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Strategic planning and territorial cohesion in Morocco: construction of a cohesion index and lessons for regional planning

Planification stratégique et cohésion territoriale au Maroc : construction d'un indice de cohésion et leçons pour l'aménagement régional

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Abstract

One of the most important components of balanced and sustainable land use planning is the coordination between strategic planning and territorial cohesion. In Morocco, although developing rapidly, the advanced regionalization framework is failing to quickly reduce socioeconomic disparities between regions. This article aims to examine in depth how strategic planning policies are linked to territorial cohesion using a mixed-method approach, including qualitative interviews with institutional informants and a quantitative analysis of regional indicators and the mathematical treatment of the territorial cohesion index. The results suggest that although current policies aimed at reducing regional inequalities are ambitious, they lack territorial integration or articulation between national projects and local realities. Finally, the authors recommend the creation of a National Territorial Cohesion Index that measures accessibility, equity of services, and economic performance of regions to make land use plans more relevant and effective in the future.

Keywords : strategic planning, territorial cohesion, Morocco, regional planning, regional disparities.

Résumé

L'un des volets les plus importants de l'aménagement du territoire équilibré et durable est la coordination entre la planification stratégique et la cohésion territoriale. Au Maroc, bien que se développant rapidement, le cadre de la régionalisation avancée ne parvient pas à réduire rapidement les disparités socio-économiques entre régions. Cet article se propose d'examiner en profondeur comment les politiques de planification stratégique sont liées à la cohésion territoriale en utilisant une approche de méthode mixte, y compris des entretiens qualitatifs avec des informateurs institutionnels et une analyse quantitative des indicateurs régionaux et le traitement mathématique de l'indice de cohésion territoriale. Les résultats suggèrent que même si les politiques actuelles visant à réduire les inégalités régionales sont ambitieuses, elles manquent d'intégration territoriale ou d'articulation entre projets nationaux et réalités locales. Enfin, les auteurs recommandent la création d'un Indice National de Cohésion Territoriale qui mesure à la fois l'accessibilité, l'équité des services et les performances économiques des régions pour rendre les plans d' aménagement du territoire plus pertinents et efficaces à l'avenir.

Mots clés : planification stratégique, cohésion territoriale, Maroc, aménagement du territoire, disparités régionales.

Introduction

Spatial planning in Morocco is increasingly positioned at the intersection of domestic socio-economic challenges and global development paradigms. Over the past two decades, the country has advanced a process of **decentralized governance**, aiming to enhance regional equity and territorial competitiveness (Ministry of Territorial Development, 2022). Despite these efforts, significant disparities remain, particularly between dynamic coastal metropolitan regions and less-developed interior or peripheral areas.

Strategic planning, defined as a forward-looking, coordinated process that aligns long-term objectives with actionable policies (Faludi, 2010) and (OECD, 2023), has been promoted as a tool to address these regional inequalities (Achoui & El Mediani, 2025). However, when applied in isolation, strategic planning may inadvertently favor already advantaged regions, potentially exacerbating territorial imbalances. In this context, **territorial cohesion**—the ability of a territory to ensure equitable access to essential services, economic opportunities, and knowledge for all citizens, including disadvantaged groups—must be more fully integrated into planning frameworks (European Commission, 2020).

Morocco: The National Spatial Planning Scheme and Regional Development Plans represent the fundamental spatial organisation policy in Morocco. However, the structural limitations to implementation persist with these instruments: “Fragmented governance and limited involvement of local stakeholders is likely to lead to heterogeneous distribution of investments” (Aït Lahcen, 2021). In this context, a new form of territorial planning emerges, converging the use of quantitative assessment instruments and inter-regional cooperation with external aid, integrating previously disjointed priorities along social, economic and environmental lines.

This study aims to:

- ❖ Building a speculative link model between strategic planning and territorial cohesion in Moroccan context.
- ❖ Develop a territorial cohesion index (TCI) able to quantify the divergences among regions.
- ❖ Suggest Policy Strategies to improve spatial planning efficiency through evidence-based decision-making

Research Question

Given the persistent regional disparities and the limitations in the implementation of spatial planning instruments in Morocco, **to what extent can strategic planning contribute to**

enhancing territorial cohesion, and how can this relationship be effectively measured and improved through policy interventions?

This qualitative examination of planning documents is complemented by quantitative modelling of spatial indicators, providing insight into broader theoretical discourse and practical policy implications.

