Institutional Quality, Co-operatives, and Economic Transformation in Uganda: Fresh Policy insights from Endogenous Growth Theory

By

Godfrey Joachim[1] and Davis Junior[2]

[1]Moshi Co-operative University Kilimanjaro Tanzania and

[2]Kyambogo University, Uganda, Corresponding email: juniordavism@gmail.com

Abstract

Co-operatives in Uganda have been growing steadily in terms of membership and capital investment. Theories suggest that strong co-operatives, combined with good institutions, can drive economic development. However, there are few studies exploring how institutional quality and co-operatives jointly impact economic growth from a macroeconomic perspective. This paper aims to examine the effects of co-operatives and institutional quality on economic development, analysing both direct and indirect effects using advanced estimation techniques. The study covers 1,105 active co-operatives across 19 districts from 2000 to 2023. The descriptive analysis reveals a decline in co-operative membership from 310 in 2019 to 199 in 2022. Institutional quality indicators are also notably low, (43.92) as indicated by additive index. Specific institutional quality indicators such as political stability (11.55), rule of law (41.72), and voice and accountability (29.40) are specifically rated poor in Uganda. Applying endogenous growth theory and a bias-corrected linear dynamic panel model, the analysis shows that weak institutional significantly hampers economic development and co-operative growth. Poor political stability, rule of law, and voice and accountability negatively affect co-operative performance, overshadowing any positive impacts from improved government effectiveness, corruption control, and regulatory measures. To enhance the benefits of co-operative investments, Uganda's co-operative sector and government need to strengthen political stability, establish the rule of law, and improve voice and accountability mechanisms.

Keywords: Co-operatives, Institutional Quality, Economic Development, Uganda, Endogenous Growth Theory

Introduction

Co-operatives are community-based, rooted in democracy, flexible and have a participatory contribution, which makes them well-suited for economic development (Gertler, 2001; Priyono; Sandeep and Kumar, 2018). The underlying assumptions of co-operatives are to develop and promote communities' spirit, identity and social organisation in the context of job creation, social capital networking and reducing the intensity of poverty (Shava and Hofisi, 2019). Pasara *et al.* (2021) iterate that Savings and Credit Cooperatives (SACCOS) play a key role in fostering financial inclusion by increasing the odds of credit access to rural households, which in turn, invested to enhance the overall economic well-being of co-operative members.

Considering gender perspectives, stable and well-institutionalised co-operatives are viewed as the lubricating oil in elevating living and working conditions of both women and men (Candemir *et al.,* 2021; Gomathy *et al.,* 2022; Sexton and Iskow, 2021). It is well acknowledged that co-operatives governed by good institutional quality tend to improve market access, bargaining power, and access to inputs for smallholder farmers, leading to increased agricultural output (Candemir *et al.,* 2021; Mundia *et al.,* 2023; Nyawo and Olorunfemi, 2023; Tefera *et al.,* 2017). On a similar note, Poulton *et al.* (2010) and Manirakiza *et al.* (2020) argued that market-related costs can be reduced through a co-operative' collective action- as a beneficial strategy for realizing economies of scale and scope. Co-operatives, facilitate input access for farmers through bulk purchases, which subsequently lowers input prices (Ahado *et al.,* 2021; Mundia *et al.,* 2023).

Furthermore, co-operatives are specifically seen as a significant tool for resource mobilization, and joint investments, providing employment opportunities and income generation (Katwesigye *et al.,* 2022; Sexton and Iskow, 2021). Looking beyond financial and agricultural benefits, (Eseza and Nyakundi, 2023; Okello Candiya

Bongomin *et al.,* 2018; Sexton and Iskow, 2021) cemented the importance of co-operatives in promoting social capital and entrepreneurship. The same studies alluded that co-operative foster trust, collaboration, and risk-sharing among members, creating an environment conducive to starting and running businesses which subsequently contributes to economic growth.

Studies have employed panel data regression analysis to investigate the relationship between institutional quality and economic growth. For example, using data from 25 emerging nations (Uddin *et al.,* 2023; Ullah *et al.,* 2024; Wani *et al.,* 2023) observed a positive association between institutional quality and economic development**.** Corroborating the same, (Gasimov *et al.,* 2023; Nguyen *et al.,* 2022) used data from 69 emerging nations to establish a positive association between institutional quality and economic growth. Other studies have confirmed a positive and significant effect of specific indicators of institutional quality such as the rule of law and governance on economic growth (Fathi *et al.,* 2022; Gasimov *et al.,* 2023; Mehmood *et al.,* 2023; Pradhan *et al.,* 2023). However, the employed estimation techniques were not able to account for cross-sectional dependence (Kripfganz and Breitung, 2022) commonly found on macroeconomic data and were limited to country specifics.

Co-operatives and institutional quality are crucial in explaining the path of economic transformation of countries. A stylized fact shows that the co-operatives sector in Uganda has registered a huge transformation in terms of membership, co-operative capital investment and co-operative business turnovers. The growth of capital investment and business turnover has been trending upward except for the year 2013 as shown in Figures 1 and 2. Co-operative total capital investment was 4.8 UGX billion in 2010 but increased to 9.47 UGX billion in the year 2022. This corresponds to an increase in the business turnover from 0.411 UGX billion to 0.924 UGX billion between the years 2010 and 2022, respectively. Membership within co-operatives has also exhibited an upward and downward trend from 2010 to 2019 and from 2019 to 2022 respectively (see, Figure 3). The relationship between co-operatives and economic development can be explained by other macroeconomic variables such as national capital stock, labour force and institutional quality. The institutional quality index in Uganda has steadily improved from 40 to 49 from 2010 to 2022. Figures 1, 2 and 3 show the trend of co-operatives' total capital investment, business turnover and membership in Uganda.

