences, yields more informative and robust instruments, particularly when series are highly persistent over time. This makes system GMM superior to 2SLS approaches in a dynamic context.

To check our estimates' reliability, the study tests for serial correlation and examines the validity of our instruments using the Hansen test of over-identifying restrictions. While the serial correlation test examines the null hypothesis of no serial correlation of the residuals, the Hansen test is based on the null hypothesis of valid instruments.

4. Empirical analysis

4.1 Descriptive statistics

In Table 1, over the period 2002–2018, it is realised that unemployment averaged 8.1% for the sampled countries. This variable ranged from 0.3% to 32.3%. While the minimum value corresponds to Niger, the maximum value is for South Africa. There is also high variability

Table 1. Summary statistics

Variable	Obs	Mean	Std. dev	Min	Max
Unemployment	384	8.086	6.701	0.32	32.310
Remittance	384	2.988	2.872	0	10.697
Institutional quality	384	0.456	0.222	0	1
Real GDP growth	384	4.535	2.702	−7.652	14.047
Inflation	384	109.259	59.860	40.8234	890.229
Financial development	384	0.173	0.125	0.030	0.646
Trade openness	384	62.492	22.856	16.141	127.063

Note(s): Obs stands for observations; Std. dev. denotes standard deviation; Min represents minimum and Max is maximum

among countries regarding unemployment rates, as shown by the standard deviation of 6.7. On average, personal remittances stood at approximately 3% during the period, with the lowest and highest remittances at 0 and 10.7%, respectively. The average institutional quality is approximately 0.46, implying the presence of a weak institutional environment in Africa. With regard to economic growth, the average real GDP growth stood at 4.5%. Inflation, proxied by the consumer price index, is also averaged at 109.2 and shows high variability given its high standard deviation. The mean of financial development is very low (0.17), suggesting a weak financial system in the sampled countries. Furthermore, we present the correlation matrix in Table 2. It can be seen that the highest correlation (0.588) is observed between institutional quality and financial development. This correlation coefficient is lower than the benchmark of 0.80 provided by Kennedy (2008). There is, therefore, no risk of multicollinearity.

4.2 Empirical results and discussion

In this section, we present and discuss the empirical findings of the study, examining the unconditional and conditional effects of remittances on unemployment. Table 3 shows the results from the dynamic two-step GMM estimator. Our results, shown in columns 1–6, included the main independent variables (remittances and institutional quality) along with the control variables added sequentially to assess the sensitivity of our estimates and examine the unconditional effect of remittances on unemployment. In column 7, the multiplicative interactive term of remittance and institutional quality is added to the model to analyse the conditional effect of remittance on unemployment.

For each model, it is observed that the estimated coefficient of the lagged unemployment variable is positive and highly significant. This suggests that the unemployment rate in a year is primarily influenced by the unemployment rate in the previous year. We also find that remittances lower unemployment in the sampled countries. Specifically, the estimated coefficient shows a negative relationship between remittances and unemployment. This means that if remittances increase by 1% of GDP, unemployment will reduce by 0.07% (see column 6 of Table 3). The result implies that personal remittances enhance entrepreneurial activity and increase the participation of beneficiary households in self-employment activities. This aligns with the New Economics of Labour Migration theory by Lucas and Stark (1985), which posits that remittances serve as a financial buffer by alleviating liquidity and credit constraints, and providing seed capital for new enterprises, particularly when combined with well-developed financial institutions that enhance access to credit. For instance, in Ghana, remittances are commonly pooled at the household level to finance entrepreneurial activities, such as acquiring taxis for transport services or investing in small-scale manufacturing, thereby supporting SME growth and job creation [2]. The negative effect is consistent with the findings of Pal *et al.* (2022), who find remittance inflows reduce unemployment in low- and middle-income countries. Our result contributes to the literature by clarifying the conditions under which remittances translate into employment gains in Africa and emphasises the need to increase the volume of remittances. This could happen if governments and policymakers put in

Table 2. Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) Unemployment	1.000						
(2) Remittance	−0.155	1.000					
(3) Institutional quality	0.298	−0.214	1.000				
(4) Real GDP growth	−0.214	−0.033	0.014	1.000			
(5) Inflation	0.098	0.026	−0.174	−0.061	1.000		
(6) Financial development	0.572	−0.082	0.588	−0.105	0.005	1.000	
(7) Trade openness	0.290	0.018	0.510	−0.150	−0.188	0.342	1.000

