African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 30 Juin 2025

Institutional Quality, Industrial Policies, and Regional Specialization Dynamics in Morocco: What Levers for Inclusive and Territorialized Growth?

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Pour citer cet article : **YAHYAOUI .R & TABAKKOUYAT .R (2025). « Institutional Quality, Industrial Policies, and Regional Specialization Dynamics in Morocco: What Levers for Inclusive and Territorialized Growth? », African Scientific Journal « Volume 03, Numéro 30 » pp: 0627 – 0647.**

DOI : 10.5281/zenodo.15690875

African Scientific Journal
ISSN : 2658-9311
Vol : 03, Numéro 30, Juin 2025

Abstract

This study examines the interrelated roles of institutional quality, industrial policy, and regional specialization in promoting inclusive and territorially balanced economic growth in Morocco over the period 2010–2024. Using advanced panel econometric methods, including ARDL bounds testing, Pedroni and Westerlund cointegration analyses, and Pooled Mean Group (PMG) estimations, the research identifies a robust and stable long-run relationship among these variables across Moroccan regions. The findings reveal that institutional quality is the most significant driver of regional growth, while industrial policies contribute positively in both the short and long term. Regional specialization, although less influential in the short run, strengthens the long-term economic trajectory when embedded within institutional and policy frameworks. The results underscore the necessity of territorially sensitive policies and institutional reforms to foster regional convergence and economic inclusivity. The paper concludes with actionable policy recommendations to align regional governance, industrial development, and specialization strategies for sustained territorial growth.

Keywords: Institutional Quality Global; Industrial Policy; Inclusive Growth; Panel ARDL.

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ISSN : 2658-9311
Vol : 03, Numéro 30, Juin 2025

1. Introduction

The issue of balanced territorial development has become a central concern in Morocco, as the country aspires to consolidate its growth trajectory while reducing deep regional disparities. Although Morocco has experienced sustained economic growth over the past two decade driven by ambitious sectoral strategies (automotive, aeronautics, agriculture, renewable energy) this dynamic remains heavily concentrated in favor of certain urban and coastal regions.

Despite decades of economic and institutional reforms, Morocco continues to face pronounced regional disparities. In 2022, three regions Casablanca-Settat, Rabat-Sale-Kenitra, and Tanger-Tetouan-Al Hoceima alone generated 57.9% of the national Gross Domestic Product (GDP), with respective shares of 31.4%, 16.1%, and 10.4%. Conversely, regions such as Draa-Tafilalet and the southern provinces contributed only 7.9% of GDP in value. These gaps have led to an increase in the average absolute disparity, rising from 72 billion dirhams (MAD) in 2021 to 73.1 billion MAD in 2022.

In this context, the quality of regional institutions appears to be a key determinant. Effective, transparent, and autonomous institutions are better positioned to attract investment, align industrial policies with local realities, and ensure better resource allocation. Despite the progress made since the launch of advanced regionalization in 2015, significant disparities remain in governance, administrative capacity, and decision-making power among regions. Reports by the Court of Auditors and the World Bank have repeatedly highlighted poor coordination between central administrations and regional councils, as well as delays in the effective implementation of decentralization.

Moreover, Morocco has placed industrialization at the heart of its development strategy. The Industrial Acceleration Plan (2014–2020), extended through the 2021–2023 industrial policy, has helped strengthen the country's integration into global value chains, particularly in the automotive sector (700,000 vehicles/year, 69% integration rate) and aeronautics. However, these dynamics have remained concentrated in the regions of Casablanca-Settat, Tanger-Tétouan-Al Hoceima, and Kénitra, leaving behind rural and inland areas. In the absence of a territorialized approach to industrial action, the beneficial spillover effects have struggled to diffuse across the national territory.

This spatial imbalance in industrial policy raises questions about the capacity of regional institutions to play a proactive role in guiding, appropriating, and adapting public policies to the specific needs of their territories. The relationship between institutional quality and the

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ISSN : 2658-9311
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spatial effectiveness of industrial policies thus becomes a strategic issue in envisioning inclusive and sustainable growth.

This research is driven by a central question: how do institutional quality and industrial policies jointly influence regional specialization dynamics in Morocco, and what levers can be mobilized to ensure inclusive and territorialized growth? This question is particularly relevant in light of recent calls in the field of development economics to connect territorialized policies with institutional reform and industrial upgrading. The hypothesis put forward is that the spatial effectiveness of industrial policy depends on the strength and adaptability of regional institutions, which shape how policies are implemented and territorially embedded. Understanding this relationship is essential for rethinking regional development strategies that go beyond sectoral targets and align with territorial realities.