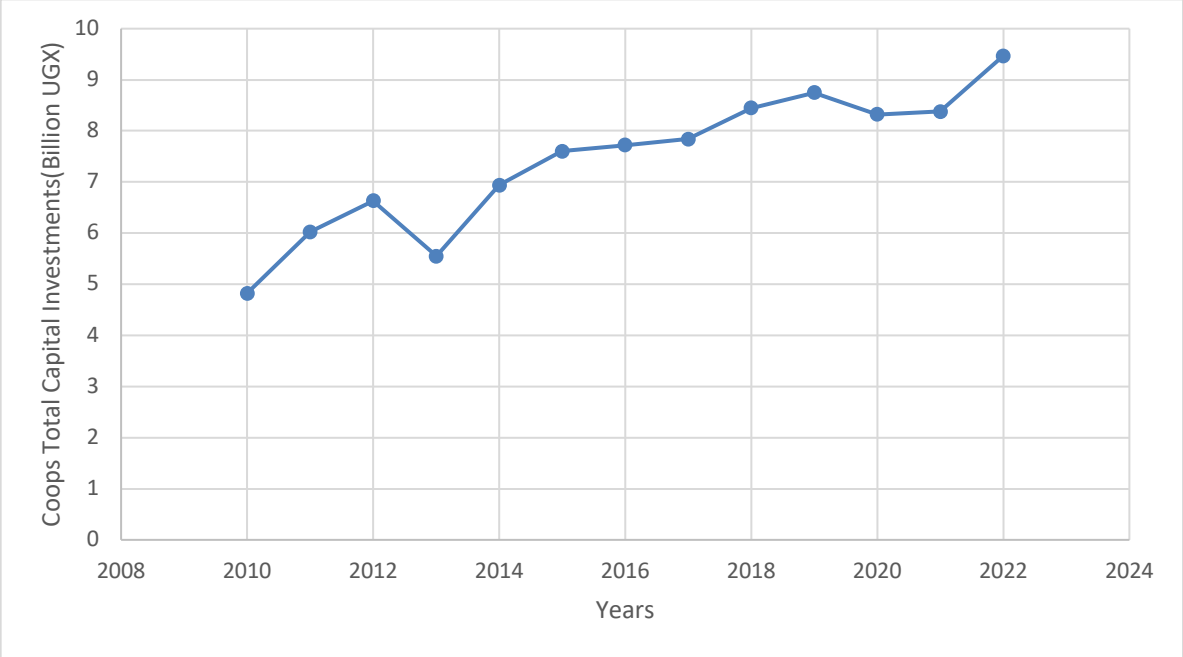

Figure 1: The trends of Co-operatives total capital investment in Uganda

Source: *Authors construct from Uganda Co-operative Sector data 2010-2022*

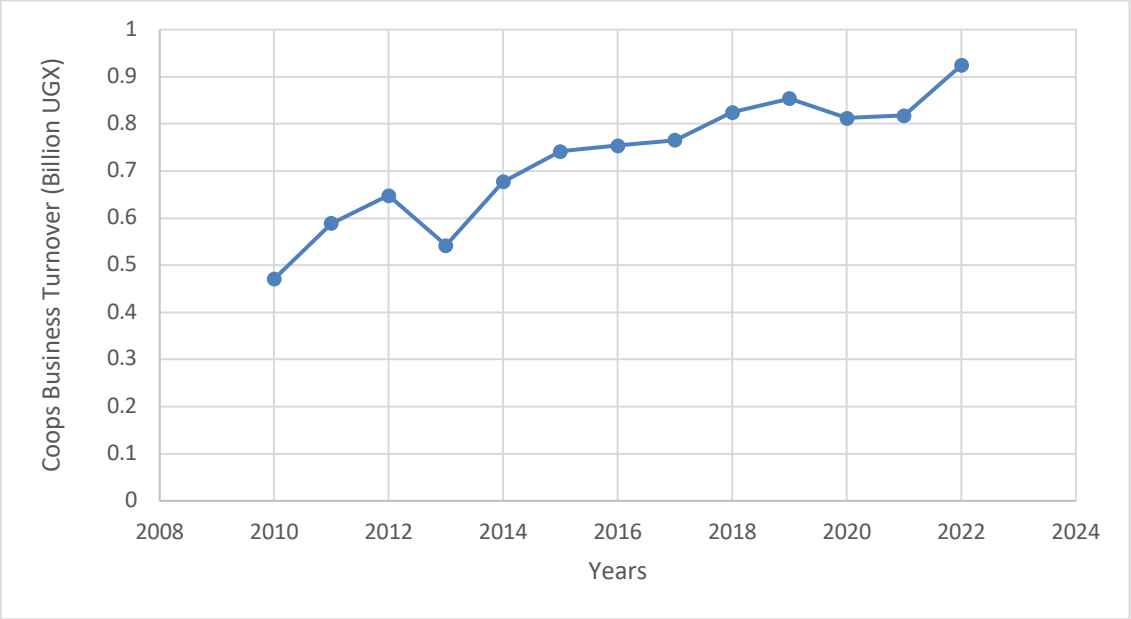

Figure 2: The trends of co-operatives business turnover in Uganda

Source: *Authors construct from Uganda Co-operative Sector data 2010-2022*

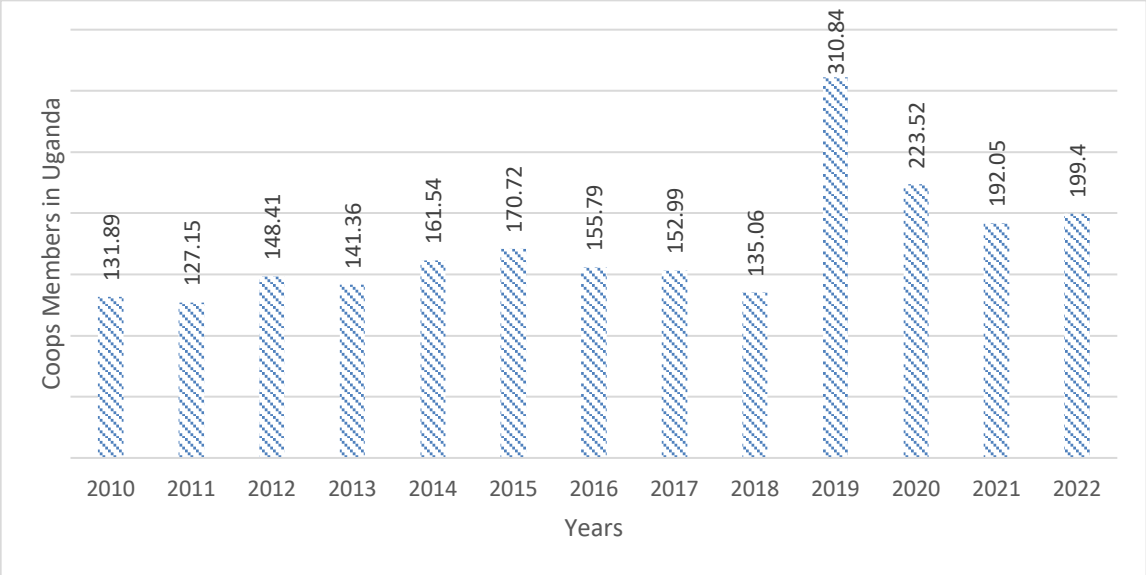

Figure 2: The trends of co-operatives membership in Uganda

Source: *Authors construct from Uganda Co-operative Sector data 2010-2022*

Other institutional quality indicators such as the rule of law, and regulatory quality have averaged to 47, for the years 2010 and 2019. Since then, these indicators performed poorly (See, Table 2).

Table 2: Institutional Quality index and indicators

Year	Institutional index	Control of corruption	Government effectiveness	Political stability	Regulatory quality	Rule of law	Voice and acceptability
2010	40	18.57	35.41	16.11	46.89	42.18	30.81
2011	39	18.96	35.07	18.01	47.39	44.13	30.99
2012	40	17.06	32.23	20.38	43.6	44.13	31.92
2013	42.5	15.02	31.74	17.81	44.4	42.5	30.99
2014	45	12.98	31.25	15.24	45.19	40.87	30.05
2015	43	13.33	32.38	20.95	43.81	40.48	29.06
2016	43	12.86	30.48	21.43	43.33	44.76	28.57
2017	42	13.81	30.48	26.67	41.9	40.95	31.03
2018	46	13.81	24.29	21.23	41.43	41.43	28.64
2019	47	11.43	28.1	22.17	36.67	41.43	28.99
2020	46	16.19	29.05	18.87	36.19	40.95	29.47
2021	48	16.19	31.43	17.92	34.76	39.52	25.6
2022	49	16.51	31.13	17.45	33.02	39.15	26.09

Political stability is among the ranked low institutional quality in the country. Despite these facts, there is thin literature linking empirically the joint effects of co-operatives and institutional quality on economic development in Uganda. The quality of institutions can shape economic activity by providing the rules, regulations, and frameworks that govern economic activity and shape the incentives that drive economic agents' behaviour.

Literature highlights the potential benefits of co-operatives in fostering economic development. Some of this literature emphasizes the role of co-operatives in addressing market failures (Bhattarai and Pandit, 2023; Golovina and Ruchkin, 2023; Trisniarti *et al.,* 2022). Along these schools of thought, co-operatives can improve market access for small producers and consumers by aggregating resources and bargaining power which subsequently increases efficiency and eventually, economic growth. (Halilintar, 2018), emphasized the role of social capital in pooling resources within the co-operative members. On a similar note, community networking can improve access to financial capital and other resources (Eseza and Nyakundi, 2023; Majee and Hoyt, 2011; Priyono; Royer, 2023). In this context, co-operatives and their social ties can easily access outside resources.

Bah and Dumbuya (2022) and Rawashdeh *et al.* (2022), cemented the importance of institutional factors, such as control of corruption, in driving economic growth. By extension, Alexiou *et al.* (2020), Gasimov *et al.* (2023) and Nguyen *et al.* (2022) showed that institutional quality has a more substantial positive effect on economic growth compared to financial development. Building on the same argument scholars advocate for a strong

institution (secure property rights, rule of law, limited corruption and good governance) in flourishing investment, entrepreneurship and innovation which in turn, increases efficiency in resource allocation and fosters long-term economic growth (Acemoglu *et al.,* 2019; Acemoglu and Robinson, 2021; Bardhan, 2022).

Utilising a panel dataset Alomaisi *et al.* (2016), Azimi (2022) and Mahran (2023), found that good governance enhances growth. Addi and Abubakar (2024) argued that countries with strong property rights and efficient contract enforcement mechanisms create a stable environment that encourages investment and economic activity. Another strand of studies highlights a negative correlation between corruption and economic growth (Aytekin, 2022; Fayad, 2023; Refakar and Cárdenas, 2023). Indeed, Bakare *et al.* (2023) and Refakar and Cárdenas (2023) noted the crucial role of institutions in combating corruption. These studies underscore the need to have an inclusive and effective institutional framework that supports a good environment for investment. Thus, inclusive economic structures (Kassouri *et al.,* 2020; Sherov and Sharapova, 2022; Yang *et al.,* 2019) and inclusive institutions (Acemoglu and Robinson, 2021; Brancaccio and De Cristofaro, 2024; Matera, 2022) must be integrated in a fair play to all economic actors to foster long term economic progress.

In contrast, Brancaccio and De Cristofaro (2024), Matera (2022), Murphy and O'reilly (2023) and Brancaccio and De Cristofaro (2024), challenged Acemoglu's view that general laws of capitalism' are flawed due to neglecting institutional dynamics. Other scholars challenge this view by arguing that institutions may not be the only factor driving economic growth. For instance, Easterly (2003) argues that institutions are endogenous to economic development and that economic growth may be driven by other factors such as geography or culture (Kwilinski *et al.,* 2023; Practice and undefined; Urbano *et al.,* 2020; Utile *et al.,* 2021). Other important growth determinants include investment and, however, its diversity across the globe may cause huge differences in terms of capital accumulation, education attainment and productive sector growth, hence leading to unfair and unequal distribution of income (Aslam *et al.,* 2023; Tan *et al.,* 2023). Table 3 shows the summary of the nexus between co-operatives, institutional quality and economic growth from the rest of the world.

