

Received: 17 November 2022 Accepted: 10 February 2023

DOI: <https://doi.org/10.47059/rr.v8i1.80007>

Impact of e- Government and Remittances on Business Creation: Evidence from Global Panel Data

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Abstract

Remittances smooth out the income and expenditures of recipient households, enhancing their quality of life, but less is known about their impact on cross-border commercial activity. Likewise, governments worldwide are actively promoting entrepreneurship. Governments have also used digital technology, particularly the online delivery of government services. This study examines the effect of remittances and online government services, i.e., e-government, on forming new businesses worldwide from 2006 to 2020. In addition, the study considers the impact of the gross domestic product, unemployment, and government spending on firm formation. Due to the presence of cross-sectional dependence (CSD) and slope heterogeneity in the data, the second generation panel estimates Cross Sectional Autoregressive Distributed Lag Model (CS-ARDL) is used to determine short and long-run coefficients. According to the major findings, remittances and e-government have favorable and significant short- and long-term effects on forming new businesses. Additionally, GDP and government spending were found to contribute to creating new business prospects. However, unemployment has no substantial short-term or long-term influence on a company. Moreover, pertinent policies are offered based on the findings.

Keywords: e-government, remittances, new business creation, CS-ARDL

1. Introduction

The topic of remittances sent home by international employees is a top priority for researchers who study worldwide migration trends (Loxha, 2019). Remittances confer a variety of benefits on receiving nations. In numerous countries, remittances are a significant source of informal financing (Nanyiti & Sseruyange, 2022). Since international remittances are an essential source of foreign exchange reserves, receiving nations may benefit from a more equitable allocation of capital flows into their economy (Taylor, 2004). This is justified by the growth of the economy and the infrastructure. In many nations, remittances constitute a substantial portion of the uncontrolled financial system. They are vital for financing the expansion of lucrative investments and assisting consumers in rebalancing their spending in the wake of economic disruptions (Giles & Yoo, 2007). Remittances have surpassed administrative development assistance to become, behind foreign direct investments, the country's second-largest source of cash inflows during the past two decades (Shirazi, Javed, & Ashraf, 2018; Ur Rehman & Hysa, 2021). This demonstrates how substantial a financial contribution remittances make to the countries (Alshammari, Faras, & Alshuwaiee, 2022).

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When remittances are allocated to investments, they provide financial resources that lower the economic constraints on potential company endeavors. Remittances specifically facilitate the formation of commercial enterprises and serve as a source of financing for human capital investments (Woodruff & Zenteno, 2007). Investing in human capital encourages entrepreneurship by increasing the availability of competent labor, which increases one's purchasing power and reputation. In addition, remittances enhance health expenditures, which reduces child mortality and malnutrition (V. L. Almeida et al., 2019). However, remittances reduce female labor force participation while not affecting male involvement. In addition, because financial and economic organizations provide a transmission route via which recipients receive remittances, remittances are tied to the growth of financial institutions. Due to the volume of remittances channeled through these organizations, many recipients elect to save with existing financial institutions (Liu & Yan, 2021; Nanyiti & Sseruyange, 2022).

Nowadays, governments are acutely aware of the significance of new firms to their economies, especially in job creation. To accomplish this, they support a variety of programs designed to promote entrepreneurship, including business plan competitions, entrepreneur consulting and training, start-up incubators, enterprise tax breaks, capital financing and financial incentives, and the personal choice for domestic goods in government contracting (Cravo & Piza, 2019). Despite these efforts, most new ventures fail in their infancy before becoming "going concerns" (Fotopoulos & Storey, 2019). Simplifying the procedure of launching a new firm could encourage more business owners to benefit from the initiative. Saving money and time during the start-up period should increase their likelihood of success. Moving toward e-government will help users of government services to save time and money, which is a step in the same direction (Das & Das, 2021).