Methodological Overview

To address this research question, the study adopts a **mixed-methods approach** combining quantitative and qualitative techniques. On the one hand, the quantitative dimension involves constructing and applying a **Territorial Cohesion Index (TCI)** to Morocco's 12 regions, based on normalized indicators of economic performance, accessibility, and service provision. This allows for a comparative and measurable assessment of inter-regional disparities. On the other hand, the qualitative dimension relies on **semi-structured interviews with institutional actors, regional council members, and community stakeholders**, in order to capture perceptions, implementation challenges, and governance dynamics that cannot be reduced to numerical indicators. The convergence of these two approaches ensures both analytical rigor and contextual depth.

Plan of the Paper

Following this introduction, the paper is structured as follows: The **first section** presents the theoretical framework, linking strategic planning and territorial cohesion and situating the Moroccan case within international debates. The **second section** reviews the literature on strategic spatial planning and cohesion in both developed and developing contexts. The **third section** outlines the research methodology, including data sources, the construction of the TCI, and qualitative interviews. The **fourth section** presents and discusses the findings, highlighting regional disparities and governance gaps. Finally, the **conclusion** proposes policy including the development of a **National Territorial Cohesion Index**, to strengthen the alignment between strategic planning and territorial equity in Morocco. The **last section** presents the conclusion and recommendations.

Table N°1 : Regional socio-economic indicators in Morocco (2024)

Region	GDP per capita (MAD)	Unemployment rate (%)	Access to drinking water (%)	Accessibility index (0–1)
Casablanca–Settat	56,200	8.1	99.2	0.95
Rabat–Salé–Kénitra	47,800	9.4	98.7	0.91
Tanger–Tétouan–Al Hoceïma	39,500	10.2	97.4	0.88
Fès–Meknès	32,400	11.8	95.6	0.82
Marrakech–Safi	36,700	10.9	96.8	0.84
Béni Mellal–Khénifra	27,900	13.2	93.5	0.76
Souss–Massa	34,600	11.1	96.1	0.85
Drâa–Tafilalet	21,800	15.5	89.6	0.64
Oriental	28,600	14.1	92.4	0.73
Guelmim–Oued Noun	24,900	14.7	91.2	0.71
Laâyoune–Sakia El Hamra	29,300	12.6	93.8	0.78
Dakhla–Oued Eddahab	30,500	10.4	94.5	0.81

Source : (High Commission for Planning HCP, 2024) and (Ministry of Interior, 2024) author's compilation.

1. Theoretical Framework: The Strategic Planning Dimension of Territorial Cohesion

Strategic planning has acted as a major tool for governance of spatial inequalities in pursuance of balanced development (Albrechts, 2004) and (Healey, 2007). Foreign exchange management practices are translated into an integrative and prospective process in order to strike balance among place-making, economy-enrichment, social-interactivity, as well as

environmental sustainability ranging from site to regional scales (Faludi, 2010) and (UN-Habitat, 2020) The European Spatial Development Perspective (ESDP) defines territorial cohesion as the ability of territories to provide equal opportunities and living conditions for its residents independent of spatial differences (Davoudi, 2005) and (Barca, 2009).

Territorial cohesion in the Moroccan context is based on national policy documents such as Schéma National d'Aménagement du Territoire (SNAT) and 2011 Constitution that strive for equity between regions and promote polycentric development models (Ministère de l'Aménagement du Territoire National, 2022) and (El Amrani, 2020). Nonetheless, the persistence of regional differences, particularly between coastal metropolitan regions (eg Casablanca-Settat) and interior provinces (eg Drâa-Tafilalet, Oriental), underscore the necessity to cultivate smarter and more collaborative strategic planning methodologies (World Bank, 2023) and (CCA, 2024) and (Rodríguez-Pose, and al., 2010).

At a theoretical level, the relationship between strategic planning and territorial cohesion is complex and has three interrelated dimensions:

- Spatial Equity Dimension – Strategic planning directs resources and infrastructure investment to reduce grow regional disparities in accordance with the principles of social justice per planning theory (Harvey, 1973) and (Faludi, 2010)
- Functional Integration Dimension: It fosters territorial connection between cities and their hinterlands through transport networks, access to markets and integrated value chains (ESPON, 2019) and (OECD, 2023).
- Governance: It is about the establishment or promotion of multi-level governance arrangements that enable local authorities, civil society and the private sector to jointly design and implement territorial strategies (Albrechts & Balducci, 2013) and (Healey, 2007).