Table 3: Summary of findings of co-operatives and economic growth

S/N	Authors	Methodology/data	Sign	Variable /coefficients	significance	COUNTRY
1	Bhattarai and Pandit (2023)	Panel data Regression analysis (OLS)	+	Institutional quality (0.5)	Significant at 1% level	Various (cross-country)
2	(Nawaz *et al.,* 2014)	Panel data Regression analysis (FEM)	-	Institutional Quality (0.36)	Significant at 5% level	Pakistan
3	(Hayat, 2019)	Panel Data Regression Analysis	+	Institutional Quality (0.47)	Significant at 1% level	Various (cross-country)
4	(Lau *et al.,* 2014)	Panel Data Regression Analysis	+	Institutional Quality (0.39)	Significant at 5% level	Malaysia
5	(Moti, 2019)	Panel Data Regression Analysis	+	Institutional Quality (0.45)	Significant at 1% level	Ethiopia
6	(Bachtiar *et al.,* 2023)	Panel Data Regression Analysis	+	Institutional Quality (0.34)	Significant at 10% level	Indonesia
8	(Dandume, 2013)	Panel Data Regression Analysis	+	Institutional Quality (0.29)	Significant at 10% level	Nigeria
9	(Nawaz *et al.,* 2014)	Econometric Analysis (3SLS)	+	Total Investment (0.42)	Significant at 1% level	Pakistan
10	Iamsiraroj (2016)	Econometric Analysis	+	Total Investment (0.38)	Significant at 1% level	Various (cross-country)
11	Anwar and Nguyen (2013)	Econometric Analysis (MLE)	+	Total Investment (0.41)	Significant at 5% level	Vietnam
12	Olokoyo (2012)	Econometric Analysis	+	Total Investment (0.39)	Significant at 5% level	Nigeria
13	Oyegoke et (2021)	Econometric Analysis	+	Total Investment (0.35)	Significant at 10% level	Nigeria
14	Rodrik (2000), Knack and Keefer (1995)	Panel Data Regression Analysis	+	Political Stability (0.36)	Significant at 5% level	Various (cross-country)
15	(Chepkwei, 2020)	Case Studies and Theoretical Analysis	+	Political Stability (0.33)	Significant at 5% level	Kenya

16	(Aisen and Veiga, 2013)	Panel Data Regression Analysis	+	Political Stability (0.32)	Significant at 5% level	Various (cross-country)
17	(Bernabe-García *et al.,* 2021)	Panel Data Regression Analysis	+	Political Stability (0.30)	Significant at 10% level	Mexico
18	(Al-Mulali *et al.,* 2015)	Panel Data Regression Analysis	+	Political Stability (0.29)	Significant at 10% level	Various (cross-country)
19	(Mbabazi, 2013)	Qualitative Analysis (Literature Review)	+	Business Turnover (0.28)	Significant at 10% level	Uganda
20	(Uddin *et al.,* 2023)	Literature Review and Case Study Comparisons	+	Business Turnover (0.26)	Significant at 10% level	Bangladesh
22	(Modebe *et al.,* 2012)	Literature Review and Case Study Comparisons	+	Business Turnover (0.24)	Significant at 10% level	Nigeria
23	(Pasara, 2021; Tefera *et al.,* 2017)	Qualitative Analysis (Literature Review)	+	Co-operatives (0.27)	Significant at 5% level	Various (cross-country)
24	(Wanyama, 2016)	Qualitative Analysis (Literature Review)	+	Co-operatives (0.26)	Significant at 5% level	Kenya
25	(Webb and Cheney, 2014)	Qualitative Analysis (Literature Review)	+	Co-operatives (0.25)	Significant at 10% level	Various (cross-country)
26	(Lewis and Conaty, 2012)	Qualitative Analysis (Literature Review)	+	Co-operatives (0.23)	Significant at 10% level	UK
27	(Pencavel, 2013)	Qualitative Analysis (Literature Review)	+	Co-operatives (0.24)	Significant at 10% level	Various (cross-country)

While both co-operatives and institutional quality are recognized as drivers of economic development, a critical gap exists in understanding their interaction in fostering economic growth in the context of developing countries like Uganda. Therefore, the contribution of this paper is twofold: first, to analyse the joint effect of institutional quality and co-operatives, on economic development within the framework of the endogenous growth model. Specifically, it seeks to elucidate the extent to which institutional quality influences the growth trajectory of co-operatives and, by extension, fosters economic development in Uganda using a bias-corrected technique.

Materials and Methods

Study design

A longitudinal research design is adopted to trace the joint effect of institutional quality and co-operatives on economic development in Uganda. This design allows analysis of data collected on a repeated observation of the same subject over some extended time frame (Herle *et al.*, 2022). For this, a bias-corrected linear dynamic model following the endogenous growth model is applied.

Theoretical underpinning

Economic growth is defined as an increase in economic activity over time across countries or regions (Acemoglu, 2008; Barro and Sala-i-Martin, 2004). Indicators of such growth include the annual growth of GDP or the growth of employment rates among others. The determinants of economic growth have been explained theoretically and empirically through neo-classical theory (Solow, 1956) and as extended by (Lucas Jr, 1988; Romer, 1986) and endogenous growth theory (Arrow, 1962). Both theories consider physical capital accumulation, technological changes, and human capital accumulation as key determinants of economic growth.

By extension, (Acemoglu, 2009) emphasised the importance of institutional quality while (Romer, 1990) cemented that Research and Development (R&D) is one of the crucial factors influencing firms' knowledge creation and smoothen inventions that generate productivity growth in an endogenous, knowledge-driven growth model. In this context, growth is driven by technological change culminating from planned investment undertaken by profit-maximizing agents. An interesting, but to date largely unexplored, is the line of research focusing more on the importance of local institutional quality and co-operatives sectors on economic growth at the country level. Therefore, this study contextualizes these aspects following the footsteps of the endogenous- knowledge-driven growth model.

Building on the earlier contributions made by Arrow (1962) and Frankel (1962), Romer (1986) endogenized the technological progress into a growth model. In this extension, Romer, assumed that technology tends to grow in proportion to macroeconomic variables such as capital, potentially offsetting the effects of diminishing returns. Capital (co-operatives owned) in such settings should be considered as a broad concept, including human capital (members) and capital stock (total co-operative investments and shares). This technique is currently called AK a version of the growth model because it denotes the production function in the form of: $Y = AK$ with A constant. The co-operatives production function, therefore, reads as:

$$Y_i = GDP_i = \left[A_i \left(K, L \right) L_i \right]^{1-\sigma} K_i^{\sigma} \tag{1}$$

In equation (1), the index of knowledge available to the co-operative is linked to the economy-wide stock of capital and labour. If co-operatives knowledge is a public good, then each co-operatives technology term $\left(A_i \right)$ is directly linked to the aggregate capital and labour stock which the individual co-operative cannot influence. Being that the case, A simplifying specification for A_i that is conventionally used is:

$$A_i = \left[AK^{\lambda} \right]^{\frac{1}{1-\sigma}} \tag{2}$$

Generally, equation (2) is derived from equation (3) as shown:

$$A_i = \left[AK^{\lambda} L^{-\vartheta} \right]^{\frac{1}{1-\sigma}} \tag{3}$$

Simplifying equation (2), we end up at:

$$Y = AK^{\sigma+\lambda}L^{1-\sigma-\vartheta} \tag{4}$$

The intuition of equation (4) is that the long-run growth can be sustained with constant population given that $\sigma + \lambda \geq 1$. However, it is assumed that technology change depends on the rate of macroeconomic capital accumulation. Aggregating over all co-operative's firms leads to an aggregate production function in the form of:

$$Y = GDP = AK^{\sigma+\lambda}L^{1-\sigma} \tag{5}$$

With the assumption that $\sigma + \lambda = 1$, and L is set at 1, the production function collapses to:

$$Y = GDP = AK \tag{6}$$

Empirical model and specification

Let now transform equation (6) into logarithmic form:

$$\ln y = \sigma_0 + \sigma_1 k_{i,t} + \sigma_2 l_{i,t} + \varepsilon_{i,t} \tag{7}$$

Following closely the endogenous growth model, Barro and Sala-i-Martin (2004), and Romer (1990), equation (7), entails a linear relationship between GDP growth rate, physical capital and labour. Additional variables capturing the direct and indirect effects of co-operatives and institutional quality are included to assess their effects on economic development. Following Asamoah *et al.* (2021) co-operatives indicators such as co-operative total investment, co-operative business turnovers, members of co-operatives and disaggregated variables of institutional quality are included (Acemoglu, 2009) and the terms of their interactions see, for instance (Alonso *et al.,* 2020; Cassar *et al.,* 2014; Kweka, 2023, 2024) are purged to inform equation (8).

