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# **Impact of Institutions on Economic Growth Mozambique**

November 08, 2022

**Conferência Anual 2022 do Programa Crescimento inclusivo  
em Moçambique: Dinâmicas do sector privado e bem-estar**

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# Outline

- Background
- Data and Methodology
- Results
- Conclusions and Policy Implications



# I. BACKGROUND



# WHY INSTITUTIONS MATTER?

## What are the Fundamental Causes of Growth?

- **Institutions:** encouraging investment through incentives, human capital, entrepreneurship, innovation, occupational choice, land ownership.
- **Cultures:** values, beliefs, religions
- **Geography:** climate (affect productivity and worker effort), agricultural (technological) productivity higher in temperate zones than in tropics, burden of infectious diseases, natural endowments, transport costs
- **Trade and Integration:** affects productivity changes.

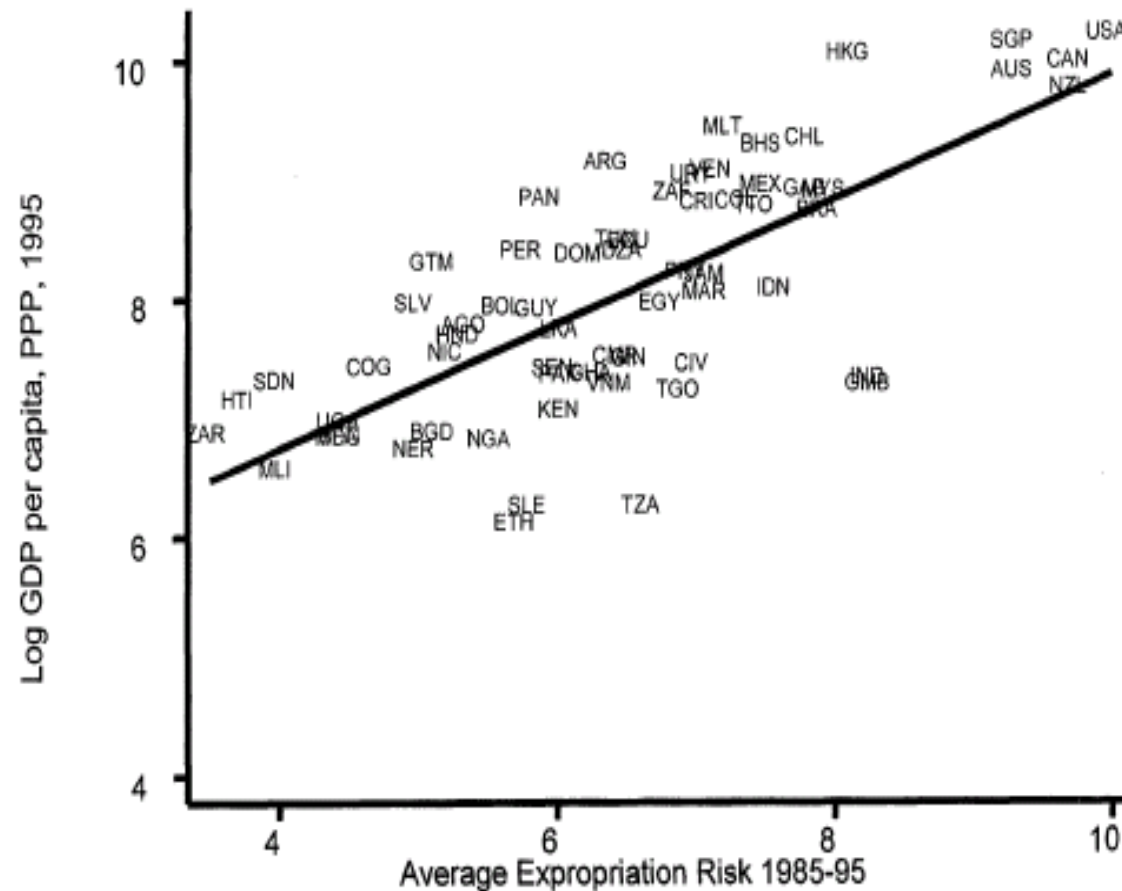
# WHY INSTITUTIONS MATTER?