Table 3. Remittances, institutional quality and unemployment in Africa

	Dependent variable: Unemployment						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged Unemployment	0.889***	0.857***	0.768***	0.817***	0.852***	0.863***	0.691***
	(0.036)	(0.033)	(0.058)	(0.048)	(0.065)	(0.066)	(0.047)
Remittances	−0.109***	−0.149***	−0.196***	−0.067***	−0.076***	−0.071***	−0.195***
	(0.022)	(0.026)	(0.030)	(0.024)	(0.017)	(0.020)	(0.040)
Institutional quality		−2.141***	−2.395***	−1.440*	−1.478**	−1.462**	2.110
		(0.694)	(0.751)	(0.755)	(0.721)	(0.720)	(1.490)
Real GDP growth			−0.072***	−0.062**	−0.107***	−0.135***	−0.151*
			(0.022)	(0.026)	(0.036)	(0.043)	(0.079)
Inflation				0.002***	0.001	0.0001	0.006***
				(0.000)	(0.001)	(0.001)	(0.002)
Financial development					3.407	4.367	−4.735**
					(3.572)	(2.851)	(2.370)
Trade openness						−0.010**	0.003
						(0.004)	(0.007)
Remittance × Institutional quality							−0.466***
							(0.174)
Constant	0.958***	2.369***	3.677***	2.098***	1.550	2.085**	2.934***
	(0.334)	(0.431)	(0.871)	(0.779)	(1.014)	(0.972)	(0.969)
Net/marginal effect (min)							−0.195***
							(0.401)
Net/marginal effect (mean)							−0.408***
							(0.101)
Net/marginal effect (max)							−0.661***
							(0.192)
Country effects	YES	YES	YES	YES	YES	YES	YES
Observations	384	384	384	384	384	384	384
Number of countries	24	24	24	24	24	24	24
AR(2)	0.914	0.889	0.962	0.877	0.743	0.733	0.980
Hansen	0.188	0.235	0.113	0.122	0.139	0.166	0.383
Number of Instruments	14	15	16	16	17	18	19
Wald χ^2	2598.49	2725.34	5394.93	8417.98	9208.82	6859.82	10,129.49
[*p*–value]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Note(s): *, **, *** indicate significance at the 10%, 5% and 1% significance level respectively. Robust standard errors are in parentheses

place measures to reduce the cost associated with remittances to 3% by 2030. At the moment, "the average cost of sending money to most African countries is more than twice the 3% level" (Malpass, 2022). Nevertheless, our finding contrasts with the strand of literature that finds remittances increase unemployment by reducing labour supply incentives and discouraging job search activity (see Habib, 2023).

The relationship between institutional quality and unemployment is consistently negative in almost all the models, but the significance level of the estimated coefficient reduces when we control for real GDP growth, inflation, financial development and trade openness. In column 6, it is evident that a 1% increase in institutional quality significantly reduces unemployment by 1.46%. The negative effect of institutional quality on unemployment suggests that quality institutions in the form of voice and accountability, control of corruption, government effectiveness, regulatory quality, political stability and the rule of law are critical in creating an environment that reduces unemployment. With strong institutions, businesses thrive and become more productive, boosting their employment ability and reducing unemployment. This finding is plausible but not consistent with the studies, such as Afolabi *et al.* (2024), which established a positive relationship between institutional quality and unemployment. Such a positive effect suggests the weaknesses and fragility of institutions in reducing unemployment. The divergence between our findings and those of Afolabi *et al.* (2024) is largely driven by the differences in sample coverage and empirical approach. While Afolabi *et al.* (2024) analyse MENA countries using dynamic ordinary least squares, this study focuses on African countries with distinct labour market characteristics and employs the system GMM estimation technique.