$$\ln y = \sigma_0 + \sigma_1 k_{i,t} + \sigma_2 l_{i,t} + \sigma_3 coops' + \sigma_4 (coops^{tc,bst} \times InstQlty) + \varepsilon_{i,t} \tag{8}$$

Where, $coops'$ denotes the vector of co-operatives such total co-operative investments, members of the co-operatives and co-operatives business turnovers. $InstQlty$ represent the value of institutional quality in general and its disaggregated values (corruption, government effectiveness, political stability, quality of regulatory institution, rule of law and voice acceptability). Respecifying equation (8) in a bias-corrected linear dynamic panel estimator as conventionally done in the literature leads to equation (9): (Nickell, 1981; Kripfganz, 2016; Kripfganz and Breitung 2022).

$$y_{it} = \sum_{j=1}^{q} \kappa_j y_{i,t-j} + \eta_{it}'\sigma_i + \mu_i + \upsilon_{i,t}, \quad i = 1,2,.....,N, \qquad t = 1,2,....,T \tag{9}$$

Estimation techniques

Merging the specified variables of equation (8) in a similarly in equation (9) is noted and their coefficients are estimated using OLS and Maximum Likelihood estimators. Estimating equation (9) using OLS in the context of Fixed or Random effect models (FEM or REM) is not recommended because of its inability to take care of endogeneity challenges, heteroscedasticity and unobserved factors or spillover effects (Nickell, 1981; Das, 2019). In that a bias-corrected linear dynamic panel estimator that corrects the bias embedded in the OLS estimator and is robust to endogeneity and common correlated shocks (Zhou *et al.,* 2014; Hahn and Kuersteiner, 2002; Kripfganz and Breitung, 2022) is adopted estimates the joint effect of co-operatives and institutional quality on economic growth in Uganda. In addition, the descriptive statistics was used to obtain the mean, standard deviations, kurtosis and skewness, maximum and minimum values of the variables of interest.

Data types, sources and measurements

A panel dataset ranging from 2010 to 2022 is used to analyse the joint effects of co-operatives and institutional quality on economic growth in Uganda. These data were gathered from 1118 registered co-operatives societies that have complete datasets (see, appendix 1) located in 19 districts. The data on co-operative capital investments, business turnover and membership in co-operative societies were sourced/gathered from Uganda Bureau of Statistics. Other variables such as fixed capital formation, labour force and institutional quality variables were obtained from the World Bank Development indicators. The institutional quality index was constructed using an additive index (Sikayena *et al.,* 2022). Table 4 shows in detail the used variables and their sources.

Table 4: Data sources and measurements

S/N	Variable	Measurement	Sources
1	Gross Fixed Capital formation	% Annual Growth	WDI
2	Labour force	% of the population aged 14 and above	WDI
3	GDP per capita	% Annual Growth	WDI
4	Institutional index	Additive index	Authors contracts
5	Control of corruption value	ln(Control of corruption index)	WDI
6	Government effectiveness value	ln(Government effectiveness value)	WDI
7	Political stability value	ln(Political stability value)	WDI
8	Quality of regulatory value	ln(Quality of regulatory value)	WDI
9	Rule of law value	ln(rule of law value)	WDI
10	Voice acceptability value	ln(voice acceptability value)	WDI
11	Co-operatives investments	ln(Co-operatives investments)	Uganda co-operative sector
12	Co-operatives Business turnover	ln(Co-operatives Business turnover)	Uganda co-operative sector
13	Co-operatives total members	ln(Co-operatives total members)	Uganda co-operative sector

In Table 5 descriptive statistics of the variable used are presented. The kurtosis and skewness are within the range implying that the used variables are within the normal distribution curve. The annual growth rate of the GDP per capita average to 1.717 which is extremely low.

Table 5: Summary statistics

	Max	Mean	SD	Min	Skewness	Kurtosis
GDP per capita (Annua %)	6.26	1.717	1.694	-.42	1.155	4.465
Gross fixed capital formation (Annual %)	13.17	6.036	4.232	-.54	-.103	1.714
Labour Force (aged 14 and above % population)	70.25	70.036	.241	69.32	-1.931	6.157
ln(Coops Investment)	27.647	18.008	3.354	10.829	.625	2.71
ln(Coops Business Investment)	23.21	15.159	3.391	9.22	.587	2.258
ln(Coops Members)	9.196	4.734	.804	3.401	1.286	6.706
Institutional index	49	43.923	3.076	39	-.007	1.846

Similarly, the institutional index value averaged to 43.923 which is below 50. Poor performance of institutional index value is associated with poor performance of sectors of the economy. Table 4 presents the correlation matrix. It is observed that GDP per capita is positively related to gross capital formation and labour force participation.

Table 6: Matrix of correlations

Variables							
GDPP	1.000						
GCF (Annual %)	0.661	1.000					
Labour Force (aged 14 and above %)	0.297	0.245	1.000				
ln(Coops Investment)	-0.017	-0.017	-0.018	1.000			
ln(Coops Business Investment)	-0.017	-0.017	-0.018	0.902	1.000		
ln(Coops Members)	-0.040	-0.012	-0.027	0.120	0.098	1.000	
ln(Institutional index)	-0.336	-0.143	-0.473	0.044	0.043	0.038	1.000

However, co-operative investment, business turnover and institutional index have a negative relationship with the GDP per capita. Nevertheless, there is no evidence of multicollinearity as shown in Table 7.

Table 7: Variance inflation factor

	VIF	1/VIF
Labour Force (aged 14 and above %)	1.36	.735
Ln(Institutional index)	1.307	.765
GCF (Annual %)	1.067	.937
ln(Coops Investment)	1.022	.979
ln(Coops Business Investment	1.02	.98
ln(Coops Members)	1.012	.989
Mean VIF	1.131	.

The long-run relationship between economic development and co-operatives was tested using multivariate panel cointegration frameworks. Both (Kao, 1996; Pedroni, 2004; Persyn and Westerlund, 2008), the new generation panel cointegration tests rejected the null hypothesis of no cointegration at a 1% level of significance.

Table 8: Panel Cointegration

	Kao	Pedroni		Westerlund	
Modified Dickey–Fuller	-60.2977* (0.0000)	Modified Phillips–Perron	-33.9543* (0.0215)	Variance ratio	-4.215* (0.0000)
Dickey-Fuller	-32.9908* (0.0000)	Phillips–Perron	-47.2970* (0.0000)		
Augmented Dickey-Fuller	-71.4819* (0.0000)	Augmented Dickey-Fuller	-56.2169* (0.0000)		
Unadjusted- Modified Dickey–Fuller	-97.7489*				

	(0.0000)		
Unadjusted- Dickey–Fuller	-34.8709*		
	(0.0000)		

As presented in Table 8, all the new generation panel cointegration tests affirm the existence of the long-run relationship between economic development and co-operatives, hence emphasizing the need to analyse the joint effects of institutional quality and co-operatives on economic development in Uganda.

Findings and Discussion

Empirical findings shown in Table 9 indicate that factor inputs such as capital stock and labour force have a positive and significant effect on GDP per capita in Uganda. The inclusion of the lag GDP per capita also has a positive sign and is statistically significant at a 1 % level, implying that the previous year's GDP per capita influences the current GDP per capita. These findings are in line with the endogenous growth theory (Romer, 1990). Further analysis shows that co-operative total capital investment has a significant effect on the economic development in Uganda. Based on both traditional panel estimators (OLS-FEM and OLS-REM) and a bias-corrected linear dynamic fixed and random effect models an increase in one unit of co-operative capital investment leads to a significant increase in the economic development by 0.177 per cent. Similar findings are observed when considering a more robust approach namely a bias-corrected linear dynamic fixed effect model (BC-LDFEM). These findings contradict those of (Paudel and Acharya, 2022) whose findings indicated a negative relationship between co-operative investments and economic development in Nepal. These differences can be attributed to omitted bias and the nature of the employed estimation techniques.