1. Strong institutions (**developmental Institutions**) create incentives for investment in physical and human capital:
  - Reduce transaction costs and uncertainty;
  - Build trust and enhance cooperation
  - Efficient allocation of resources (human and physical capital)

**Institutions → incentives → investment → growth**
2. Weak institutions (**predatory – extractive institutions**) are bad for growth:
  - Increase economic volatility;
  - Corruption;
  - Transactions costs;
  - Democracy: popular policies (current vs investment)

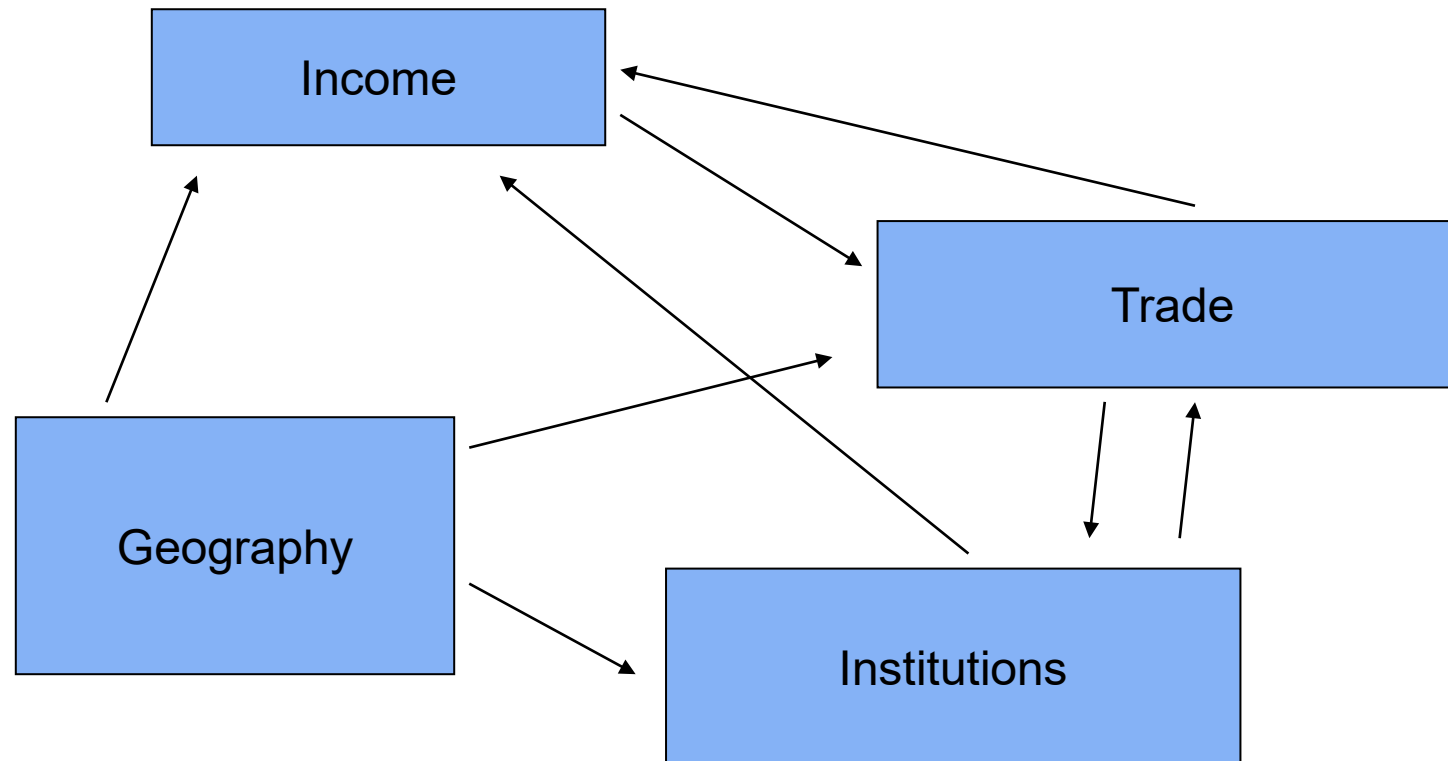
# WHY INSTITUTIONS MATTER?