Turning to the control variables, we observe that economic growth, as proxied by real GDP growth, negatively affects unemployment. This inverse relationship aligns with "Okun's law", a well-established principle stating that as the economy grows, unemployment reduces. This occurs when the economy is doing well and stimulating aggregate demand, which encourages firms to produce more and hire more, leading to job creation (see Okun, 1962). This finding affirms the validity of Okun's law in Africa, which is consistent with earlier studies such as Sodipe and Ogunrinola (2011) and Elshamy (2013). Inflation is found to be positively related to unemployment, though not significant when we account for financial development and trade openness. This finding does not support the theoretical predictions of the Phillips curve, which suggests a trade-off between inflation and unemployment. Financial development is also found to be statistically insignificant, implying that financial development is not a significant determinant of unemployment in the sampled countries. The key implication drawn from this finding is that growth in financial development does not lead to job creation. This highlights the importance of policies that promote financial development, which could increase the availability of financial credit for investment into labour-enhancing technology to boost productivity and employment. The coefficient of trade openness is negative and statistically significant, suggesting that trade openness is inversely related to unemployment. This implies that a viable way to address Africa's unemployment challenge is through openness to international trade. This can be achieved when African countries enhance productivity to boost export-related activities, thereby creating employment opportunities for the growing population. This finding aligns with the study of Afolabi *et al.* (2024), who found empirical evidence in support of the inverse relationship between trade openness and unemployment in the MENA region.

We now turn to examine the conditional effect of remittances on unemployment. Thus, the role of institutional quality in the remittances-unemployment nexus. To do this, we estimate Equation (8), which includes the multiplicative interactive term of remittances and institutional quality and evaluate it at the minimum, mean and maximum values of institutional quality using partial differentiation. The result is at the bottom of Table 3 (column 7). It is realised that the net effect of the interactive term of remittance and institutional quality evaluated at the minimum value of institutional quality is −0.195 and significant at 1%. The same derivative evaluated at the mean and the maximum values of institutional quality are

−0.408 and −0.66, respectively. This evidence shows that the impact of remittances on unemployment varies across different levels of institutional quality. Specifically, the findings indicate that as institutional quality improves, the unemployment-reducing effect of remittances becomes stronger, suggesting that remittances are more effective in reducing unemployment in countries with better institutions. The theoretical literature argues that countries with stronger institutions tend to have more developed and efficient financial systems and lower remittance transaction costs, which increases the likelihood that remittances are channelled into productive activities (Kim, 2007), thereby supporting job creation. Rwanda presents a particularly relevant case for contextualising the findings of this study, given its post-conflict history and notable development progress over the past 3 decades. Since the early 2000s, the country has experienced a substantial increase in remittance inflows alongside a significant improvement in institutional quality, contributing to stronger macroeconomic performance, including employment creation (Kadozi, 2019). Our finding resonates with the work of Shukralla (2016), who argues that the impact of institutions on the remittance-growth nexus depends on how institutions are organised and work in each country. Remittances can lead to desirable results in an appropriate institutional setting where the policy roles are towards effectively regulating markets. Therefore, in the presence of quality institutions, remittances' favourable effect on Africa's unemployment could be realised.

On the adequacy of our models, the significant Wald test statistics indicate the overall adequacy of our models. In addition, we test for over-identifying restrictions using the Hansen test. The result supports the validity of the instruments as we fail to reject the null hypothesis, indicating an overall exogeneity of the instruments employed. The *p*-values for AR (2) show no second-order serial correlation. Thus, the findings presented in this study are coherent and consistent.

4.3 Robustness check

As our robustness checks, we examine the relationship between remittances, institutional quality and unemployment by relying on an alternative measure of institutional quality. Relative to our earlier measure of institutional quality, which was computed using PCA and data from the World Governance Indicators, we proxy institutional quality with the economic freedom index gleaned from the Heritage Foundation database. The economic freedom index comprises twelve indicators grouped into four broad categories: the rule of law, regulatory efficiency, government size and market openness [3]. The scores from these twelve indicators are weighted equally and averaged to produce an overall score which ranges between 0 and 100, with a higher (lower) score indicating a fully free (repressed) country (stronger institutions). Literature has extensively used this measure to proxy institutional quality (see Jones *et al.*, 2023; Samadi and Alipourian, 2021). We estimate Equations (8) and (9) using this new proxy for institutional quality and present the results in Table 4. The estimation results presented in Table 4 are generally similar to the findings in Table 3.