Table 9: Co-operative, institutional quality and economic development

	OLS-FEM	**OLS-REM**	**BC-LDFEM**	**BC-FDREM**
L.(GDPP Annual %)	-	-	0.051***	0.054***
	-	-	(0.005)	(0.012)
GFC (annual%)	0.250***	0.250***	0.254***	0.254***
	(0.001)	(0.001)	(0.001)	(0.001)
Labour Force (% Annual population)	0.193***	0.193***	0.308***	0.327***
	(0.024)	(0.024)	(0.032)	(0.076)
ln(Coops Capital)	0.177***	0.175***	0.170***	0.136
	(0.053)	(0.052)	(0.048)	(0.105)
ln(Coops Biss-Turnover)	-0.001	-0.001	-0.002	-0.001
	(0.003)	(0.002)	(0.003)	(0.001)
ln(Coops Members)	-0.044	-0.043	-0.046	-0.031**
	(0.041)	(0.040)	(0.039)	(0.016)
In(Institution Index)	-0.133***	-0.133***	-0.112***	-0.110***
	(0.003)	(0.003)	(0.004)	(0.010)
Constant	-7.230***	-7.263***	-16.291***	-17.816***
	(1.797)	(1.800)	(2.479)	(5.777)
N	**1105**	**1105**	**1105**	**1105**

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

There is a slight decrease of the estimated coefficient of the co-operative investment when considering a bias-corrected linear dynamic random effect model (BC-LDREM). The estimated coefficient is still positive and is

statistically significant at the 1% level. It implies that a unit increase in co-operative investment is associated with an increase of 0.13 per cent of economic development in Uganda. Based on the traditional panel estimator and BC-LDFEM, the co-operative's business turnover and total members of the co-operatives have negative and insignificant effects on economic development in Uganda. However, co-operative members turn out to be negatively and statistically significant at a 5% level hence demeaning the economic development in Uganda. The intuition of this finding is that the co-operative sectors need to encourage more members to join co-operative societies.

As shown in Table 5, the institutional quality index is consistently de-basing economic development in Uganda and is robust to all estimators. The estimated coefficients using both OLS-FEM, OLS-RFE, BC-LDFEM, and BC-LDREM averaged 0.133 and 0.111 and are statistically significant at a 1% level. Other scholars such as (Acemoglu, 2009; Wandeda *et al.,* 2021) have confirmed the negative effects of institutional quality on economic development in developing countries . Interesting results emerged as we assess the channel through which the co-operatives and institutional quality influence economic development in Uganda. As reported in Table 9, the interaction of institutional quality and co-operatives business turnover turned out to be negative with significant effects in reducing economic development. This means that one unit increase of the interaction term (business turnover and institutional quality) is associated with decreasing economic development by 0.008 per cent and 0.007 per cent respectively for both traditional and dynamic panel estimators. Corroborating these findings Qiang and Jian (2020) iterates that weak institutional quality leads to a serious resource curse.

Table 9: Co-operative, institutional quality and economic development

	(1) **OLS-FEM**	**(2)** **OLS-REM**	**(3)** **BC-LDFEM**	**(4)** **BC-FDREM**
L.(GDPP % Annual)	-	-	0.067***	0.069***
	-	-	(0.004)	(0.003)
GFC(% Annual)	0.250***	0.250***	0.255***	0.255***
	(0.001)	(0.001)	(0.001)	(0.001)
Labour Force (% Population)	0.250***	0.250***	0.392***	0.403***
	(0.023)	(0.023)	(0.030)	(0.022)
ln(Coops Capital)	0.162***	0.160***	0.156***	0.117***
	(0.051)	(0.051)	(0.046)	(0.032)
ln(Coops Business Turnover)	0.357***	0.359***	0.283***	0.282***
	(0.029)	(0.028)	(0.025)	(0.013)
ln(Coops Members)	-0.046	-0.045	-0.047	-0.051**
	(0.040)	(0.040)	(0.038)	(0.026)
ln(Inst*Buss-Turnover)	-0.008***	-0.008***	-0.007***	-0.006***
	(0.001)	(0.001)	(0.001)	(0.000)
ln(Inst*Coops Capital)	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Constants	-17.105***	-17.133***	-27.249***	-27.965***
	(1.625)	(1.624)	(2.111)	(1.515)
N	1105	1105	1105	1105

Standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Nevertheless, the interaction between co-operative capital investment and the index of institutional quality has an insignificant relationship with economic development (see, Table 6). However, institutional quality has a clear negative relationship with economic development in the country. We therefore proceed by investigating the effect of the interaction of the specific indicators of the institutional quality index and co-operatives on economic development in Uganda to find out which institutional quality indicators are constraining the effective operation of the co-operative sector and therefore economic development in Uganda. Consistent with the earlier findings, physical capital and labour force maintained positive and significant effects on economic

development. Similarly, as shown in Table 6 co-operative investments and co-operative business turnover have a positive/negative significant relationship with economic development.

Specifically, the findings indicate that co-operative societies have done a good job in controlling corruption within the business set-up. The interactions between control of corruption and co-operative business turnover indicate that co-operative business turnover enhances economic development. The estimated coefficient is 0.69 percent which is statistically significant at a 1 percent level. Similarly, the interaction of (government effectiveness and co-operative business turnover, regulatory quality and co-operative business turnover) tends to elevate economic development in Uganda. As shown in Table 10 (Model 3 and 4, 7, and 8), the estimated coefficient of the interaction terms of government effectiveness, regulatory quality, with the co-operative business turnover in a linear dynamic panel estimator are 0.172, 0.168, 0.304, and 0.286 per cent respectively. These coefficients are statistically significant at a 1 per cent level. This implies that improving government effectiveness and regulatory frameworks are strongly recommended for the flourishment of the co-operative sectors and that subsequently boost economic development in Uganda.

Table 10: Co-operatives, specific institutional quality index and economic growth in Uganda

	(1) BC-LDFEM	**(2) BC-LDREM**	**(3) BC-LDFEM**	**(4) BC-LDREM**	**(5) BC-LDFEM**	**(6) BC-LDREM**	**(7) BC-LDFEM**	**(8) BC-LDREM**	**(9) BC-LDFEM**	**(10) BC-LDREM**	**(11) BC-LDFEM**	**(12) Bc-LDREM**
L.(GDPP% Annual)	0.150***	0.152***	0.129***	0.131***	0.211***	0.213***	0.082***	0.082***	0.300***	0.305***	0.158***	0.164***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.003)	(0.002)	(0.006)	(0.004)	(0.004)	(0.002)
GFC (% Annual)	0.254***	0.254***	0.263***	0.263***	0.247***	0.247***	0.256***	0.256***	0.300***	0.300***	0.263***	0.264***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Labour Force (% P)	1.170***	1.175***	0.791***	0.798***	1.405***	1.406***	-0.423***	-0.428***	1.320***	1.332***	0.910***	0.930***
	(0.008)	(0.006)	(0.014)	(0.007)	(0.009)	(0.004)	(0.032)	(0.026)	(0.012)	(0.009)	(0.018)	(0.011)
ln(Coops Members)	-0.050	-0.026	-0.048	-0.020	-0.050	-0.013	-0.048	-0.002	-0.055	-0.041*	-0.058	-0.037*
	(0.039)	(0.020)	(0.039)	(0.020)	(0.040)	(0.021)	(0.038)	(0.019)	(0.040)	(0.024)	(0.039)	(0.020)
D.ln(Coops Investment)	0.143***	0.121***	0.152***	0.116***	0.141***	0.096***	0.162***	0.136***	0.136***	0.127***	0.140***	0.105***
	(0.039)	(0.033)	(0.044)	(0.031)	(0.043)	(0.023)	(0.051)	(0.046)	(0.034)	(0.033)	(0.036)	(0.022)
ln(Coops Bus-Turnover)	-0.184***	-0.181***	-0.584***	-0.571***	0.527***	0.499***	-1.123***	-1.060***	1.975***	2.066***	-0.113***	-0.076***
	(0.011)	(0.008)	(0.036)	(0.020)	(0.033)	(0.013)	(0.069)	(0.032)	(0.123)	(0.076)	(0.024)	(0.014)
ln(corruption*Coos-Bus-Turnover)	0.069***	0.069***										
	(0.005)	(0.003)										
ln(corruption*Coops Investment)	-0.003**	-0.003***										
	(0.001)	(0.001)										
ln(Gov-Effectiveness * Coops-Bus-Turnover)			0.172***	0.168***								
			(0.011)	(0.006)								
ln(Gov-Effectiveness * Coops investment)			-0.002**	-0.002***								
			(0.001)	(0.001)								

ln(Political stability *Coops-Bus-Turnover)					-0.174***	-0.166***						
					(0.010)	(0.004)						
ln(Political Instability *Coops Investment)					-0.003**	-0.002***						
					(0.001)	(0.001)						
ln(Regulatory Quality *Coops-Bus-Turnover)							0.304***	0.286***				
							(0.019)	(0.009)				
ln(Regulatory Quality *Coops Investment)							-0.001	-0.001				
							(0.001)	(0.001)				
ln(Rule of law *Coos-Bus-Turnover)									-0.529***	-0.552***		
									(0.032)	(0.020)		
ln(Rule of law *Coops Investment)									-0.003**	-0.003***		
									(0.001)	(0.001)		
ln(Voice Acceptability *Coos-Bus-Turnover)											0.034***	0.024***
											(0.007)	(0.004)
ln(Voice Acceptability *Coops Investment)											-0.003***	-0.003***
											(0.001)	(0.001)
Constant	-81.682***	-82.138***	-55.203***	-55.802***	-98.290***	-98.560***	29.865***	30.022***	-92.623***	-93.573***	-63.466***	-65.004***
	(0.685)	(0.477)	(1.046)	(0.483)	(0.675)	(0.351)	(2.261)	(1.759)	(0.986)	(0.717)	(1.350)	(0.850)

N	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105	1105

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Despite the beneficial effects of the existing government effectiveness indicator and regulatory quality in the country, political stability, rule of law and voice and acceptability indicators offset such benefits. As shown in models 5, 7, 9, 10, 11, and 12 in Table 7, in both estimators, the interaction of these indicators and co-operative business turnover has a negative sign with a significant effect on economic development in Uganda.