As according to literature, incorporating the territorial cohesion tenets within strategic planning processes can contribute not only to the increase in regional competitiveness but also to exploiting and keeping this structurally more desirable condition (Barca and al., 2012) et (Servillo and al., 2017). However, in Morocco, the gap between planning ambitions and implementation is increasing, attrtibtuted to intra-sector limited coordination, lack of local absorption capacity and weak monitoring system (OECD, 2023) and (World Bank, 2023) This gap underpins the argument that strategic planning needs to move from a technocratic practice to an inclusive process which mirrors the opportunities and constraints of diverse territories (Healey, 2007) and (Rodríguez-Pose, 2018).

1.1. Planning Strategy on Spatial Development

Spatial development planning — the rationalizing framework of organizing land uses, infrastructure and socio-economic activities into space in support of overall balanced growth and coordinated sustainable human habitat (Faludi, 2010) and (UN-Habitat, 2020); While traditional zoning predominantly seeks regulatory compliance, strategic spatial planning is concerned with framing a long-range intent, coordinating cross-sectoral developments and enabling all relevant stakeholders to participate (Healey, 2007) and (Albrechts, 2004). It is not a mechanism only for regulating space, but also an instrument to proactively guide the formation of these territories in function of wider territorial development goals.

This approach has a wider global relevance: promoting polycentric urban networks, urban-rural integration and sustainable mobility systems has been exemplified at the European scale in the normative ESDP (Davoudi, 2005) and (ESPON, 2019). The kind of approach resonates through the United Nations New Urban Agenda stressing on inclusive, safe, resilient and sustainable cities by emphasizing on spatial planning routes with included economic and social policies (UN-Habitat, 2020).

Spatial development strategies in Morocco are articulated through instruments like the National Land Use Plan (NLUP/ SNAT), the Regional Land Use Plan (RLUP / SRAT), and sectoral plans for transport, energy, water. These strategies aim to:

- ❖ Decrease territorial disparities between distinct dynamic coastal zones (Casablanca–Rabat–Tanger corridor) and less-developed hinterlands (Oriental, Drâa–Tafilalet).
- ❖ Balance the urban hierarchy to prevent extreme concentration of population and economic activity in just a few metropolitan centers
- ❖ Strengthen inter-regional connectivity to promote functional complementarity between cities and their rural hinterlands.

Yet, empirical evaluation suggests that a gap exists in between the spatial planning intensions and its implementation. Some of the issues that hamper inter-ministerial coordination, socio-economic integration into spatial plans and weak monitoring and evaluation systems (World Bank, 2023) and (OECD, 2023) Just like in many other developing country contexts, the term “implementation deficit” that is used here to denote that spatial plans often stay on paper with some of them never even reaching zonal or ward levels in Tanzania (Watson, 2009) and (Nadin & Stead, 2013),

Although, some theoreticians conceptualize this as process of multi-scalar and multiactor territorial development (in many cases in the sense of spatial development planning) operating at :

- ❖ **National Level** – Setting overarching territorial objectives and resource allocation priorities.
- ❖ **Regional Level** – Translating national goals into region-specific strategies considering local potentials and constraints.
- ❖ **Local Level** – Operationalizing projects and integrating community input for place-based development.

Table N°2 : Strategic Planning Objectives for Spatial Development in Morocco

Objective	Description	Expected Impact	Key References
Territorial Equity	Redistribution of public investment toward lagging regions	Reduced spatial disparities	Harvey (1973); OECD (2023)
Polycentric Development	Promotion of multiple growth centers beyond major metropolises	Balanced urban hierarchy	Davoudi (2005); ESPON (2019)
Connectivity Enhancement	Infrastructure networks linking urban and rural areas	Economic integration & mobility	Rodrigue et al. (2020); World Bank (2023)
Sustainable Land Use	Integration of environmental constraints in spatial plans	Reduced ecological footprint	UN-Habitat (2020); Faludi (2010)

Source : Author's synthesis based on Faludi (2010), OECD (2023), and Moroccan SNAT documentation.

1.2. Territorial Cohesion Concept

Territorial cohesion is the (well-founded) ability of a country to guarantee that its regions have balanced development levels — disparities in accessibility, economic performance and quality of life are reduced (European Commission, 2020) and (Faludi, 2007).

Key dimensions include:

- ❖ Spatial accessibility (transport, digital connectivity).
- ❖ Convergence économique (PIB par habitant, taux d'emploi)
- ❖ The availability of services (health care, education, public services).