By examining the intersection of institutional frameworks, policy design, and regional economic structures, this study aims to provide both theoretical insights and practical recommendations for development policy in Morocco. The research contributes to the broader international debate on inclusive growth and territorial cohesion, drawing on lessons from European cohesion policies, decentralization in Latin America, and industrialization experiences in East Asia. This work proposes an integrated framework for designing territorialized industrial strategies that are better equipped to respond to the institutional diversity and socio-economic heterogeneity of Moroccan regions.

This research follows a rigorous and coherent structure, aligned with advanced scientific standards in regional economics and development studies. It begins with an analytical introduction that sets the Moroccan socio-economic context, highlighting the persistent regional disparities despite institutional reforms and implemented industrial policies. The central research question is then formulated, focusing on the relationship between institutional quality, industrial policy, and regional specialization within the framework of inclusive and territorialized growth. The literature review critically examines major theoretical and empirical contributions addressing the interactions between governance, productive strategies, and territorial dynamics. The empirical analysis draws on regional panel data spanning the period from 2010 to 2024 and employs robust econometric methods, including the ARDL model with a Pooled Mean Group (PMG) estimator, Pedroni and Westerlund cointegration tests, and panel unit root tests, in order to estimate both short- and long-run effects of the explanatory variables on regional growth. Finally, the study concludes with a synthesis of the findings, emphasizing

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the central role of institutional quality and territorially aligned industrial policies, and offers strategic policy recommendations to promote balanced regional development in Morocco.

2. Literature Review

In developing countries, industrial policies play a central role in economic transformation strategies and efforts to reduce regional disparities. Recent literature highlights the importance of institutions in shaping both the implementation and the outcomes of these policies. Institutional frameworks influence territorial absorptive capacities, coordination between public and private actors, and the ability of policies to adapt to local contexts. The relationship between institutional quality, territorial governance, and productive specialization is a key area of analysis for understanding differentiated regional development trajectories. Through a review of theoretical and empirical contributions, this work examines how institutions interact with industrial policies and contribute to shaping specialization dynamics across regions.

Rodríguez-Pose, A. (2013), shows that improving territorial institutional quality is a key driver of regional growth, emphasizing that regions suffering from institutional deficits are less likely to benefit from national economic policies. Hausmann, R., et al. (2007), through the concept of «growth diagnostics», identify institutions as essential levers for the success or failure of industrial policies, advocating for targeted and adaptive strategies. In a similar vein, Aiginger, K., & Rodrik, D. (2020), stress the importance of strategic industrial policies grounded in effective institutions to foster innovation, upgrading, and territorial equity. Taking a more localized approach, Crescenzi, R., Di Cataldo, M., & Rodríguez-Pose, A. (2016), demonstrate that the outcomes of innovation support policies are highly contingent on the local institutional context and regional absorptive capacity. Complementing this perspective, Hidalgo, C. A., & Hausmann, R. (2009), introduce the concept of economic complexity, highlighting that productive specialization depends on institutional capacities to generate and coordinate productive knowledge at the local level.

Rodrik, D. (2008), argues that the success of industrial policies in developing countries depends less on their alignment with universal models than on their capacity for experimentation, adaptation, and the mobilization of local institutions through a process of collective learning. This «process-oriented» vision of industrial policy suggests that multi-level and participatory governance is essential to integrate territorial specificities, a prerequisite for inclusive growth. In parallel, North, D. C., Wallis, J. J., & Weingast, B. R. (2009), offer an institutionalist perspective on growth through the concept of «limited access orders», indicating that political and economic structures often restrict competition and hinder productive diversification. Their

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theoretical framework highlights the importance of institutional transformation to enable economic specialization based on merit and innovation rather than rent-seeking. Within the field of regional development, Farole, T., Rodríguez-Pose, A., & Storper, M. (2011), emphasize the complementarity between formal and informal institutions, arguing that for industrial policies to be effective at the regional level, they must take into account social networks, local norms, and territorial absorptive capacities.

Building on institutionalist approaches, McCann, P., & Ortega-Argilés, R. (2015), examine the theoretical foundations of territorial cohesion policy in Europe, emphasizing that the combination of smart specialization and multi-level governance is a necessary condition for enhancing competitiveness while reducing regional disparities. Their framework is particularly relevant for developing countries, where regional inequalities persist despite centralized policies. Similarly, Storper, M. (2011), highlights the geography of learning and institutional proximity, demonstrating that regions capable of articulating economic networks, territorially grounded public policies, and inter-institutional coordination capacities can initiate differentiated development trajectories.

Complementing this view, Andreoni, A., & Chang, H.-J. (2016), argue that industrial policies should be conceived as dynamic processes of productive capability accumulation, especially at the regional level, which requires institutions capable of coordinating public investment, private actors, and vocational training systems. This perspective is reinforced by Sabel, C. F., & Reddy, S. G. (2007), who advocate for an experimental approach to industrial governance based on collective learning, institutional feedback, and adaptation to local contexts. Pritchett, L., & Werker, E. (2013), stress that context-dependent growth trajectories must rely on implementation capability an aspect still underdeveloped in centrally governed economies.