Notably, in recent years, the governments of migrants' home countries have relied increasingly on digital infrastructures such as websites and virtual systems (e-government) to provide migrants with a variety of business-related services. Since the late 1990s, governments have implemented e-government platforms to provide citizens and businesses with access to high-quality electronic information and services (Torres, Pina, & Acerete, 2005). In addition to improving service delivery and democracy, new technologies in the public sector have enhanced national business competitiveness by reducing corruption and boosting transparency (Hossain, Moon, Kim, & Choe, 2011; West, 2004). E-government has been embraced to expand political participation, reduce corruption, and improve administrative openness.

In this study, we examine how e-government, specifically the online delivery of government services, has been leveraged to its full potential to enable the development of new businesses worldwide. This study's primary purpose is to assess e-government and remittances' impact on the global emergence of new businesses (Hirt & Mohammad, 2021). The effect of remittances on macroeconomic parameters has received a great deal of attention at both the macro and micro levels, although the literature that explores the impact of remittances on business activity consists primarily of individual country studies (Kakhkharov, 2019; Phuong & Magnani, 2012).

A few studies have calculated the impact of remittances on business creation or entrepreneurship in various nations (Korosteleva & Mickiewicz, 2011; Nanyiti & Sseruyange, 2022; Zheng & Musteen, 2018). However, boosting entrepreneurship supported by remittances is contingent on several conditions in the host and home countries of migrants. Among these, e-government has been widely explored by previous studies such as Das and Das (2021), G. d. O. Almeida and Zouain (2016), Datta and Saxena (2013) and Matlay (2004). However, this research primarily focused on specific nations or groups of countries. To our knowledge, no previous study has quantified the impact of remittances and e-government on global new company development. Moreover, to the best of our knowledge, the development of the government's digital infrastructure or e-government in the home countries of migrants as a condition for supporting entrepreneurship has not been empirically explored, despite the growing body of literature on remittances and business creation. To overcome this research vacuum, we intend to estimate the impact of e-government and remittances on the establishment of new businesses using a worldwide panel of 145 nations from 2006 to 2020. It highlights how e-government and remittances encourage new entrepreneurship in nations. In addition, the study examines the impact of economic development, government spending, and unemployment on the formation of new businesses in each country. In addition, the study has methodological significance in terms of remittances, e-government, and new company formation literature compared to prior research. The work used second-generation unit root and cointegration tests and CS-ARDL analysis for coefficient estimation, which solves the issue of slope heterogeneity and CSD and yields more reliable results than prior panel estimation techniques (PARENTI & RANDALL, 2020).

In particular, the study addresses the following research questions:

1. What is the impact of remittances on business creation globally?
2. What is the effect of e-government on business creation globally?

2. Review of previous literature

The previous literature is divided into 2 strands for review. The first strand reviews remittances and business creation studies, and the second reviews e-government and business creation studies.

2.1 Remittances and Business Creation

Existing research has proven that there are numerous connections between remittances and entrepreneurship. Using data from 63 countries, Nanyiti and Sseruyange (2022) estimated the impact of remittances on entrepreneurship from 1981 to 2011. Using a dynamic panel data estimate approach, it was determined that remittances have a beneficial effect on entrepreneurship and that this effect is particularly pronounced in low-income nations. Alhassan, Maswana, and Inaba (2022) analyzed data from 79 developing countries to determine the impact of remittances and financial development on formal business development from 2006 to 2020. Using Driscoll-Kraay standard errors, Feasible Generalized Least Squares, and GMM estimation, the authors concluded that financial growth and remittances favor formal entrepreneurship in the researched nations. Using data from 50

developing countries from 2002 to 2007, Vaaler (2013) examined the impact of remittances on venture capital investment in selected economies. Multiple regression studies revealed that remittances encouraged venture investments in the nations that received them. Vasco (2013) studied the influence of remittances and migration on rural businesses using data from Ecuador. Probit regression results suggested that remittances have a negligible effect on rural household businesses. Vaaler (2011) used data from 61 countries to determine the impact of remittances on entrepreneurship in selected nations. According to the findings, remittances have a favorable effect on the establishment of businesses in underdeveloped nations.