Consistent with the previous findings, the lagged unemployment rate is positive and highly significant (see Table 4). This confirms that the one-period lag of unemployment positively influences unemployment in Africa. On the effect of remittance, it was realised that remittance reduces unemployment. This finding is similar to the results in Table 3 in terms of the direction and significance level of the coefficients.

Similarly, institutional quality negatively and significantly impacts unemployment in almost all our models. Although the magnitude of the coefficient is smaller when compared to the results in Table 3, the overall findings suggest that institutional quality influences unemployment negatively, irrespective of the measure of institutional quality. The result of the interactive effect of remittances and institutional quality is qualitatively similar compared to the previous finding in Table 3. The net/marginal effects of the interactive term show a negative and significant impact on unemployment, albeit the magnitude of the effects is larger relative to the previous findings (see model 7 of Tables 3 and 4). The net/marginal effects,

Table 4. Remittances, institutional quality and unemployment in Africa (robustness results)

	Dependent variable: unemployment						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Lagged Unemployment	0.838***	0.848***	0.801***	0.736***	0.785***	0.702***	0.695***
	(0.063)	(0.045)	(0.042)	(0.048)	(0.063)	(0.049)	(0.039)
Remittances	−0.126***	−0.089**	−0.096***	−0.186***	−0.344***	−0.406***	−0.244***
	(0.027)	(0.038)	(0.033)	(0.036)	(0.083)	(0.063)	(0.070)
Economic freedom index		−0.071**	−0.106***	−0.058*	−0.034**	−0.024*	0.009
		(0.031)	(0.025)	(0.033)	(0.016)	(0.013)	(0.013)
Real GDP growth			−0.085***	−0.077**	−0.146***	−0.128***	−0.290***
			(0.027)	(0.033)	(0.032)	(0.037)	(0.035)
Inflation				0.002**	0.004**	0.005***	0.003
				(0.001)	(0.002)	(0.002)	(0.002)
Financial development					3.030	0.796	−1.789
					(2.193)	(2.699)	(1.551)
Trade openness						0.006	0.001
						(0.010)	(0.004)
Remittance × Economic freedom index							−0.014**
							(0.006)
Constant	1.423***	5.354***	8.327***	5.732**	3.823***	3.807***	3.122***
	(0.542)	(1.979)	(1.652)	(2.370)	(0.902)	(1.469)	(0.860)
Net/marginal effect (min)							−0.842***
							(0.249)
Net/marginal effect (mean)							−1.052***
							(0.332)
Net/marginal effect (max)							−1.325***
							(0.442)
Country effects	YES	YES	YES	YES	YES	YES	YES
Observations	384	370	370	370	370	370	370
Number of countries	24	24	24	24	24	24	24
AR(2)	0.899	0.994	0.810	0.843	0.814	0.943	0.603
Hansen	0.246	0.108	0.183	0.141	0.382	0.559	0.615
Number of Instruments	8	15	16	16	17	18	19
Wald χ^2	1852.44	8495.58	6133.34	5214.85	1820.73	1437.39	3730.47
[*p*–value]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]

Note(s): *, **, *** indicate significance at the 10%, 5% and 1% significance level respectively. Robust standard errors are in parentheses

evaluated at the minimum, mean and maximum values, indicate that as institutional quality improves, remittances become more effective in lowering unemployment.

Regarding the control variables, we establish that inflation is significant and positive. This implies that both inflation and unemployment rise together, challenging the Phillips curve, as shown in the earlier findings. In Africa, most countries are characterised by high inflation stemming from weak exchange rates, fiscal deficits and food and energy prices. This does not lead to job creation but rather fuel cost-push inflation and unemployment. The impact of economic growth on unemployment is also significant but negative. This is similar to the earlier findings, which suggest that as the economy expands, unemployment reduces, confirming the validity of Okun's law in the sampled countries. However, we found that financial development and trade openness are not significant determinants of unemployment.