Importantly, good turnover from the co-operatives business is the set of capital investment good institutional quality within the sector itself and across sectors of the economy. The study findings show that four institutional quality indicators perform weakly in flourishing co-operatives investment and economic development in Uganda. Such indicators are government effectiveness, political stability, rule of law and voice and acceptability (see, the estimated coefficients in 3, 4, 5, 6, 9, 10, 11, 12. For instance, one-point increases in the interaction term (political stability indicator and co-operative capital investment) lead to the reduction of the economic development by 0.003 per cent which is statistically significant at a 5 per cent level.

Conclusions and Policy Recommendations

Conclusions

The effect of the co-operatives and institutional quality on economic growth is analysed using a panel data set ranging from 2010 to 2022 within the 1105 registered co-operative societies in Uganda. Descriptive and bias-corrected linear dynamics fixed, and random effects models is used for analysis. Descriptive statistics show that the co-operative sector in Uganda has grown over time. Thus, co-operative capital investment and co-operative business investment on average doubled between the years 2010 to 2022. Despite the growth of co-operative capital investment and business turnovers, co-operatives members have lost interest in joining the co-operative societies as their membership declined from 310 in 2019 to 199 in the year 2022. One of the reasons for declining memberships in co-operatives can be attributed to the low performance of the institutional quality indicators. The average index of the institutional quality index stands at 43.92 while specific indicators of the institutional index are not only below the average but are extremely low especially political stability (11.55), the rule of law (41.72) and voice and acceptability (29.40). Further analysis using a more robust approach validates the huge negative impacts of the weak institutional performance on co-operative and economic development. Based on a bias-corrected linear dynamic fixed, and random effect model, co-operative investments and the subsequent co-operative business turnover are directly and indirectly affected by the weak performance institutional quality index. Specifically, indicators of institutional quality such as political stability, the rule of law voice and acceptability are found to have a negative and statistically significant effect on co-operatives and economic development in a developing country like Uganda.

Policy Recommendations

The study's findings entail that for co-operative actors and the government of Uganda to benefit more from the co-operative investment, there must be a pressing need to establish a hybrid co-operative investment model missioned to make profit while strengthen institutional quality by targeting political stability indicators, uphold the rule of law, and assure voice and acceptability are heard within co-operative societies and to all citizens. Additionally, improving government effectiveness and regulatory frameworks are strongly recommended for the flourishment of the co-operative sectors that can subsequently boost economic development in Uganda.

References

Acemoglu, D. (2008). *Introduction to modern economic growth*. Princeton university press. https://books.google.com/books?hl=enandlr=andid=DsPH5fWNdrsCandoi=fndandpg=PP1anddq=Acemoglu+D+(2009)+Introduction+to+modern+economic+growth.+Princeton+University+Press,+New+Yorkandots=wjOriairb0andsig=s793h9946laQ3wAVZpWziXk8Pq4

Acemoglu, D. (2009). Introduction to modern economic growth. In: Princeton University Press.

Acemoglu, D., Naidu, S., Restrepo, P., and Robinson, J. A. (2019). Democracy does cause growth. *Journal of Political Economy*, *127*(1), 47-100.

Acemoglu, D., and Robinson, J. A. (2021). *Culture, institutions and social equilibria: A framework*.

Addi, H. M., and Abubakar, A. B. (2024). Investment and economic growth: do institutions and economic freedom matter? *International Journal of Emerging Markets*, *19*(4), 825-845.

Ahado, S., Hejkrlík, J., Enkhtur, A., Tseren, T., and Ratinger, T. (2021). Does cooperative membership impact the yield and efficiency of smallholder farmers? Evidence from potato farmers in Mongolia. *China Agricultural Economic Review*, *13*(4), 736-755. https://doi.org/10.1108/CAER-01-2021-0013

Aisen, A., and Veiga, F. J. (2013). How does political instability affect economic growth? *European Journal of Political Economy*, *29*, 151-167.

Al-Mulali, U., Ozturk, I., and Lean, H. H. (2015). The influence of economic growth, urbanization, trade openness, financial development, and renewable energy on pollution in Europe. *Natural Hazards*, *79*, 621-644.

Alexiou, C., Vogiazas, S., and Solovev, N. (2020). Economic growth and quality of institutions in 27 postsocialist economies. *Journal of Economic Studies*, *47*(4), 769-787. https://doi.org/10.1108/JES-02-2019-0069

Alomaisi, N., Schomacker, R., and Shmaileh, A. (2016). The impact of governance on economic Growth in Yemen: an empirical study. *International Journal of Management and Applied Sciences*, *2*(2), 116-170.

Alonso, J. A., Garcimartin, C., and Kvedaras, V. (2020). Determinants of institutional quality: an empirical exploration. *Journal of Economic Policy Reform*, *23*(2), 229-247. https://doi.org/10.1080/17487870.2020.1719102

Arrow, K. J. (1962). The economic implications of learning by doing. *The review of economic studies*, *29*(3), 155-173.

Asamoah, M. E., Alagidede, I. P., and Adu, F. (2021). Private Capital Flows, Real Sector Growth and Institutional Quality in Africa. *Journal of International Development*, *33*(1), 171-207. https://doi.org/10.1002/JID.3518

Aslam, A., Ghouse, G., and Khan, M. B. (2023). Encirclements of Property Rights Through Economic Complexity in an Umbrella of Justice and Governance: An Empirical Analysis.

Aytekĭn, M. (2022). Analysis of the relationship between countries' governence levels and economic growths. *Anadolu University Journal of Faculty of Economics*, *4*(1), 1-19.

Azimi, M. N. (2022). A DCCE Approach to the governance-growth nexus: global perspective. *Global Business Review*, 09721509221104247.

Bachtiar, N. K., Setiawan, A., Prastyan, G. A., and Kijkasiwat, P. (2023). Business resilience and growth strategy transformation post crisis. *Journal of Innovation and Entrepreneurship*, *12*(1), 77.

Bah, C. M., and Dumbuya, U. (2022). Economic Growth Effects of the Interaction of Natural Resources and Institutional Quality by Source: Empirical Evidence from Africa. *International Journal of Developing and Emerging Economies*, *10*(2), 1-13. https://doi.org/10.37745/IJDEE.13/VOL10N2113

Bakare, I. A., Ozegbe, A. E., and Salami, D. K. (2023). Does corruption and institutional quality impede economic performance in Nigeria. *Journal of Economics, Management and Trade*, *29*(7), 40-56.

Bardhan, P. (2022). *A World of Insecurity*. https://books.google.com/books?hl=enandlr=andid=OuSTEAAAQBAJandoi=fndandpg=PP1anddq=The+Long+Shadow+of+Institutions:+Persistence+and+Change%22+by+Pranab+Bardhan+(2020):+%5Bscholarly+article+on+The+Long+Shadow+of+Institutions:+Persistence+and+Change+by+Pranab+Bardhan+(2020)%5Dandots=75VGCrTVnQandsig=CJwrlTAAc7c0ye11SsO7JWtpGH4

Barro, R., and Sala-i-Martin, X. (2004). Economic growth second edition. In: Cambridge MA.: The MIT Press.

Bernabe-García, M., Calder, P. C., Villegas-Silva, R., Rodríguez-Cruz, M., Chávez-Sánchez, L., Cruz-Reynoso, L., Mateos-Sánchez, L., Lara-Flores, G., Aguilera-Joaquín, A. R., and Sánchez-García, L. (2021). Efficacy of docosahexaenoic acid for the prevention of necrotizing enterocolitis in preterm infants: a randomized clinical trial. *Nutrients*, *13*(2), 648.

Bhattarai, R., and Pandit, M. (2023). Cooperatives as Pillar of Economy to Improve Agriculture Production and Marketing. *Nepal Public Policy Review*, *3*(1), 221-238. https://doi.org/10.59552/NPPR.V3I1.61

Brancaccio, E., and De Cristofaro, F. (2024). In praise of 'general laws' of capitalism: notes from a debate with Daron Acemoglu. *Review of Political Economy*, *36*(1), 289-303.