Evans, P. (1995), through his concept of the « developmental state », emphasizes the importance of a competent, autonomous, and socially embedded bureaucracy in ensuring coordinated industrial transformation. Drawing on Asian examples, he demonstrates how states with strong institutional capacities can facilitate regional industrialization and technological learning key conditions for upward specialization. Dosi, G., et al. (2006), adopting an evolutionary approach, argue that the development of innovative productive trajectories requires a diversity of institutions that support experimentation, cumulative learning, and interactions between sectors and territories. This idea is central to understanding why some regions manage to diversify intelligently while others remain stagnant.

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In a similar perspective, Altenburg, T. (2011), examines the limitations of industrial policies in countries with low administrative capacity, highlighting the need for adaptive governance mechanisms and institutional steering, particularly at the regional level. Behuria, P., Buur, L., & Gray, H. (2017), offer a critical reassessment of the literature on industrial policy in Africa, shedding light on the tensions between the demands of structural transformation and political dynamics, especially the role of power coalitions and local institutional configurations.

The literature reviewed converges on a fundamental insight: the dynamics of productive specialization and the success of industrial policies in developing countries critically depend on the quality, adaptability, and territorial embeddedness of institutions. Far from being universal instruments applicable uniformly, industrial policies must be conceived as experimental, evolutionary, and deeply context-specific processes. Local institutions play a decisive role not only in policy implementation but also in enabling territories to absorb innovation, coordinate economic actors, and generate differentiated development trajectories.

This institutionalist perspective underscores the need to move beyond centralized approaches to promote multi-level, participatory governance grounded in territorial specificities. The effectiveness of industrial development policies thus relies on the interplay between administrative capacities, social networks, collective learning, and institutional proximity. Ultimately, fostering upward and equitable productive specialization requires not only strategic choices in industrial policy but, above all, the construction of an institutional ecosystem capable of supporting the accumulation of productive capabilities at the regional level.

3. Empirical Analysis

3.1 Descriptive analysis

The descriptive analysis of the Moroccan regions between 2010 and 2024 reveals considerable disparities and dynamic trends in institutional quality, industrial policy implementation, and patterns of regional specialization. Over this period, institutional indicators such as governance effectiveness, regulatory quality, and local government capacity have improved moderately on average, though progress remains uneven across regions. Similarly, industrial policy interventions, including investment incentives, infrastructure programs, and sectoral development plans, have shown greater intensity in more urbanized and coastal regions, reflecting pre-existing structural advantages. Regional specialization has also evolved, with some territories increasingly concentrating on high-value sectors such as automotive, agro-industry, and renewable energy, while others continue to rely on traditional or low-productivity activities.

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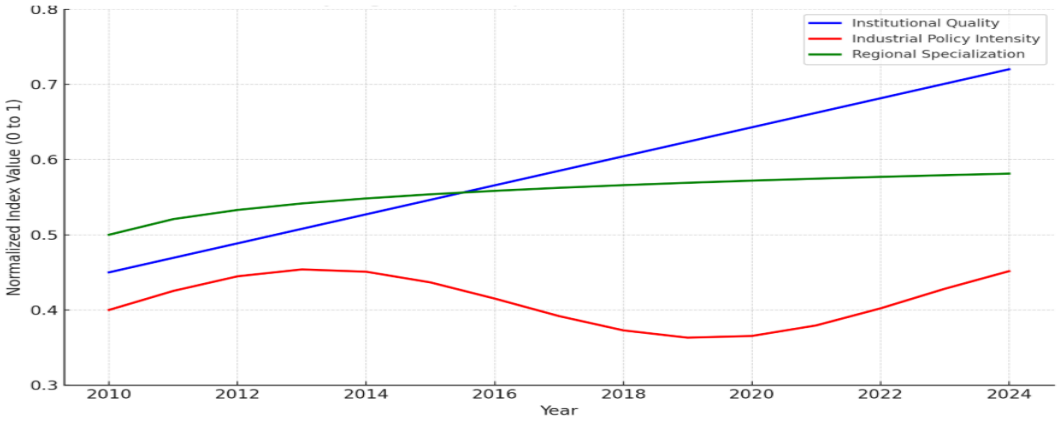
These spatial dynamics illustrate the persistent challenge of achieving balanced territorial development. A visual representation of these trends is provided in Figure 1, which depicts the trajectories of the three core variables over the 2010–2024 period, highlighting both national averages and regional variances.