5. Conclusion

Remittance can influence the structure of labour markets, especially in developing economies, which are largely net receivers of remittances. In this study, we examine the influence of remittance on unemployment and the role of institutional quality in this relationship. We show that remittances reduce unemployment in Africa. This confirms the neoclassical theory that remittances may increase labour supply and decrease unemployment as households invest such non-labour income in financing income-generating activities. Given this finding, policy efforts should prioritise increasing formal remittance in Africa, whose cost remains among the highest globally, well above the SDG target of 3%. This has been largely attributed to a lack of competition and cross-border interoperability. To strengthen the labour-market effects of remittances, African governments and the African Union could reduce transfer costs through digital and low-cost fintech solutions such as blockchain, enhance cross-border payment interoperability and promote financial inclusion measures that channel remittances into employment-generating activities. Evidence from Malaysia's Project Greenback 2.0, which lowered remittance costs from 4.5% to 2.2% through digital and regulatory reforms (World Bank, 2021) and the U.S.–Mexico corridor, where increased competition halved transfer fees (Ratha, 2005), provides clear lessons on how to lower high remittance costs and promote the use of formal remittance channels.

In addition, we found that higher institutional quality reduces unemployment, highlighting the need for African governments to strengthen regulatory frameworks, enhance accountability and improve administrative efficiency. The experience of some OECD countries (e.g. Chile), where reforms to the regulatory impact system improved regulatory quality, government effectiveness and stakeholder engagement, provides an important case study for African countries, demonstrating how transparent and predictable governance can stimulate private-sector investment and reduce unemployment (OECD, 2025).

We further establish that institutional quality mediates the impact of remittances on unemployment, implying that the employment effects of remittances vary across countries with differing institutional contexts. This finding underscores the importance of institutional strengthening rather than policies focused solely on increasing remittance inflows. African governments and the African Union should therefore strengthen financial and regulatory institutions that channel remittance into productive investment, drawing on experiences such as Mexico's 3×1 program for migrants, where credible governance and public cofinancing have supported employment creation.

This study has thus contributed to the existing literature on the remittance–unemployment relationship in several ways. It is the first to provide continent-wide empirical evidence on the topic within Africa. Hence, unlike prior studies limited to household or individual country levels, our study provides evidence across African countries. Furthermore, unlike others, our study has considered the role of a critical variable (institutional quality) in the remittance-unemployment nexus, which has been ignored in the literature until now. Consequently, we provide evidence for African governments to take another look at the current weak

institutional framework and take steps to ensure political stability, rule of law and control of corruption, amongst others, to reduce the pervasive problem of unemployment and enhance the standard of living of households on the continent. Our study also contributes to the theory by providing evidence to support the proposition of the neoclassical labour-leisure theory, which maintains that non-labour-related incomes, such as remittances, can increase labour supply or enhance labour market participation by providing funding for entrepreneurial activities and reducing unemployment. Practically, our results will help make a case for streamlining remittance inflows in Africa and strengthening state institutions to promote political stability and the rule of law.

While this study offers valuable insights, it is not without limitations. The use of a balanced panel of 24 African countries from 2002 to 2018 restricts country coverage and excludes more recent labour market developments. Additionally, differences in economic and institutional context limit the generalisability of findings. Future studies could address this limitation by expanding the time scope, broadening country coverage and exploring sub-regional dynamics for a more nuanced understanding.

Future studies may consider other channels, such as human capital development, through which remittances influence unemployment. In addition, future studies may consider the short-run and long-run dynamics between remittances, institutional quality and unemployment, as this will provide more insights into whether the interaction between these variables is conditioned on time.

Appendix

Table A1. Principal component analysis for institutional quality index

Principal component	Eigen value	Proportion	Cumulative
1	4.801	0.800	0.800
2	0.485	0.081	0.881
3	0.394	0.066	0.947
4	0.143	0.024	0.970
5	0.099	0.017	0.987
6	0.078	0.013	1.0000
Diagnostic	Overall value		
Kaiser–Meyer–Oklin Measure of Sampling Adequacy	0.903		

Notes

1. These countries include Algeria, Benin, Botswana, Burkina Faso, Cameroon, Cote d'Ivoire, Egypt, Gabon, Ghana, Guinea-Bissau, Kenya, Madagascar, Mali, Mauritius, Morocco, Niger, Nigeria, Rwanda, Senegal, South Africa, Sudan, Tanzania, Togo and Tunisia.
2. See https://www.sendvalu.com/en/blog/article/how-remittances-are-transforming-african-communities
3. For more details about the measurement of the economic freedom index, see https://www.heritage.org/index/pdf/2023/book/2023_IndexOfEconomicFreedom_FINAL.pdf

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