Additionally, Hansing and Orozco (2014) noted that remittances helped the growth of business operations in Cuba. Folorunsho M. Ajide and Osinubi (2022) Examined the moderating effect of remittances on the relationship between foreign aid and entrepreneurship in 19 African countries. According to the results of 2SLS estimations, remittances played a positive moderating role in the relationship between entrepreneurship and remittances. Asongu, Biekpe, and Tchamyou (2019) studied the influence of ICT and remittances on conducting business in 49 Sub-Saharan African economies. The GMM estimation results suggested that the remittance effect was beneficial for business creation in Sub-Saharan African economies.

2.2 E-government and Business Creation

Alhassan (2022) analyzed data from 55 recipient-receiving nations to determine the relationship between remittances, e-government, and new business formation in emerging countries from 2003 to 2019. Using Driscoll-Kraay standard errors and Generalized Least Squares, the authors determined that remittances had no significant impact on business creation in the studied nations. However, e-government had a favorable impact. Reddick and Roy (2013) investigated company perceptions of e-government in Canada and discovered that businesses had good attitudes toward e-government and were satisfied with government operations. Ha (2022) investigated the effect of e-government on business in European countries from 2012 to 2019, and the results of a multiple regression analysis revealed that e-government has a favorable impact on business formation in the countries surveyed. Datta and Saxena (2013) investigated the effect of e-government on entrepreneurial activities in India and discovered that eliminating bottlenecks increased the relationship between e-government and entrepreneurship in India. Pakhalov, Rozhkova, and Alexopoulos (2020) investigated the relationship between regional investment and e-government activities in Russia and discovered a favorable correlation between regional investment opportunities and e-government activities in Russia. Zouain and de Oliveira Almeida (2013) analyzed and investigated the impact of e-government on ease of doing business. According to their findings, e-government positively impacted the ease of doing business. de Oliveira Almeida and Moraes Zouain (2016) investigated the relationship between ease of doing business and e-government in high, medium, and low-income economies and found that e-government positively impacted the ease of doing business.

2.3 Research Gap

Numerous previous studies have evaluated the influence of remittances and e-government

on entrepreneurship and firm creation, according to the review of relevant literature. The investigations focused on various countries and panels of countries. However, the primary emphasis was only on developing nations. The present study identifies and fills this gap by investigating the influence of remittances on e-government using a worldwide panel of 145 countries to conduct a more thorough evaluation. In contrast to previous studies that employed various estimations such as GMM, Driscoll-Kraay Standard errors, and Generalized least squares, the present work uses a second-generation panel CS-ARDL estimation approach that can account for CSD and yields effective results.

3. Data and Methodology

As stated previously, the purpose of the study is to quantify the impact of E-government and remittances on the global formation of new businesses. To achieve the purpose of the study, the following explanatory and control variables are added to the model:

$$NBD = f(\text{REM}, \text{E-GOV}, \text{GDP}, \text{GOVEXP}, \text{UNEMP}) \tag{1}$$

NBD stands for the number of new businesses, E-GOV for e-governance, GOVEXP for government expenditures, and UNEMP for unemployment. The study's primary explanatory variables are E-GOV and REM, whereas GDP, GOVEXP, and UNEMP are control variables. The econometric form of the model is specified as follows:

$$NBD_{it} = \beta_0 + \beta_1 \text{REM}_{it} + \beta_2 \text{EGOV}_{it} + \beta_3 \text{GDP}_{it} + \beta_4 \text{GOVEXP}_{it} + \beta_5 \text{UNEMP}_{it} + \varepsilon_{it} \tag{2}$$