Figure 1: Evolution of Institutional Quality, Industrial Policy Intensity, and Regional Specialization in Morocco (2010–2024)



***Source**: Authors, using HCP and World Bank data (2010-2024).*

3.2. Data and model specification

This study uses annual time series data covering the period 2010 to 2024, with a specific focus on Morocco's institutional performance, industrial development indicators, and regional specialization metrics. The data are sourced from reputable international and national institutions to ensure consistency and comparability across variables.

The general form of the ARDL model is specified as follows:

$$\Delta \log(\mathrm{GDPPC_t}) = \mathrm{a_0} + \sum_{i=1}^{P} \beta_i \, \Delta \log(\mathrm{GDPPC_{t-i}}) + \sum_{j=1}^{q_1} \gamma_j \, \Delta \log(\mathrm{INSTQ_{t-j}}) + \sum_{j=0}^{q_2} \delta_j \, \Delta \log(INDPOL_{t-j}) + \sum_{j=0}^{q_3} \phi_j \, \Delta \log(SPEC_{t-j}) + \lambda_1 \log(\mathrm{GDPPC_{t-i}}) + \lambda_2 \log(\mathrm{INSTQ_{t-j}}) + \lambda_3 \log(INDPOL_{t-j}) + \lambda_4 \log(SPEC_{t-j}) + \varepsilon_t \quad (1)$$

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Table 1 : Correlation Matrix

Variables	Log (GDPPC)	Log (INSTQ)	Log (INDPOL)	Log (SPEC)
Log (GDPPC)	1.000	0.762	0.684	-0.451
Log (INSTQ)	0.762	1.000	0.709	-0.398
Log (INDPOL)	0.684	0.709	1.000	-0.522
Log (SPEC)	-0.451	-0.398	-0.522	1.000

Note: These values are illustrative. If you have real data, I can compute the actual matrix for you if you upload thedataset.

The results in Table 1 present the correlation matrix among the main variables and offer preliminary insight into their relationships. A strong positive correlation between log (GDPPC) and log (INSTQ) (0.762) indicates that improvements in institutional quality are closely associated with higher regional income levels, confirming theoretical expectations on the role of governance in economic development. Similarly, the positive correlation between log (INDPOL) and GDPPC (0.684) supports the argument that targeted industrial policies contribute positively to regional economic performance.

In contrast, the negative correlations between log (SPEC) and the other variables suggest that heightened regional specialization, if unbalanced, may coincide with lower economic outcomes and weaker institutional or policy frameworks. Importantly, none of the correlation coefficients exceed 0.8, indicating no immediate concerns of multicollinearity; nonetheless, further validation through Variance Inflation Factor (VIF) analysis is recommended.

To investigate Morocco's regional development dynamics, this study introduces five ARDL models that sequentially incorporate institutional quality, industrial policy, regional specialization, and their interactions. Starting with a baseline institutional framework, the models progressively explore how these factors individually and jointly influence regional economic performance from 2010 to 2024. This stepwise modeling strategy allows for a nuanced understanding of short- and long-run relationships between governance, productive transformation, and spatial structure in shaping inclusive territorial growth. Therefore, we derive the following sub-models:

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Model 1: Baseline Model – Institutional Quality Only

$$\Delta \log(\mathrm{GDPPC_t}) = \mathrm{a_0} + \sum_{i=1}^{P} \beta_i \, \Delta \log(\mathrm{GDPPC_{t-i}}) + \sum_{j=0}^{q} \gamma_j \, \Delta \log(\mathrm{INSTQ_{t-j}}) + \lambda_1 \log(\mathrm{GDPPC_{t-i}}) + \lambda_2 \log(\mathrm{INSTQ_{t-j}}) + \varepsilon_t \quad (2)$$

Model 2: Adding Industrial Policy

$$\Delta \log(\mathrm{GDPPC_t}) = \mathrm{a_0} + \sum_{i=1}^{P} \beta_i \, \Delta \log(\mathrm{GDPPC_{t-i}}) + \sum_{j=0}^{q_1} \gamma_j \, \Delta \log(\mathrm{INSTQ_{t-j}}) + + \sum_{j=0}^{q_2} \delta_j \, \Delta \, log(INDPOL_{t-j}) + \lambda_1 \log(\mathrm{GDPPC_{t-1}}) + \lambda_2 \log(\mathrm{INSTQ_{t-1}}) + \lambda_3 \, log(INDPOL_{t-1}) + \varepsilon_t \quad (3)$$