## Correlation between GDP per Capita and Institutions



# WHY INSTITUTIONS MATTER?

Institutions can impact growth directly and indirectly – Endogeneity



**Source:** Rodrik (2001)

# WHY INSTITUTIONS MATTER?

- **The evidence is mixed:**

1. Strong evidence of **positive effect** of institutions on economic growth (Iqbal and Daly, 2014; Jankauskas and Seputiene, 2009; Rodrik et al., 2004);
2. The effect is **considerable** for countries with **strong institutions** compared to those with weak ones (Iqbal and Daly, 2014; Jankauskas and Seputiene, 2009).
3. **Bi-causal relationship** between institutions and growth (Dandume, 2013; Law et al., 2013).
4. Institutions have **negative impact** on growth (Garedow, 2021; Tavares and Wacziarg, 2001).

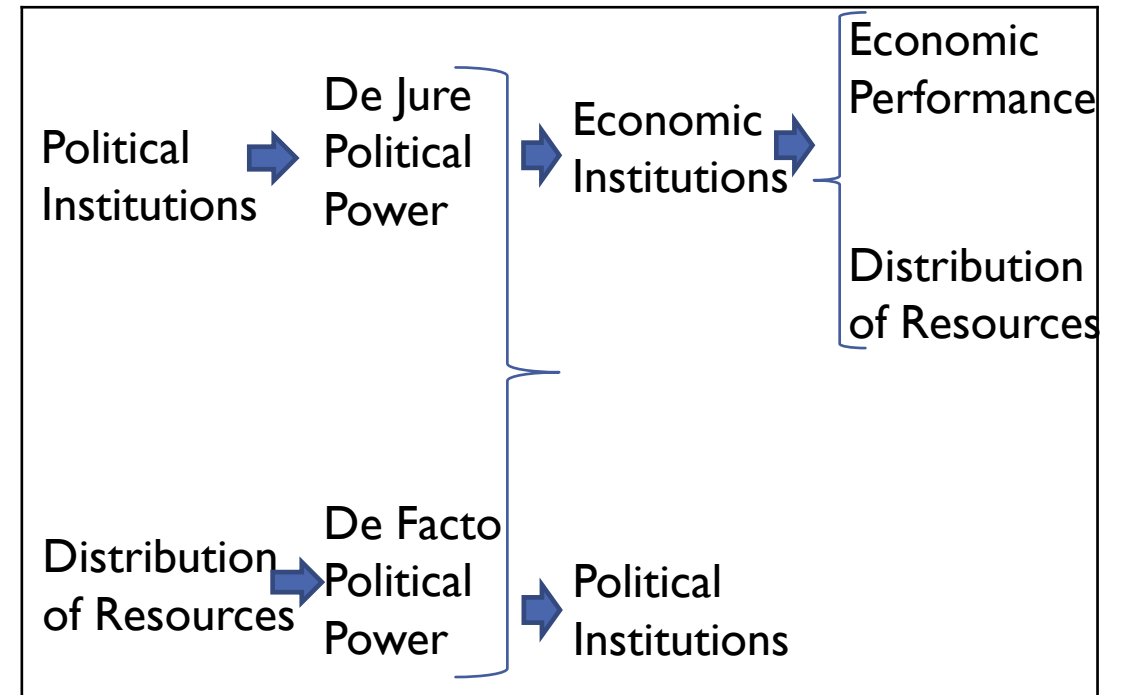


# WHICH INSTITUTIONS MATTER?

## Economic Vs Political Institutions:

- **Economic institutions:** provide economic agents with an environment conducive to savings, learning, inventing, and investing (property rights, patent laws etc.)
- **Political institutions:** create, enforce laws, ensure political stability to encourage investment (democracy vs non-democracy, electoral rules, extent of checks and balances etc.)

Source: Vitola and Senfelde (2015)



Source: Acemoglu, Johnson, and Robinson (2015)

# WHY INSTITUTIONS MATTER FOR MOZAMBIQUE?

- Over the last 2 decades, Mozambique implemented comprehensive reforms, legislative and institutional framework to address governance and corruption (IMF, 2019);
- However, Mozambique's Worldwide Governance Indicators (WGI) scores deteriorated, in the last two decades (World Bank, 2021) and its scores are below the Sub-Saharan Africa's;

**Table 1: Percentile Rank of Governance Indicators**

	Mozambique	Sub-Saharan Africa Average
Voice and Accountability	31.40	32.22
Political Stability and Absence of Violence/Terrorism	12.74	30.39
Government Effectiveness	23.56	26.39
Regulatory Quality	25.00	27.29
Rule of Law	15.38	28.78
Control of Corruption	25.96	31.80