Referring to the measurement of variables, NBD is computed as the number of newly registered firms per one thousand people of working age. This is known as the new business density (those ages 15 to 64). Several prior studies have employed this measurement for formal entrepreneurship, including (Folorunsho M Ajide, 2020; Folorunsho M. Ajide & Osinubi, 2022; Alhassan, 2022). The e-government development index is used to measure the development of E-GOV. On a scale of 0 to 1, it evaluates the capability and readiness of UN country governments to use ICT to carry out their services and responsibilities. The greater values indicate a more rapid expansion of e-government. Personal remittances are used to measure remittances (% of GDP). GDP is equivalent to Gross Domestic Product (constant 2015 U.S. dollars). UNEMP represents the unemployment rate, and GOVEXP represents government expenditures (as a percentage of GDP). World Development Indicators, the World Bank Entrepreneurship Database, and the United Nations e-Knowledge Database provide 2006-2020 statistics for all of these variables for 145 countries belonging to all income groups.

3.1 Methodology

Cross-Sectional Dependence and Unit Root Testing

Before beginning the empirical investigation, we verify the interdependence of the cross sections in our study. It is advantageous to use unit root analyses from multiple generations of tests to address CSD and go on to unit root testing. CSD is influenced by many factors, including

economic and financial integrations, shared shocks (such as oil price shocks), residual dependency, globalization, and the global financial crisis. CSD cannot be neglected since it can lead to erroneous estimations, biased stationarity, skewed size distortion, and distorted cointegration results. The (Pesaran, 2021) test is used to determine whether or not CSD is present.

Statistics for the CSD test are provided as follows:

$$CD = \sqrt{\frac{2T}{N(N-1)}} \left(\sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij} \right) \sim N(0,1) \quad (i)$$

$$CD = 1 \text{ to } N \quad (ii)$$

$$M = \sqrt{\frac{2T}{N(N-1)}} \left(\sum_{i=1}^{N-1} \sum_{j=i+1}^N \hat{\rho}_{ij} \right) \frac{(T-k) \hat{\rho}_{ij}^2 - E(T-k) \hat{\rho}_{ij}^2}{\text{Var}(T-k) \hat{\rho}_{ij}^2} \quad (iii)$$

$\hat{\rho}_{ij}^2$ represents pairwise residual correlation. We fail to reject the null hypothesis if there is no CSD in the panel series.

Once the CSD estimation has been calculated, the stationary or non-stationary condition of the panel data must be determined. Numerous researchers concentrate on the issue of panel data unit root. First, second, and third-generation unit root tests are the three primary categories for managing the non-stationarity of data. The categories are further subdivided based on the multiple obstacles addressed by each strategy. However, the first and second generations lose power and perform poorly if the data contains structural breakdowns. The third generation of unit root testing is resistant to probable structural investigations. When structural breaks are present, panel data are heterogeneous. For testing data stationarity, the Pesaran (2007) and Bai and Carrion-I-Silvestre (2009) tests are used because the existence of dependence renders the application of first-generation tests ineffective (Jalil, 2014).

Cointegration Testing

After identifying the order of integration of the variables, we assess the heterogeneity or homogeneity of slope parameters using cointegration, as modified or standardized by Pesaran and Yamagata (2008). It is assumed that the slope parameters are homogeneous in H0 and heterogeneous in H1. Due to size factor distortion, the first generation of cointegration algorithms cannot generate valid coefficients since they assume no dependency between the analyzed cross-sections or individuals. In instances where non-stationarity, CSD, and heterogeneity problems exist in the series, the heterogeneous estimating technique provided by Westerlund and Edgerton (2008) is applied. In addition to addressing the abovementioned issues, the approach accounts for structural fractures where cointegration is present. Westerlund (2007) fails to account for breaks when considering heterogeneous slopes parameter and CSD, which would prevent the null hypothesis of no cointegration from being rejected. In contrast, Westerlund and Edgerton (2008) analyzed CSD, heterogeneity, and correlated error for every unit in addition to any structural fractures. This method accounts for weak and strong CSD, heterogeneity, and non-stationarity of data that can be accurately assessed within the context of erroneous regression.