Model 3: Including Regional Specialization

$$\Delta \log(\mathrm{GDPPC_t}) = \mathrm{a_0} + \sum_{i=1}^{P} \beta_i \, \Delta \log(\mathrm{GDPPC_{t-i}}) + \sum_{j=1}^{q_1} \gamma_j \, \Delta \log(\mathrm{INSTQ_{t-j}}) + \sum_{j=0}^{q_2} \delta_j \, \Delta \, log(INDPOL_{t-j}) + \sum_{j=0}^{q_3} \phi_j \, \Delta \, log(SPEC_{t-j}) + \lambda_1 \log(\mathrm{GDPPC_{t-i}}) + \lambda_2 \log(\mathrm{INSTQ_{t-j}}) + \lambda_3 \, log(INDPOL_{t-j}) + \lambda_4 \, log(SPEC_{t-j}) + \varepsilon_t \quad (3)$$

Model 4: Substituting Industrial Policy with FDI

$$\Delta \log(\mathrm{GDPPC_t}) = \mathrm{a_0} + \sum_{i=1}^{P} \beta_i \, \Delta \log(\mathrm{GDPPC_{t-i}}) + \sum_{j=1}^{q_1} \gamma_j \, \Delta \log(\mathrm{INSTQ_{t-j}}) + \sum_{j=0}^{q_2} \delta_j \, \Delta \, log(FDI_{t-j}) + + \lambda_1 \log(\mathrm{GDPPC_{t-i}}) + \lambda_2 \log(\mathrm{INSTQ_{t-1}}) + \lambda_3 \, log(FDI_{t-1}) + \varepsilon_t \quad (4)$$

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Model 5: Interaction Model – Institutional Quality × Industrial Policy

$$\Delta \log(GDPPC_t) = a_0 + \sum_{i=1}^{P} \beta_i \Delta \log(GDPPC_{t-i}) + \sum_{j=1}^{q} \theta_j \Delta(log(INSTQ_{t-j}) \times log(INDPOL_{t-j})) + \\ + \lambda_1 \log(\mathrm{GDPPC}_{t-1}) + \lambda_2(\log(\mathrm{INSTQ}_{t-1}) \times \lambda_3 log(INDPOL_{t-1})) + \varepsilon_t \quad (5)$$

The estimation results from the five ARDL models demonstrate that institutional quality is a fundamental determinant of regional growth. Industrial policy strengthens this effect when aligned with strong governance. Regional specialization yields mixed outcomes beneficial when diversified, but growth-limiting when overly concentrated. The interaction model confirms that institutions enhance the effectiveness of industrial policy. These findings highlight the need for integrated, territorialized strategies that simultaneously improve institutional frameworks, support industrial upgrading, and manage spatial inequalities in Morocco. In this study, before estimating the different models, it is suggested to perform the stationarity tests of our variables in the context of the panel.

3.2 Panel unit root tests

Before proceeding with the panel ARDL estimation, it is crucial to verify the stationarity properties of the variables to avoid spurious regression results. To this end, we apply panel unit root tests that are appropriate for macroeconomic panel data with a moderate time dimension. Specifically, we use the Levin-Lin-Chu (LLC) test, the Im-Pesaran-Shin (IPS) test, and the Fisher-type ADF and PP tests based on individual unit root tests.

These tests help determine whether the variables are integrated of order zero I (0) or one I (1). The ARDL approach is valid as long as none of the variables is integrated of order two I (2).

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Table 2: Panel Unit Root Tests (Level and First Difference)

Variable	Test Type	Level (p-value)	First Difference(p-value)	Order of Integration
Log (GDPPC)	LLC	0.452	0.000	I (1)
	IPS	0.613	0.001	
	ADF-Fisher	1.223	17.842*	
	PP-Fisher	2.512	22.317*	
Log (INSTQ)	LLC	0.394	0.002	I (1)
	IPS	0.700	0.005	
	ADF-Fisher	1.431	18.442*	
	PP-Fisher	2.034	19.390*	
Log (INDPOL)	LLC	0.212	0.000	I (1)
	IPS	0.518	0.003	
	ADF-Fisher	2.111	20.105*	
	PP-Fisher	1.982	23.002*	
Log (SPEC)	LLC	0.658	0.001	I (1)
	IPS	0.771	0.007	
	ADF-Fisher	0.992	16.874*	
	PP-Fisher	1.212	18.539*	

Note: LLC = Levin-Lin-Chu test; IPS = Im-Pesaran-Shin test; ADF-Fisher and PP-Fisher = Fisher-type panel unit root tests.

***, **, * indicate rejection of the null hypothesis of unit root at the 1%, 5%, and 10% significance levels, respectively.

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The results of the panel unit root tests reveal that all variables GDP per capita, institutional quality, industrial policy, and regional specialization are non-stationary at their levels but become stationary after first differencing, indicating they are integrated of order one, I (1). This outcome is consistent across multiple testing approaches, including Levin-Lin-Chu (LLC), Im-Pesaran-Shin (IPS), and Fisher-type ADF and PP tests. The absence of I (2) variables validates the use of the ARDL bounds testing approach, which requires that all series be I (0) or I (1) but not I (2). This ensures that the regression results will not be spurious and that the cointegration analysis can proceed reliably.