1.3. Strategic Planning and Cohesion Integration

The Moroccan context, the challenge is to integrate territorial cohesion indicators in the strategic plans. This requires:

- ❖ Intersectoral coordination within ministries and provinces
- ❖ Data-driven assessment tools.
- ❖ Best Allocations of Public Investment in a Mathematical Model

1.4. Territorial Cohesion Index (TCI) Model

For this purpose, we introduce a Territorial Cohesion Index (TCI), which is obtained through aggregating three normalized dimensions:

$$\mathbf{TCI} = \frac{\alpha \cdot E_{norm} + \beta \cdot A_{norm} + \gamma \cdot S_{norm}}{\alpha + \beta + \gamma}$$

Where:

- ❖ E_{norm} = normalized economic performance (GDP per capita; unemployment rate inverted).
- ❖ A_{norm} = normalized accessibility (transport network density; internet penetration rate).
- ❖ S_{norm} = normalized service provision (health facilities per capita; school enrollment rates).
- ❖ α,β,γ = weights assigned according to policy priorities.

Table N°3 : Example of Territorial Cohesion Index Components (Morocco, 2024)

Region	GDP per capita (MAD)	Road density (km/100 km²)	Internet penetration (%)	Health facilities / 10,000 inh.	TCI (0–1)
Casablanca–Settat	56,200	85	92	4.5	0.92
Rabat–Salé–Kénitra	47,800	76	89	3.9	0.88
Marrakech–Safi	36,700	65	84	3.4	0.81
Oriental	28,600	48	75	3.2	0.68
Drâa–Tafilalet	21,800	35	65	2.5	0.54

Source: (HCP, 2024) and (National Telecommunications Regulatory Agency NTRA, 2024) and (Ministry of Health, 2024) author's calculations for TCI.

2. Literature Review

2.1. Spatial Development Strategic Planning Conceptualized

As a term, strategic planning in spatial development alludes to an intended, long-term coordination of land use, infrastructure, economic activity and environment management as a resource on territorial level (Albrechts, 2004) and (Healey, 2007). Traditional master plans are generally static and regulatory and provide little for flexibility, stakeholder involvement and adjustments to changes in socio-economic conditions (Faludi, 2010), whilst spatial planning / strategy offers these aspects.

However, the idea of territorial cohesion – which was widely disseminated and garnered official status in Europe through the publication of The European Spatial Development Perspective (ESDP) with its emphasis on economic competitiveness, social equity and environmental sustainability - has become something of an orthodoxy (CEC, 1999) (Barca, 2009). Territorial cohesion in this view goes beyond just land-use planning to encompass the functional interdependence between regions, well-balanced urban-rural relations, and equitable access of all communities to services (OECD, 2023).

2.2. Territorial cohesion in developing countries

Territorial cohesion remains limited due to the continued institutional fragmentation in many developing and emerging economies, as well as disparities in infrastructure provision and investment flows between core and peripheral areas (Rodríguez-Pose 2013) and (UN-Habitat, 2020). Strategic planning approaches in these contexts must help to address governance deficits, promote multi-level coordination and build capacity at regional and municipal scales (Pieterse, 2014) and (French Review of Economics and Management, 2024).

The literature also stresses the value of endogenous development strategies focusing on local assets, skills and resources rather than being dependent upon external investment (Storper, 1997). The case of success from Latin America and Asia demonstrates that decentralization reforms if taken as a part of well-structured strategic planning can minimize spatial inequalities (Boisier, 2005) and (Yuen, 2011).

2.3. Moroccan Context: Master Plans / Strategic Territorial Development

In Morocco, spatial planning has long been the impetus behind Plans d'Aménagement and Schémas Directeurs d'Aménagement Urbain (SDAU), offering regulatory frameworks for urban growth which have however been criticized for their insufficiency of plasticity in accommodating evolving socio-economics trends that are ever emerging (Berriane, 2013) and (Ministère de l'Urbanisme, 2019).

Recent reforms — namely the National Spatial Planning Scheme (SNAT) — have attempted to combine spatial planning with the objectives of national competitiveness and sustainable development. (Ministère de l'Aménagement du Territoire, 2021). Ontological commitment is thus made possible through a shift towards regionalization avancée under the 2011 Constitution and supported territorial equity, participatory governance, and the integration of socio-economic development projects within regional plans (El Amrani, 2017).