CS-ARDL Estimation

The global economic and financial crisis and rising oil costs are two frequent shocks that could affect the CSD problem. If model regressors are linked to unknown common components, incorrect conclusions may be reached. This strategy is applicable when both heterogeneity and CSD problems arise. CS-ARDL estimation adopts a common correlated dynamic effects estimator to circumvent these issues. The preliminary phase of CS-ARDL consists of the following:

$$W_{it} = \sum_{l=0}^{p_w} \gamma_{l,i} W_{i,t-l} + \sum_{l=0}^{p_z} \beta_{l,i} Z_{i,t-l} + \epsilon_{it} \quad (iv)$$

Equation (iv) contains an ARDL model. When CSD is present, using eq (v) yields deceptive results. Equation (v) is a modified version of equation (iv) that employs the cross-sectional mean of regressors to avoid unsatisfactory results regarding the presence of the threshold influence that cross-sectional dependency generates.

$$W_{it} = \sum_{l=0}^{p_w} \gamma_{l,i} W_{i,t-l} + \sum_{l=0}^{p_z} \beta_{l,i} Z_{i,t-l} + \sum_{l=0}^{p_x} \alpha'_i \bar{X}_{t-l} + \epsilon_{it} \quad (v)$$

$\bar{X}_{t-l} = \bar{W}_{it-l}, \bar{Z}_{it-l}$ show mean of independent and dependent variables, p_x, p_w, p_z , represent lags. In addition, W_{it} shows the dependent, Z_{it} shows all independent variables, and X represents the cross-sectional mean. Parameters of the short run are employed in the CS-ARDL method to calculate the parameters for the long run. An example of the Mean Group estimation is shown below.

$$\hat{\pi}_{CS-ARDL_i} = \frac{\sum_{l=0}^{p_z} \hat{\beta}_{li}^{p_w}}{1 - \sum_{l=0}^{p_z} \hat{\beta}_{li}^{p_w}} \hat{\gamma}_{li} \quad (vi)$$

the mean group is given in eq (vi) as

$$\hat{\pi}_{MG} = \frac{1}{N} \sum_{i=1}^N \hat{\pi}_i \quad (vii)$$

Equation (viii) gives the short-run coefficients.

$$\Delta W_{it} = \vartheta_i (W_{it} - \pi_i Z_{it}) - \sum_{l=1}^{p_w-1} \gamma_{li} \Delta_l W_{it-1} + \sum_{l=0}^{p_z} \beta_{li} \Delta_l Z_{it} + \sum_{l=0}^{p_x} \alpha'_i \bar{X}_t + \epsilon_{it} \quad (viii)$$

And ΔI is equal to $t-(t-1)$

$$\hat{\tau}_i = -(1 - \sum_{l=1}^{p_w} \hat{\gamma}_{li}) \quad (ix)$$

$$\hat{\pi}_i = \frac{\sum_{l=0}^{p_z} \hat{\beta}_{li}}{\hat{\tau}_i} \quad (x)$$

$$\hat{\pi}_{MG} = \frac{1}{N} \sum_{i=1}^N \hat{\pi}_i \quad (xi)$$

ECM is the speed of adjustment towards equilibrium.

4. Empirical Findings and Discussions

Before proceeding to the formal analysis, including CSD, slope heterogeneity, and unit root tests, preliminary estimation is required. Table 1 displays the CSD analysis findings, indicating that CSD is present in the studied variables.

Table 1: Findings of the CSD Test

Variables	t-stat (p-value)
REM	28.212*** (0.000)
E-GOV	12.421*** (0.000)
NBD	13.332*** (0.000)
GDP	24.330*** (0.000)
GOVEXP	19.464*** (0.000)
UNEMP	

*** shows a 1 % significance level. Parentheses enclose prob values.

Next, slope heterogeneity is examined using the method proposed by Pesaran and Yamagata (2008). Table 2 demonstrates that our data have a slope heterogeneity problem.