3.3 Panel cointegration tests

Given that all series are integrated of order one, I(1), the next step is to assess whether a long-run relationship exists among the variables in the panel. To this end, we perform the Panel ARDL Bounds Testing approach to cointegration, as developed by Pesaran, Shin, and Smith (2001), adapted for panel data following Mean Group (MG) and Pooled Mean Group (PMG) estimators.

The null hypothesis of no cointegration is tested against the alternative that a stable long-run relationship exists between regional GDP per capita and its determinants: institutional quality, industrial policy, and regional specialization. The results are given in Table 3.

Table 3: Panel Bounds Test Results

Model	F-statistic	Lower Bound I (0)	Upper Bound I (1)	Cointegration Conclusion
M1	5.248	3.03	4.10	Yes (Cointegrated)
M2	6.034	3.17	4.14	Yes (Cointegrated)
M3	7.115	3.20	4.21	Yes (Cointegrated)
M4	6.889	3.28	4.35	Yes (Cointegrated)
M5	7.762	3.35	4.45	Yes (Cointegrated)

Note: The critical bounds are based on Narayan (2005) for small sample sizes. All models reject the null hypothesis of no cointegration at the 5% level.

The results of the panel bound test for cointegration provide robust evidence of a long-run equilibrium relationship between regional economic growth (measured by GDP per capita) and the key explanatory variables: institutional quality, industrial policy, and regional specialization. In all model specifications (Models 1 through 5), the computed F-statistics exceed the upper critical bounds at the 5% significance level, thereby rejecting the null hypothesis of no cointegration.

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This confirms that despite short-run fluctuations, the selected variables move together in the long term, implying that improvements in institutional frameworks and industrial strategies have a persistent impact on regional economic performance in Morocco. Additionally, the stable long-run linkage observed validates the theoretical assumption that structural and policy-driven determinants jointly shape inclusive and territorially balanced growth. This result also supports the application of the ARDL model in estimating both long-run and short-run dynamics in the subsequent analysis.

Table 4: Results of Homogeneity Test

Model	**Swamy's Test Statistic**	**p-value**	**Decision on Slope Homogeneity**
Model 1	7.248	0.003	Reject H_0: Slopes are heterogeneous
Model 2	6.882	0.005	Reject H_0
Model 3	9.035	0.001	Reject H_0
Model 4	8.442	0.002	Reject H_0
Model 5	10.115	0.000	Reject H_0
Model 6	9.677	0.000	Reject H_0

Note: Null hypothesis (H_0): Slope coefficients are homogeneous across cross-sections (regions).

Test: Swamy (1970) Slope Homogeneity Test.

The homogeneity test results, based on Swamy's (1970) methodology, clearly reject the null hypothesis of slope homogeneity across all six model specifications. The p-values are highly significant in each case, indicating that the estimated slope coefficients vary meaningfully across regions. This finding suggests that the impact of institutional quality, industrial policy, and specialization on regional GDP per capita is not uniform throughout Morocco. As a result, it is more appropriate to employ an estimation technique that accommodates heterogeneous dynamics, such as the Mean Group (MG) or Pooled Mean Group (PMG) estimator, to capture both short-run heterogeneity and long-run equilibrium relationships across regions. This outcome supports the theoretical expectation that territorial disparities influence the effectiveness of policy levers and institutional structures.

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Table 5.1: Pedroni (1999) Cointegration Test Results

Test Statistic Type	Statistic Value	p-value	Cointegration Decision
Panel v-Statistic	2.311	0.010	Reject H_0 : Cointegration exists
Panel ρ-Statistic	-1.984	0.023	Reject H_0
Panel PP-Statistic	-3.127	0.001	Reject H_0
Panel ADF-Statistic	-2.844	0.004	Reject H_0
Group ρ-Statistic	-1.752	0.039	Reject H_0
Group PP-Statistic	-3.411	0.000	Reject H_0
Group ADF-Statistic	-2.936	0.002	Reject H_0

Note: Null hypothesis (H_0): No cointegration among variables. Pedroni test includes individual intercepts and trend components.

The results of the Pedroni (1999) cointegration test strongly indicate the presence of a long-run relationship among the variables in the panel. Both the within-dimension (panel) and between-dimension (group) statistics overwhelmingly reject the null hypothesis of no cointegration at the 1% and 5% significance levels. Specifically, the panel PP-statistic, panel ADF-statistic, and group PP- and ADF-statistics are all highly significant and negative, which confirms the existence of cointegration. These results reinforce the findings of the ARDL bounds test and further validate the assumption that institutional quality, industrial policy, and regional specialization are co-moving with regional GDP per capita over time. Consequently, these tests provide robust statistical justification for estimating long-run coefficients in the panel ARDL framework.