Notes: Percentile rank (0-100) indicates rank of country among countries in the world. 0 corresponds the lowest rank and 100 the highest rank

Source: World Bank - Worldwide Governance Indicators

## **Some reasons of weak institutions:**

- Low state capacity and lack of independence from private interests (Cruz et. al, 2020);
- Rent seeking schemes and corruption (Cruz et. al, 2020);
- Corruption average annual cost was up to USD4.9 billion from 2004 to 2014 (CMI and CIP, 2016);

# RESEARCH QUESTIONS

1. What are the long-run and short-run effects of institutions on growth performance in Mozambique?
2. Which type of institutions matter most for growth performance in Mozambique?
3. Do political (Economic) Institutions Granger cause Economic (Political) Institutions?



## II. DATA AND METHODOLOGY



# DATA

- **Sample:** 1975 to 2020
- **Dependent Variable:** GDP per capita (GDPpc)
- **Institutions:**
  - **Political:** level of democracy and political violence indexes
  - **Economic:** rule of Law, corruption and property rights
- **Controls:** inflation (INF), capital (K) measured by Gross Capital Formation (%GDP), government expenditure (G) (%GDP), labor (L) measured by population growth, human capital (HC) measured by gross secondary enrollment;

# THEORETICAL AND EMPIRICAL MODEL

- **Theoretical growth model proposed by Mankiw et al. (1992):**

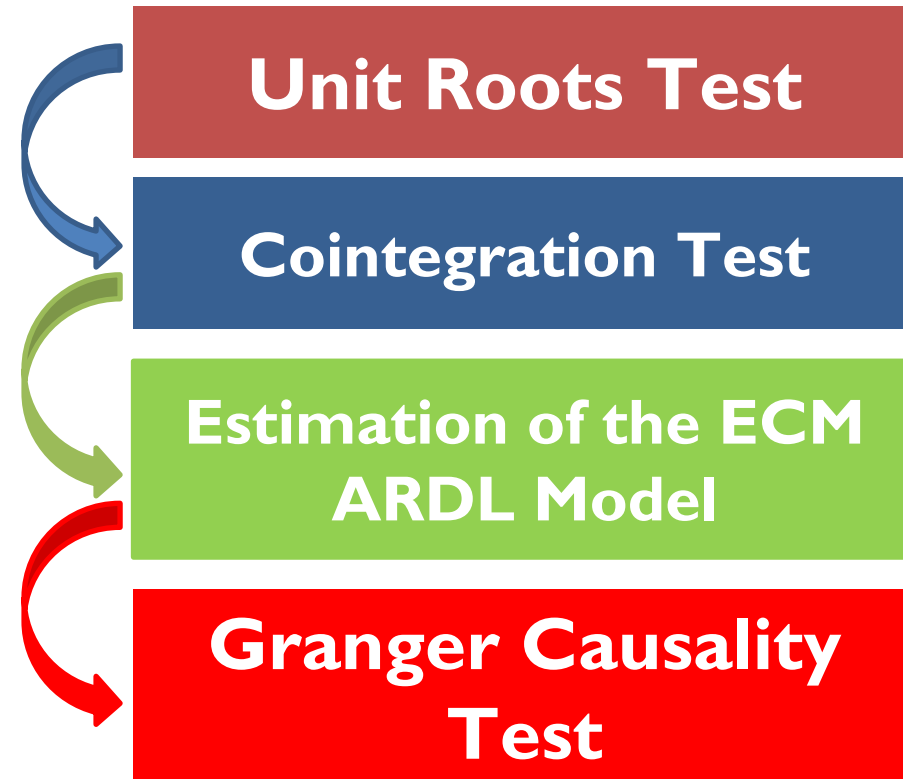
$$\underline{GDPpc}_t = f(IQ_{ti}, INF_t, K_t, G_t, L_t, \underline{HC}_t)$$

- **ARDL model error correction; Pesaran et al (2001)**

$$\Delta \ln GDPpc_t$$

$$\begin{aligned} &= \beta_0 + \sum_{i=1}^k \beta_{1i} \Delta \ln GDPpc_{t-i} + \sum_{i=0}^l \beta_{2i} \Delta IQ_{j,t-i} + \sum_{i=0}^m \beta_{3i} \Delta INF_{t-i} + \sum_{i=0}^n \beta_{5i} \Delta L_{t-i} + \sum_{i=0}^o \beta_{6i} \Delta \ln K_{t-i} + \sum_{i=0}^p \beta_{7i} \Delta \ln G_{t-i} \\ &+ \sum_{i=0}^q \beta_{8i} \Delta \ln HC_{t-i} + \vartheta ECT_{t-1} + \varepsilon_t \end{aligned}$$