Table 2: Findings of Slope Homogeneity Test

Dependent variable: NBD	
Test stat	Test value/ P value
Delta tilde ($\tilde{\Delta}$)	43.012*** (0.010)
Adjusted Delta tilde ($\tilde{\Delta}_{adj}$)	44.545*** (0.005)

*** shows a 1 % significance level. Parentheses enclose p- values.

The subsequent step includes analyzing the stationarity of all parameters due to CSD and heterogeneous slopes. For this reason, CIPS and (Bai & Carrion-I-Silvestre, 2009) are utilized. Table 3 displays the outcomes.

Table 3: Findings of Unit Root Test (Without and with Structural Break)

Series/Variables	Level		First Difference			
	CIPS	MCIPS	CIPS	MCIPS		
NBD	-4.010***	-4.135**	-	-		
REM	-3.130***	-4.014**	-	-		
E-GOV	-3.122***	-4.312**	-	-		
GDP	-4.211***	-3.011**	-	-		
GOVEXP	-3.130***	-4.031**	-	-		
UNEMP	-4.110***	-3.011**	-	-		
(Bai & Carrion-I-Silvestre, 2009)						
	Z	P _m	P	Z	P _m	P
NBD	0.414	0.446	23.142	-3.140***	4.112***	43.103***
REM	0.382	0.355	15.110	-3.141***	3.511***	23.133***
E-GOV	0.334	0.343	21.134	-4.143***	4.320***	54.416***
GDP	0.454	0.340	15.432	-3.023***	4.441***	43.234***

GOVEXP	0.433	0.435	14.511	-4.045***	4.316***	34.134***
UNEMP	0.342	0.447	15.143	-4.043***	3.004***	24.111***

*** shows significance at a 1% level.

Bai and Carrion-I-Silvestre (2009): critical values 2.326, 1.645 & 1.282 for 1%, 5 and 10% significance levels (*Pm* and *Z* stat), while essential values for *P* are 48.60, 44.90, and 56.06.

M-CIPS and CIPS results indicate that the alternative hypothesis is accepted and that all variables are level and stationary. According to the findings of Bai and Carrion-I-Silvestre (2009), series have unit roots at the level. However, this issue is rectified by taking into consideration the initial disparity.

Next, we conducted a cointegration test that considers structural breakdowns (Westerlund & Edgerton, 2008), and the results are presented in Table 4.

Table 4: Findings of the Cointegration Test

Test	No break	Mean Shift	Regime Shift
Dependent variable: NBD			
$Z_p(N)$	-4.133***	-5.121***	-4.311***
P_{value}	0.000	0.000	0.000
$Z_\tau(N)$	-3.421***	-3.157***	-4.223***
P_{value}	0.000	0.000	0.000

The test findings prove the cointegration connection among NBD, REM, E-GOV, GOVEXP, GDP, and UNEMP at mean shift, regime shift, and without a structural break.

Table 5: CS-ARDL Analysis

Dep variable: NBD

Series	Long Run Estimates			Short Run Estimates		
	Parameter	t-statistics	P-value	Parameter	t-statistics	P-value
REM	1.346***	3.428	0.000	2.634***	4.235	0.000
E-GOV	2.614***	2.373	0.056	1.780***	3.256	0.060
GDP	2.543***	2.232	0.040	2.023***	3.330	0.004
GOVEXP	-0.435**	-3.923	0.001	-0.714***	-3.412	0.000
UNEMP	0.226***	3.554	0.000	0.567***	4.475	0.009
ECT(-1)	-0.267***	-3.540	0.000			
CSD-Stat	-	-	-		0.088	0.460

10% and 1% significance levels are denoted by *** and **, respectively.