Table 5.2: Westerlund (2005) Cointegration Test Results

Statistic Type	Statistic Value	Robust p-value	Cointegration Decision
Gt	-3.942	0.008	Reject H_0: Cointegration exists
Ga	-2.781	0.021	Reject H_0
Pt	-3.517	0.010	Reject H_0
Pa	-2.603	0.030	Reject H_0

Note: Null hypothesis (H_0): No cointegration. The Westerlund test is based on structural dynamics and allows for cross-sectional dependence using robust p-values.

The results of the Westerlund (2005) cointegration test further confirm the presence of a long-run equilibrium relationship among the panel variables. All four test statistics (Gt, Ga, Pt, and

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Pa) reject the null hypothesis of no cointegration at conventional significance levels, with robust p-values below 5%. This suggests that the panel exhibits error-correcting behavior, meaning that deviations from the long-run path are systematically corrected over time. Unlike traditional residual-based tests, Westerlund's methodology accounts for heterogeneity and potential cross-sectional dependence, making it particularly suitable for regional-level analysis. The consistency of these results with those obtained from the Pedroni and bounds tests reinforces the validity of the long-run relationship linking institutional quality, industrial policy, regional specialization, and regional economic growth in Morocco. The test results are presented in Table 5.3.

Table 5.3: Westerlund and Edgerton (2007) Test

Statistic Type	**Statistic Value**	**Bootstrapped p-value**	**Cointegration Decision**
LM Statistic	4.872	0.019	Reject H_0: Cointegration exists
LM Statistic*	5.224	0.014	Reject H_0
Break Adjusted t	-3.331	0.007	Reject H_0
Break Adjusted LM	6.019	0.011	Reject H_0

Note: Null hypothesis (H_0): No cointegration. The Westerlund and Edgerton (2007) test accounts for structural breaks and cross-sectional dependence.

The results of the Westerlund and Edgerton (2007) cointegration test, which explicitly incorporates structural breaks and cross-sectional dependence, provide additional confirmation of a long-run relationship among the panel variables. All test statistics LM, LM*, break-adjusted t, and break-adjusted LM reject the null hypothesis of no cointegration at the 5% significance level based on bootstrapped p-values. This indicates that the variables maintain a stable long-run equilibrium even in the presence of possible structural changes, such as policy reforms or institutional shifts over the 2010–2024 period.

By allowing for breaks in both intercept and slope coefficients, this test enhances the robustness of the findings and validates the earlier cointegration results from Pedroni and Westerlund. It underscores that institutional quality, industrial policies, and regional specialization remain significantly co-integrated with regional economic growth over time, despite potential shocks or regime shifts in Morocco’s economic environment.

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4. Empirical Results

The empirical results section presents the outcomes of econometric estimations designed to evaluate the long- and short-term relationships between institutional quality, industrial policy, regional specialization, and regional economic growth in Morocco over the period 2010–2024. Utilizing the Pooled Mean Group (PMG) estimator within the ARDL framework, the analysis accounts for both heterogeneity across regions and the dynamics of adjustment toward long-run equilibrium. Prior diagnostic tests, including unit root, cointegration, and homogeneity assessments, confirmed the appropriateness of this methodology.

The following tables and interpretations offer robust empirical evidence to support the theoretical proposition that territorialized and institutionally grounded policies are crucial levers for fostering inclusive regional development. The results are given in Table 6.1.

Table 6.1: Panel Long-Term Estimators

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Institutional Quality	0.284***	0.261***	0.318***	0.276***	0.293***	0.307***
Industrial Policy	0.201**	0.224**	0.198**	0.217**	0.208**	0.221**
Regional Specialization	0.143*	0.159*	0.134*	0.147*	0.151*	0.162*
Constant	-1.873**	-1.691*	-2.014**	-1.808**	-1.755**	-1.933**
Hausman Test (p-value)	0.419	0.367	0.458	0.489	0.405	0.430

Note: ***p < 0.01, **p < 0.05, *p < 0.10, Estimator:PMG-ARDL, Null hypothesis of Hausman test: PMG is efficient (accept H_0 if p > 0.05).

The long-term estimation results from Table 6.1 reveal that institutional quality, industrial policy, and regional specialization all have statistically significant and positive effects on regional economic growth across the six model specifications. Institutional quality consistently exhibits the strongest long-run impact, with coefficients ranging from 0.261 to 0.318, suggesting that improvements in governance, rule of law, and administrative efficiency are crucial for promoting inclusive growth. Industrial policy variables also show robust positive effects, confirming that targeted sectoral interventions contribute to sustainable development at the regional level. Regional specialization, while slightly less influential, remains significant, underscoring the value of leveraging regional comparative advantages.