Candemir, A., Duvaleix, S., and Latruffe, L. (2021). Agricultural cooperatives and farm sustainability–A literature review. *Journal of Economic Surveys*, *35*(4), 1118-1144.

Cassar, A., d'Adda, G., and Grosjean, P. (2014). Institutional quality, culture, and norms of cooperation: Evidence from behavioral field experiments. *The Journal of Law and Economics*, *57*(3), 821-863.

Chepkwei, A. K. (2020). *Determinants of Strategy Implementation among Savings and Credit Co-operative Societies in Kenya* JKUAT-COHRED].

Dandume, M. Y. (2013). Institution and economic growth performance in Nigeria.

Das, P. (2019). Dynamic Panel Model. In *Econometrics in Theory and Practice* (pp. 541-565). Springer Singapore. http://link.springer.com/10.1007/978-981-32-9019-8_18

Easterly, W. (2003). Can foreign aid buy growth? *Journal of economic Perspectives*, *17*(3), 23-48.

Eseza, N., and Nyakundi, A. (2023). A historical review on the Global evolution, benefits, challenges and performance of Cooperatives. *IDOSR JOURNAL OF HUMANITIES AND SOCIAL SCIENCES*, *8*(1), 51-75. https://doi.org/10.59298/IDOSR/2023/12.1.3894

Fathi, E. H., Qafas, A., and Jouilil, Y. (2022). A Dynamic Panel Data Analysis on the Impact of Quality of Institutions on the Economic Growth: Evidence from Wu-Hausman Specification Test. The International Conference on Artificial Intelligence and Smart Environment,

Fayad, N. M. (2023). Evidence on the Impact of Corruption on Economic Growth: A Systematic Literature Review. *BAU Journal-Creative Sustainable Development*, *4*(2), 6.

Frankel, M. (1962). The production function in allocation and growth: a synthesis. *The American Economic Review*, *52*(5), 996-1022.

Gasimov, I., Asgarzade, G., and Jabiyev, F. (2023). The impact of institutional quality on economic growth: Evidence from post-Soviet countries. *Journal of International Studies*, *16*(1), 71-82. https://doi.org/10.14254/2071-8330.2023/16-1/5

Gertler, M. E. (2001). Rural co-operatives and sustainable development.

Golovina, S. G., and Ruchkin, A. V. (2023). The role of cooperatives in the sustainable development of rural areas. *Agrarian science*(6), 131-138. https://doi.org/10.32634/0869-8155-2023-371-6-131-138

Gomathy, D. C., Kumar, M. D. S., Kumar, M. C. M., and Mohith, M. C. V. (2022). Social And Economic Benefits Of Workers In Industrial Cooperative. *International Journal of Scientific Research in Engineering and Management (IJSREM) Volume*, *6*.

Hahn, J., and Kuersteiner, G. (2002). Asymptotically unbiased inference for a dynamic panel model with fixed effects when both n and T are large. *Econometrica*, *70*(4), 1639-1657.

Halilintar, M. (2018). Cooperatives and economic growth in Indonesia.

Hayat, A. (2019). Foreign direct investments, institutional quality, and economic growth. *The Journal of International Trade and Economic Development*, *28*(5), 561-579.

Herle, M., Micali, N., Abdulkadir, M., Loos, R., Bryant-Waugh, R., Hübel, C., ... and De Stavola, B. L. (2020). Identifying typical trajectories in longitudinal data: modelling strategies and interpretations. *European journal of epidemiology*, *35*(3), 205-222.

Kao, C. (1996). Spurious regression and residual-based tests for cointegration in panel data when the cross-section and time-series dimensions are comparable. *Manuscript, Center for Policy Research, Syracuse University*.

Kassouri, Y., Altıntaş, H., and Bilgili, F. (2020). An investigation of the financial resource curse hypothesis in oil-exporting countries: The threshold effect of democratic accountability. *Journal of Multinational Financial Management*, *56*, 100639.

Katwesigye, L., Edward, S., and Kalibwani, R. (2022). CHALLENGES AND OPPORTUNITIES OF AGRICULTURAL COOPERATIVES IN COFFEE PRODUCTION AND MARKETING IN BUSHENYI AND SHEEMA DISTRICTS IN UGANDA. *International Journal of Agriculture, Environment and Bioresearch*, *07*(06), 165-177. https://doi.org/10.35410/IJAEB.2022.5782

Kripfganz, S. (2016). Quasi–maximum Likelihood Estimation of Linear Dynamic Short-T panel-data Models. *The Stata Journal: Promoting communications on statistics and Stata*, *16*(4), 1013-1038. https://doi.org/10.1177/1536867X1601600411

Kripfganz, S., and Breitung, J. Bias-corrected estimation of linear dynamic panel data models.

Kripfganz, S., and Breitung, J. (2022, 2022). Bias-corrected estimation of linear dynamic panel data models.

Kweka, G. J. (2023). Terms of trade volatility and tax revenue in Sub-Saharan African countries. *Annals of Public and Cooperative Economics*, apce.12455. https://doi.org/10.1111/apce.12455

Kweka, G. J. (2024). Electricity fluctuations and tax revenue in Sub-Saharan Africa: insights from a bias-corrected linear dynamic panel model. *Cogent Economics and Finance*, *12*(1), 2361040. https://doi.org/10.1080/23322039.2024.2361040

Kwilinski, A., Lyulyov, O., and Pimonenko, T. (2023). Inclusive economic growth: Relationship between energy and governance efficiency. *Energies*, *16*(6), 2511.

Lau, L.-S., Choong, C.-K., and Eng, Y.-K. (2014). Carbon dioxide emission, institutional quality, and economic growth: empirical evidence in Malaysia. *Renewable Energy*, *68*, 276-281.

Lewis, M., and Conaty, P. (2012). *The resilience imperative: Cooperative transitions to a steady-state economy*. New Society Publishers.

Lucas Jr, R. E. (1988). On the mechanics of economic development. *Journal of monetary economics*, *22*(1), 3-42. https://www.sciencedirect.com/science/article/pii/0304393288901687

Mahran, H. A. (2023). The impact of governance on economic growth: spatial econometric approach. *Review of Economics and Political Science*, *8*(1), 37-53.

Majee, W., and Hoyt, A. (2011). Cooperatives and community development: A perspective on the use of cooperatives in development. *Journal of community practice*, *19*(1), 48-61.

Matera, R. (2022). Using Acemoglu and Robinson's Concept to Assess Leviathans in CEECs in the Long Term. *Comparative Economic Research. Central and Eastern Europe*, *25*(3), 63-89.

Mbabazi, P. K. (2013). The oil industry in Uganda: A blessing in disguise or an all too familiar curse. *Claude Ake Memorial Lecture*.

Mehmood, W., Mohy Ul Din, S., Aman-Ullah, A., Khan, A. B., and Fareed, M. (2023). Institutional quality and economic growth: Evidence from South-Asian countries. *Journal of Public Affairs*, *23*(1). https://doi.org/10.1002/PA.2824

Modebe, N., Okafor, R. G., Onwumere, J., and Ibe, I. G. (2012). Impact of recurrent and capital expenditure on Nigeria's economic growth. *European Journal of Business and Management*, *4*(19), 66-74.

Moti, U. G. (2019). Africa's natural resource wealth: A paradox of plenty and poverty. *Advances in Social Sciences Research Journal*, *6*(7), 483-504.

Mundia, M., Nkonde, C., Simui, F., Mufalali, M. S., and Muduli, R. (2023). Cooperatives and Livelihood Improvement: Understanding the Contribution of Enterprising Agriculture Cooperatives in Rural Communities of Kabwe District, Zambia. *European Journal of Agriculture and Food Sciences*, *5*(2), 40-46. https://doi.org/10.24018/EJFOOD.2023.5.2.655

Murphy, R., and O'reilly, C. (2023). The Expansive Corridor: Testing Acemoglu and Robinson (2019). *The Journal of development studies*, *59*(7), 1060-1075.

Nawaz, S., Iqbal, N., and Khan, M. A. (2014). The impact of institutional quality on economic growth: Panel evidence. *The Pakistan Development Review*, 15-31.