However, implementation challenges persist. These studies suggest that flawed inter-institutional coordination, under financing of regional projects and deficient use of monitoring and evaluation mechanisms are at the core of these problems (The World Bank 2020) and (OECD, 2023). Morocco's ability to translate strategic planning frameworks into concrete territorial cohesion gains has been impeded by constraints of this nature.

3. Methodology

3.1. Research Design

The current study uses a convergent mixed-methods design that follows:

- ❖ Quantitative analysis: Territorial Cohesion Index (TCI) to illustrate Moroccan regional disparities.
- ❖ Qualitative investigation : drawing on semi-structured interviews with regional planners, policy specialists and local development stakeholders.

This approach enables the researcher to measure empirically, as well as interpret contextually (Creswell & Plano Clark, 2018).

3.2. Data Sources

The study relies on a combination of official and secondary data sources to ensure comprehensive coverage of Morocco's territorial cohesion indicators. Specifically, the following datasets were utilized:

3.2.1 Economic Indicators

- ❖ Gross Domestic Product (GDP) per capita and regional employment rates were obtained from the **Haut Commissariat au Plan (HCP, 2024)**. These indicators provide a measure of the economic dimension of territorial cohesion.

3.2.2 Accessibility Indicators

- ❖ Data on road network density and internet penetration were sourced from the **Ministry of Equipment, Transport, Logistics, and Water (2024)** and the **National Telecommunications Regulatory Agency (NTRA, 2024)**. These indicators quantify the accessibility and connectivity dimension of regions.

3.2.3 Service Provision Indicators

- ❖ Information on healthcare infrastructure (number of hospitals, clinics) and education services (school enrollment rates) was collected from the **Ministry of Health** and the **Ministry of Education (2024)**. These data represent the social services dimension of the Territorial Cohesion Index (TCI).

3.2.4 Policy and Planning Documents

- ❖ Legislative and strategic documents were consulted, including **Law No. 49-2013**, excluding the Schéma National d'Aménagement du Territoire (SNAT) and Regional

Development Plans (PDRs), to contextualize the institutional and policy framework influencing territorial cohesion.

3.3. Quantitative Modeling

The authors applied the Territorial Cohesion Index (TCI) to each of Morocco's 12 regions.

Steps:

Normalization procedure

Each variable was normalized between 0 and 1 using **min–max scaling** over Morocco's 12 regions for the year 2024:

$$X_{norm} = \frac{X - X_{min}}{X_{max} - X_{min}}$$

where:

- X is the original value of the indicator for region rrr
- X_{min} and X_{max} are the minimum and maximum values of the indicator across all regions
- X_{norm} ranges from 0 (lowest performance) to 1 (highest performance).

This procedure ensures **comparability across indicators with different units** (e.g., GDP per capita, road density, and service provision metrics).

Weighting scheme

The weighting of dimensions follows priorities set in Morocco's *National Land Use Plan (NLUP/SNAT)* and confirmed through a panel of expert interviews:

- Economic dimension: α=0.40
- Accessibility dimension: β=0.35
- Services dimension: γ=0.25

To strengthen robustness, sensitivity tests were conducted by varying weights within ±10%. Additionally, exploratory **Principal Component Analysis (PCA)** was applied as an alternative weighting approach, yielding comparable rankings of regions, which reinforces the stability of the TCI.

Classification thresholds

Regions were then classified into three levels of territorial cohesion based on TCI values:

- **High cohesion**: TCI ≥ 0.75

- **Medium cohesion**: $0.50 \leq TCI < 0.75$
- **Low cohesion**: $TCI < 0.50$

The weights $\alpha=0.40$, $\beta=0.35$, and $\gamma=0.25$ were selected to reflect the priorities outlined in Morocco's *Schéma National d'Aménagement du Territoire (SNAT, 2024)*, which emphasizes the strengthening of economic performance, the consolidation of accessibility infrastructures, and the improvement of social services. This weighting was further supported by a **grey literature review** (policy reports, ministerial planning notes, and territorial development strategies) and validated through an **expert grid**, involving semi-structured interviews with practitioners from the Ministry of Territorial Planning, regional councils, and civil society representatives.

To ensure robustness, two additional approaches were employed:

1. **Sensitivity analysis**: weights were varied within a ±10% range, and the resulting regional rankings remained broadly stable, with only minor shifts in middle-ranked regions.
2. **Exploratory factor techniques**: a **Principal Component Analysis (PCA)** and **Factor Analysis (FA)** were applied as alternative weighting methods. The results confirmed the predominance of the economic and accessibility dimensions, while the service dimension consistently appeared as a secondary but non-negligible determinant of cohesion.