# ESTIMATION STRATEGY





# III. RESULTS





# INSTITUTIONS AND GROWTH HAVE A LONG-RUN RELATIONSHIP

- **Unit root test:** with exception of inflation, all variables are I(1)
- **Cointegration test:** there is a long-run relationship

**Table 1: Augmented Dickey-Fuller Unit Root Test**

Variables	Level		First Difference		Order of Integration
	Test Statistics	p-value	Test Statistics	p-value	
<b>GDP per capita</b>	-0.468	0.888	-4.716	0.000	I(1)
<b>Rule of Law Index</b>	-1.363	0.592	-5.227	0.000	I(1)
<b>Property Rights Index</b>	-1.245	0.647	-6.530	0.000	I(1)
<b>Corruption Control Index</b>	-0.997	0.747	-6.249	0.000	I(1)
<b>Political Violence Index</b>	-1.596	0.477	-7.040	0.000	I(1)
<b>Level of Democracy Index</b>	-1.149	0.688	-6.693	0.000	I(1)
<b>Inflation</b>	-3.510	0.012	-9.320	0.000	I(0)
<b>Government Expenditure</b>	-2.240	0.196	-7.450	0.000	I(1)
<b>Human Capital</b>	1.009	0.996	-6.227	0.000	I(1)
<b>Labor</b>	-1.780	0.384	-4.533	0.001	I(1)
<b>Capital</b>	-1.445	0.552	-7.515	0.000	I(1)
<b>5% Critical Values**</b>	-2.928		-2.930		

**Table 2: Bounds test for cointegration analysis**

Institutions Quality Indicator	Democracy	Political Violence	Rule of Law	Corruption	Property Rights
ARDL Model	(2, 4, 2, 4, 3, 4, 4)	(3, 2, 3, 2, 3, 3, 4)	(3, 4, 4, 4, 4, 4, 4)	(4, 4, 4, 4, 4, 4, 4)	(2, 4, 2, 4, 3, 4, 4)
F-Statistics	25.68	13.20	6.44	31.61	27.74
Cointegration Model	Yes ECM	Yes ECM	Yes ECM	Yes ECM	Yes ECM
<b>Bounds</b>					
Critical Values (5% Significance Level)	<b>Lower - I(0)</b>		<b>Upper - I(1)</b>		
	2.87		4.00		

Notes: Null Hypothesis: No long-run relationship; Critical Values obtained from Pesaran et al. (2001)  
 GDP per capita is in logs, property rights, democracy, political violence, rule of law and corruption indexes are in levels, inflation is Consume Price Index percentage change, government spending and gross capital formation are in percentage of GDP, secondary school enrollment and population growth are in percentage. All the regressions included a constant and trend.

Source: Researchers' computation based on Eviews 12

\*\*Obtained from MacKinnon(1996). Null hypothesis: Unit Root  
 Notes: GDP per capita is in logs, property rights, democracy, political violence, rule of law and corruption indexes are in levels, inflation is Consume Price Index percentage change, government spending and gross capital formation are in percentage of GDP, secondary school enrollment and population growth are in percentage. All the regressions included a constant and trend.  
 Source: Researchers' computation based on Eviews 12

# INSTITUTIONS IMPROVEMENT HAVE POSITIVE IMPACT ON GROWTH PERFORMANCE IN MOZAMBIQUE.

- **Political Institutions**
  - Democracy Level:
  - Political violence:
- **Economic Institutions:**
  - Rule of law:
  - Corruption:
  - Property rights:

**Table 3: Estimated Long-run Coefficients**

<b>Institutions Indicators</b>	<b>Democracy</b>	<b>Political Violence</b>	<b>Rule of Law</b>	<b>Corruption</b>	<b>Property Rights</b>
ARDL Model	(2,4,2,4,3,4,4)	(3,2,3,2,3,3,4)	(3,4,4,4,4,4,4)	(4,4,4,4,4,4,4)	(2,4,2,4,3,4,4)
<b>Variables</b>	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
<b>Institution</b>	0.112 (0.001)	-0.075 (0.001)	1.758 (0.048)	-5.795 (0.029)	5.467 (0.011)
<b>Inflation</b>	-0.434 (0.008)	-0.424 (0.007)	-1.109 (0.004)	-0.960 (0.000)	-1.384 (0.032)
<b>Government Expenditure</b>	5.664 (0.007)	1.076 (0.178)	2.425 (0.411)	6.613 (0.113)	14.251 (0.069)
<b>Human Capital</b>	1.712 (0.096)	0.107 (0.806)	1.962 (0.153)	2.220 (0.037)	0.500 (0.762)
<b>Labor</b>	1.048 (0.013)	1.374 (0.003)	2.955 (0.058)	5.598 (0.030)	0.154 (0.093)
<b>Capital</b>	0.240 (0.012)	0.138 (0.043)	0.382 (0.050)	0.666 (0.026)	0.246 (0.061)

Notes: GDP per capita is in logs, property rights, democracy, political violence, rule of law and corruption indexes are in levels, inflation is Consume Price Index percentage change, government spending and gross capital formation are in percentage of GDP, secondary school enrollment and population growth are in percentage. All the regressions included a constant and trend.

Source: Researcher's computation based on Eviews 12

# INSTITUTIONS GRANGER CAUSE GROWTH PERFORMANCE

- With exception of political violence, there is a unidirectional causality running from institutions to growth;
- Economic institutions granger cause political institutions;

**Table 5: Pairwise Granger causality tests**

**A. Granger Causality Test between Institutions and Growth Performance**

Null Hypothesis	F-Statistic	p-value
PROP does not Granger Cause RGDPPC	5.077	0.011
RGDPPC does not Granger Cause PROP	1.004	0.376
MPV does not Granger Cause RGDPPC	2.939	0.065
RGDPPC does not Granger Cause MPV	0.684	0.510
DEMOCR does not Granger Cause RGDPPC	10.582	0.000
RGDPPC does not Granger Cause DEMOCR	0.933	0.402
CORRUPTION does not Granger Cause RGDPPC	5.640	0.007
RGDPPC does not Granger Cause CORRUPTION	1.399	0.259
RLAW does not Granger Cause RGDPPC	6.215	0.005
RGDPPC does not Granger Cause RLAW	2.387	0.105

**B. Granger Causality Test between Political and Economic Institutions**

Null Hypothesis	F-Statistic	p-value
MPV does not Granger Cause PROP	3.018	0.060
PROP does not Granger Cause MPV	5.612	0.007
DEMOCR does not Granger Cause PROP	1.178	0.319
PROP does not Granger Cause DEMOCR	11.625	0.000
CORRUPTION does not Granger Cause MPV	5.648	0.007
MPV does not Granger Cause CORRUPTION	1.044	0.362
RLAW does not Granger Cause MPV	5.677	0.007
MPV does not Granger Cause RLAW	2.793	0.074
CORRUPTION does not Granger Cause DEMOCR	7.222	0.002
DEMOCR does not Granger Cause CORRUPTION	2.047	0.143
RLAW does not Granger Cause DEMOCR	10.405	0.000
DEMOCR does not Granger Cause RLAW	1.400	0.259

## LIMITATIONS

- **Endogeneity:** Institutions affect growth but the latter in turn influences the kind of institutions that exist;
- **Reverse causality:** makes it hard to identify the impact of institutions on development or growth;
- **Measuring institutions is a challenge:** most institutional variables that are available in datasets tend to be outcome variables rather than deep institutional variables;



### III. CONCLUSIONS AND POLICY IMPLICATIONS



## KEY TAKEAWAYS

- Mozambique's institutions quality have been deteriorating;
- Both the political institutions and the economic institutions, have a significant impact on growth performance in the long and short run in Mozambique.
- Unidirectional Granger causality running from Institutions to Growth performance.
- Unidirectional Granger causality running from economic to political institutions .

## POLICY IMPLICATIONS

- Mozambique should continue implementing reforms, strategies, and laws to address the overall governance challenges focusing mainly on corruption.
- Institutional reforms could aim improvements of transparency, accountability, and regulation which could help reduce corruption and enhance other dimensions of institutions.
- Strengthening the capacity-building to government officials in policy formulation, implementation, and monitoring as well as improve investment in education to level up skills and abilities.



**THANK YOU**