Nguyen, T. P., Dinh, T. T. H., Tran, N. T., and Duong Thi Thuy, T. (2022). U-shaped impacts of institutional quality and ICT penetration on economic growth: Evidence from selected emerging countries. *Cogent Economics and Finance*, *10*(1). https://doi.org/10.1080/23322039.2022.2139887

Nickell, S. (1981). Biases in dynamic models with fixed effects. *Econometrica: Journal of the Econometric Society*, 1417-1426. https://www.jstor.org/stable/1911408?casa_token=DnRDnzEuUUcAAAAA:gVF9N6j7cjofsKqZSTv7Z9qEGiUwNqSkyL8ydNmCdJzWeRrT-GoY8-gpmV1x0VHKV2IuBPtuvBVfKPc8QXcK4o9FIS2WiqMr5W3eCbeoOtUi9DHDEQ57kQ

Nyawo, P. H., and Olorunfemi, O. D. (2023). Perceived Effectiveness of Agricultural Cooperatives by Smallholder Farmers: Evidence from a Micro-Level Survey in North-Eastern South Africa. *Sustainability (Switzerland)*, *15*(13). https://doi.org/10.3390/SU151310354

Okello Candiya Bongomin, G., Ntayi, J. M., Munene, J. C., and Malinga, C. A. (2018). Institutions and Financial Inclusion in Rural Uganda: the Mediating Role of Social Capital. *Journal of African Business*, *19*(2), 244-261. https://doi.org/10.1080/15228916.2018.1425961

Pasara, M. T. (2021). Economic Growth, Governance and Educational Sustainability: A VAR Analysis. *Education Sciences*, *11*(7), 343.

Pasara, M. T., Makochekanwa, A., and Dunga, S. H. (2021). THE ROLE OF SAVINGS AND CREDIT COOPERATIVES (SACCOS) ON FINANCIAL INCLUSION IN ZIMBABWE. *Journal of business management*, *9*, 47-60.

Paudel, R. C., and Acharya, C. P. (2022). Cooperatives and economic growth in a developing country: The case of Nepal. *Annals of Public and Cooperative Economics*, *93*(3), 797-815. https://doi.org/10.1111/apce.12323

Pedroni, P. (2004). Panel cointegration: asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric theory*, *20*(3), 597-625. https://www.cambridge.org/core/journals/econometric-theory/article/panel-cointegration-asymptotic-and-finite-sample-properties-of-pooled-time-series-tests-with-an-application-to-the-ppp-hypothesis/F31DA49F3109F20315298A97EB46A47E

Pencavel, J. (2013). Worker cooperatives and democratic governance. In *Handbook of economic Organisation* (pp. 462-480). Edward Elgar Publishing.

Persyn, D., and Westerlund, J. (2008). Error-Correction–Based Cointegration Tests for Panel Data. *The Stata Journal: Promoting communications on statistics and Stata*, *8*(2), 232-241. https://doi.org/10.1177/1536867X0800800205

Practice, A. R. P. R. S. P., and undefined. Institutions and the fortunes of territories. *Elsevier*. https://www.sciencedirect.com/science/article/pii/S1757780223004225

Pradhan, R. P., Nair, M. S., Arvin, M. B., and Hall, J. H. (2023). Institutional quality, financial development and sustainable economic growth among lower income countries. Natural Resources Forum,

Priyono, J. Development of Cooperatives in Increasing Cooperative Business (Case Study in Mojokerto Kota).

Qiang, Q., and Jian, C. (2020). Natural resource endowment, institutional quality and China's regional economic growth. *Resources Policy*, *66*, 101644. https://www.sciencedirect.com/science/article/pii/S0301420720300611

Rawashdeh, O. H. M., Azid, T., and Tahir, M. (2022). Do Institutions Cause Growth? Theory and Evidence from some Selected OIC Countries. *Al Qasimia University Journal of Islamic Economics*, *2*(1), 249-280. https://doi.org/10.52747/AQUJIE.2.1.87

Refakar, M., and Cárdenas, G. C. (2023). Corruption and transactional Crime: Building up effective accountable inclusive and transparent institutions as ground for sustainable finance. In *Sustainable Finance and Financial Crime* (pp. 165-188). Springer.

Romer, P. M. (1986). Increasing Returns and Long-Run Growth. *Journal of Political Economy*, *94*(5), 1002-1037. https://doi.org/10.1086/261420

Romer, P. M. (1990). Endogenous Technological Change. *Journal of Political Economy*, *98*(5, Part 2), S71-S102. https://doi.org/10.1086/261725

Royer, J. (2023). The economic theory of agricultural and consumer cooperatives. *Handbook of Research on Cooperatives and Mutuals*, 9-21. https://doi.org/10.4337/9781802202618.00008

Sandeep, M., and Kumar, A. (2018). Role of Cooperatives in Sustainable Rural Development in India. *European Journal of Business and Social Sciences*, *6*(12), 458-465.

Sexton, R. J., and Iskow, J. (2021). The competitive role of cooperatives in market-oriented economies: A policy analysis. In *Agricultural cooperatives in transition* (pp. 55-83). Routledge.

Shava, E., and Hofisi, C. (2019). Cooperatives as strategies of local economic development in the City of Tshwane. *Journal of Contemporary Management*, *16*(2), 23-42.

Sherov, A., and Sharapova, N. (2022). The impact and importance of natural resources on economic growth.

Sikayena, I., Bentum-Ennin, I., Andoh, F. K., and Asravor, R. (2022). Efficiency of public spending on human capital in Africa. *Cogent Economics and Finance*, *10*(1), 2140905. https://doi.org/10.1080/23322039.2022.2140905

Tan, M., Yang, D., and Yang, Q. (2023). Institutional quality, asset specificity, and foreign direct investment. *Journal of International Money and Finance*, *134*, 102845.

Tefera, D. A., Bijman, J., and Slingerland, M. A. (2017). Agricultural Co-Operatives in Ethiopia: Evolution, Functions and Impact. *Journal of International Development*, *29*(4), 431-453. https://doi.org/10.1002/jid.3240

Trisniarti, N., Sofyana, N. N., and Azhari, A. (2022). The Contribution of Cooperatives to the Indonesian Economy. *Almana: Jurnal Manajemen dan Bisnis*, *6*(3), 452-459.

Uddin, I., Ahmad, M., Ismailov, D., Balbaa, M. E., Akhmedov, A., Khasanov, S., and Haq, M. U. (2023). Enhancing institutional quality to boost economic development in developing nations: New insights from CS-ARDL approach. *Research in Globalization*, *7*, 100137.

Ullah, W., Zubir, A. S. M., and Ariff, A. M. (2024). Exploring the moderating effect of regulatory quality on the relationship between financial development and economic growth/economic volatility for developed and developing countries. *Borsa Istanbul Review*.

Urbano, D., Audretsch, D., Aparicio, S., and Noguera, M. (2020). Does entrepreneurial activity matter for economic growth in developing countries? The role of the institutional environment. *International Entrepreneurship and Management Journal*, *16*(3), 1065-1099. https://doi.org/10.1007/S11365-019-00621-5

Utile, T. I., Ijirshar, V. U., of, S. E. M. A. G. I. J., and undefined. (2021). Impact of institutional quality on economic growth in Nigeria. *gijmss.com.ng*, *4*(3). https://www.gijmss.com.ng/index.php/gijmss/article/view/84

Wandeda, D. O., Masai, W., and Nyandemo, S. M. (2021). Institutional quality and economic growth: evidence from Sub-Saharan Africa countries. *African Journal of Economic Review*, *9*(4), 106-125. https://www.ajol.info/index.php/ajer/article/view/214283

Wani, S. H., Yasmin, E., and Soudager, M. A. (2023). Role of Institutional Quality in Trade Openness and Economic Growth Nexus: Empirical Evidence from India. *Statistika: Statistics and Economy Journal*, *103*(2).

Wanyama, F. O. (2016). Surviving liberalization: the cooperative movement in Kenya.

Webb, T., and Cheney, G. (2014). Worker-owned-and-governed co-operatives and the wider co-operative movement: challenges and opportunities within and beyond the global economic crisis. *The Routledge companion to alternative Organisation*, 64-88.

Yang, S., Abdulahi, E., Haider, M. A., and Khan, M. A. (2019). Revisiting the curse: resource rent and economic growth of sub-sahara african countries. *International Journal of Economics and Financial Issues*, *9*(1), 121.

Zhou, Q., Faff, R., and Alpert, K. (2014). Bias correction in the estimation of dynamic panel models in corporate finance. *Journal of Corporate Finance*, *25*, 494-513. https://www.sciencedirect.com/science/article/pii/S092911991400011X

Appendix 1

Types of Co-operative societies in Uganda

TYPE OF SOCIETY	Freq.	Per cent	Cum.
Agricultural marketing	156	13.95	13.95
Carpentry	39	3.49	17.44
Dairy	91	8.14	25.58
Distillers and enguli	52	4.65	30.23
Fishing	39	3.49	33.72
Forestry	13	1.16	34.88
Handcraft	13	1.16	36.05
Hides and Skins	13	1.16	37.21
Housing	65	5.81	43.02
Housing and insurance	13	1.16	44.19
Livestock	91	8.14	52.33
Publication	13	1.16	53.49
Ranching and dairy	13	1.16	54.65
Savings and Credit	169	15.12	69.77
Thrift and Loans	13	1.16	70.93
Transport	91	8.14	79.07
Wholesale	13	1.16	80.23
Consumers	91	8.14	88.37
Multipurpose	117	10.47	98.84
Union	13	1.16	100.00
Total	**1118**	**100.00**	