After finishing the fundamental analysis, the link between panel variables is estimated. Examining the output parameters using CS-ARDL panel estimate The short-run and long-run coefficients are displayed in Table 5. According to the data, e-GOV has a significant and favorable impact on NBD in the short and long term. In terms of the coefficient, each unit increase in E-GOVER results in an increase of 2.61 units in the long run and 1.78 units in

the short run. The findings are valid and highlight the need to support formal entrepreneurship by automating governmental services and decreasing business registration procedures' time, cost, and complexity. This is consistent with other academic research on the relationship between new business and e-government, such as Das and Das (2021), Abu-Shanab and Osmani (2019), Al-Sadiq (2021), and Alhassan (2022). In general, economies with improved e-government services will be in a stronger position to invest in new firms.

In the CS-ARDL study, the coefficient of REM is positive and significant, indicating that REM has a detrimental effect on NBD in both the long and short run. Each unit increase in REM raises NBD by 1.34 units in the long run and 2.63 units in the short term. This research shows that remittances contribute to the establishment of enterprises in recipient nations, perhaps by supplying start-up money. Our findings are consistent with those of Kakhkharov (2019), Zheng and Musteen (2018), and Nanyiti and Sseruyange (2022).

GOVEXP is shown to have a negative and substantial effect on NBD in both the short and long term for control factors. Each unit increase in GOVEXP decreases NBD by 0.43 and 0.71 units in the long and short run, respectively. This data supports the idea that an increase in government spending suggests a stronger role for the government in economic activity, which crowds out private investment. Our findings are supported by Aidis, Estrin, and Mickiewicz (2012), Islam (2015), and Alhassan (2022). The coefficient sign for GDP in both periods is positive and significant. Each unit increase in GDP is associated with an increase of 2.54 units in the long run and 2.02 units in the short run. The result demonstrates that growth in GDP results in the formation of formal enterprises in the economy. Our findings are substantially supported by the findings of Vatavu, Dogaru, Moldovan, and Lobont (2022), Dvouletý and Mareš (2016), and Alhassan (2022). Unemployment has negligible effects on NBD in both the long and the short run, consistent with Mahadea and Kaseeram (2018), and Ghavidel, Farjadi, and Mohammadpour (2011).

5. Concluding Remarks and Policy Implications

In light of the growing body of research devoted to determining what drives and limits the effect of remittances on business creation in various countries, the present study contributes to the literature by analyzing the impact of remittances and e-government on new business creation in 145 countries over the period 2006-2020. Second-generation panel estimate The CS-ARDL method is utilized for empirical estimation due to the presence of CSD in the study data. Using new business density as a measure of new business development, the results reveal that remittances have a considerable positive effect on new businesses in the short and long term. Using data from the e-government index, the results demonstrate the significant and positive influence of e-government on the establishment of new businesses worldwide. In addition, the data demonstrate the positive and considerable impact of GDP and government spending on forming new businesses, whereas unemployment has no meaningful effect on business formation globally.

There are policy recommendations for governments and policymakers in the findings. First,

the positive impact of e-government on the formation of new businesses suggests that to reduce information asymmetry and reduce the costs incurred by migrants searching for and negotiating investment opportunities, governments should prioritize sharing information on viable business opportunities with migrants. Government agencies must consolidate their tasks via online services to reduce the amount of time and procedures that could hinder private investment in an economy. New websites with open access should also be created to advise migrants of lucrative business opportunities in their home countries. Realizing this will encourage potential immigrant entrepreneurs to pursue opportunity-driven firms that significantly contribute to the nation's economic growth through entrepreneurship and job creation.

Similarly, from a policy perspective, our findings show that for remittances to contribute to entrepreneurship sustainably, there must be an unlimited transfer of remittances through strong bilateral ties to maximize the effects of supporting the growth of entrepreneurship. To increase the volume of remittances, administrative impediments to migration must be removed. In addition, decreased transaction costs, financial sectors, and mechanisms should be utilized to effectively generate remittances and allocate them to the development of formal enterprise.

Acknowledgement: This work was supported by the Deanship of Scientific Research, Vice Presidency for Graduate Studies and Scientific Research, King Faisal University, Saudi Arabia [Grant No. 2860]

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