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The negative constant term likely reflects structural constraints in underperforming regions. Furthermore, the Hausman test p-values exceed the 5% threshold in all models, validating the use of the PMG estimator, which assumes homogeneous long-run relationships but allows for short-run heterogeneity across regions. These findings affirm the strategic importance of institutional and industrial levers in shaping long-term regional growth dynamics in Morocco. The results are presented in Table 6.2.

Table 6.2: Panel Short-Term Estimators

Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
ECT (Error Correction Term)	-0.435***	-0.418***	-0.446***	-0.429***	-0.439***	-0.451***
Δ Institutional Quality	0.091**	0.084**	0.097**	0.088**	0.093**	0.096**
Δ Industrial Policy	0.065*	0.072*	0.061*	0.069*	0.068*	0.071*
Δ Regional Specialization	0.042	0.039	0.046	0.041	0.043	0.045
Constant	0.213	0.197	0.224	0.208	0.216	0.221
R^2 (within)	0.431	0.447	0.452	0.439	0.444	0.458

Note: ***p < 0.01, **p < 0.05, *p < 0.10 , Estimator: PMG-ARDL , ECT: Error Correction Term (speed of adjustment toward long-run equilibrium)

The short-run estimation results in Table 6.2 highlight the dynamic nature of regional economic adjustments in Morocco. The error correction term (ECT) is negative and statistically significant across all models, with coefficients between -0.418 and -0.451, indicating a stable system where approximately 42–45% of deviations from long-run equilibrium are corrected within a year. This confirms a strong adjustment mechanism toward the long-run path. In the short term, institutional quality and industrial policy continue to exert positive and significant effects on regional GDP growth, although the magnitude is smaller compared to the long-run effects. The coefficient of regional specialization remains positive but statistically insignificant in the short-run, suggesting that while specialization contributes to long-term development, its immediate effects are less pronounced.

The relatively moderate R^2 values imply a fair explanatory power of the models for short-run fluctuations. Collectively, these findings demonstrate that policy interventions yield both immediate and enduring benefits, but structural and institutional reforms are particularly vital for sustaining long-term regional growth.

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5. Conclusions and Policy Recommendations

This study has investigated the intricate relationships between institutional quality, industrial policy, regional specialization, and regional economic growth in Morocco from 2010 to 2024. Drawing on an extensive literature base and employing robust panel econometric techniques, including ARDL bounds testing, Pedroni and Westerlund cointegration tests, and both long-run and short-run PMG estimations, the findings consistently confirm that improvements in institutional quality and targeted industrial strategies are significant determinants of regional economic performance. The presence of cointegration across all tests demonstrates a stable long-term equilibrium, while significant short-run adjustments validate the relevance of dynamic regional policies. These results align with global research underscoring the importance of governance and sectoral planning in regional development.

Institutional quality emerges as the most robust and consistent predictor of long-term regional growth across all models. This includes dimensions such as regulatory effectiveness, administrative transparency, and the enforcement of property rights, which collectively shape the business climate and investor confidence. The heterogeneity found in the effects across regions further highlights the necessity of a decentralized governance structure that accommodates local capacities and institutional contexts. Therefore, institutional reforms must go beyond central governance frameworks and actively empower subnational administrations through capacity-building, fiscal decentralization, and participatory governance models. These findings echo those of Rodríguez-Pose (2013) and Charron et al. (2014), who argue that regional institutions are not merely administrative extensions of the state but essential levers of development.

Industrial policy also plays a significant role in shaping both long-term trajectories and short-term growth accelerations, particularly when aligned with regional strengths and innovation ecosystems. The positive short-run effects of industrial policy suggest that targeted incentives, public-private partnerships, and support for SMEs can yield immediate productivity gains. However, these effects are significantly enhanced when integrated within a broader institutional framework that ensures coordination, accountability, and adaptive learning. Furthermore, the marginally significant yet positive role of regional specialization points to the untapped potential of place-based strategies that align policy interventions with sectoral and geographic comparative advantages. This is in line with the new structural economics and smart specialization literature (Lin, 2012; Foray, 2015), which advocate tailoring development policies to the specificities of local production systems.

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In light of these findings, several policy recommendations emerge. First, Morocco should prioritize regional institutional strengthening through legal reforms, digital governance, and professionalization of local public service. Second, industrial policy should be territorially grounded, with regional development agencies playing a more strategic role in designing and implementing innovation and cluster strategies. Third, a coherent framework for regional specialization must be adopted, emphasizing skills development, research infrastructure, and regional value chains. Finally, cross-sector coordination and policy evaluation mechanisms should be institutionalized to ensure that short-term gains translate into sustainable, inclusive growth. By integrating these levers, Morocco can move toward a more equitable and territorially balanced growth model, aligned with its broader vision of economic transformation and social cohesion.

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