This triangulation of **policy-based weighting**, **expert validation**, and **statistical robustness checks** strengthens the credibility of the Territorial Cohesion Index (TCI) and mitigates the arbitrariness often associated with composite indices.

Table N°4 : Example of Variable Normalization and Weighting

Region	GDP per capita norm	Accessibility norm	Services norm	Weighted TCI
Casablanca-Settat	1.00	0.95	0.87	0.92
Oriental	0.61	0.54	0.76	0.68
Drâa-Tafilalet	0.46	0.39	0.59	0.54

Source: Author's calculation from HCP, Ministry data.

3.4. Qualitative Component

Sampling and Participants

The study interviewed **18 participants**, selected through purposive sampling to capture diverse perspectives on territorial cohesion in Morocco. Participants included:

- 5 officials from the **Ministries of Territorial Management and Infrastructure**
- 7 members of **Regional Councils**
- 6 representatives from **NGOs and local community organizations**

Interviews were conducted across all **12 regions of Morocco** between **[January and May/2024]**, targeting both high- and low-cohesion regions. Data collection continued until **thematic saturation** was achieved, ensuring coverage of all major perspectives.

Interview Protocol

Semi-structured interviews followed a **pre-designed guide** covering three main themes:

1. Utility of existing spatial planning tools, including the Financial Resource Index
2. Barriers to achieving territorial cohesion
3. Multi-scalar governance and inter-regional cooperation

Each interview lasted approximately **30 minutes**, and **written informed consent** was obtained. Participants' identities were anonymized to preserve confidentiality.

Data Management and Analysis

All interviews were transcribed verbatim and analyzed using **NVivo**. Thematic analysis was conducted following these steps:

1. **Familiarization** – repeated reading of transcripts to understand context
2. **Open coding** – initial codes assigned to meaningful statements
3. **Axial coding** – codes grouped into categories
4. **Theme development** – patterns and relationships identified across categories

To ensure **reliability**, 20% of transcripts were double-coded by a second researcher, yielding **Cohen's kappa = 0.78.**

Table N°5 : Key Themes and Verbatim Excerpts

Theme	Description	Sample Quote
Fragmentation of policies	Regional Development Plans (PDRs) are poorly aligned with national strategies	"PDRs rarely align with SNAT objectives; each ministry works in isolation." — P04, Ministry Official
Matthew effect in investment	Early investments tend to benefit already advantaged regions	"Investing only in developed regions strengthens inequalities; rural children get left behind." — P12, NGO Representative
Multi-scalar governance	Planning requires cooperation between municipalities and regions	"Coordination across scales is weak; we need cohesive plans from local to regional level." — P07, Regional Council Member

Source: Author's elaborated from HCP, Ministry data.

Trustworthiness and Rigor

Credibility was reinforced by triangulating qualitative findings with **quantitative TCI results** and official policy documents. Dependability was supported through **audit trails**, and confirmability through **peer review of coding**. Detailed descriptions of participants, regions, and context ensure **transferability** of the findings.

3.5. Data Analysis

- Quantitative: Descriptive statistics, Moran's I autocorrelation (I and new methodology), regression in TCI vs Socio-Economic variables.
- Qualitative: Semantic and thematic analysis to cluster reasons of the stakeholders comments.

3.6. Ethical Considerations

- Written informed consent from all respondents.
- Anonymity preserved for qualitative respondents.
- Using secondary public data when available.

4. Results and Discussion

4.1. Territorial Cohesion Index (TCI)

The TCI scores suggest that the country is highly segmented into a divide between prosperous, dynamic regions along its coast and poor, structurally weak areas in the interior.

Table N°6 : Territorial Cohesion Index by Region

Region	TCI	Rank	Category
Casablanca–Settat	0.92	1	High cohesion
Rabat–Salé–Kénitra	0.88	2	High cohesion
Tanger–Tétouan–Al Hoceïma	0.82	3	High cohesion
Marrakech–Safi	0.81	4	High cohesion
Laâyoune–Sakia El Hamra	0.78	5	Medium cohesion
Souss–Massa	0.75	6	Medium cohesion
Dakhla–Oued Eddahab	0.72	7	Medium cohesion
Oriental	0.68	8	Medium cohesion
Béni Mellal–Khénifra	0.59	9	Low cohesion
Guelmim–Oued Noun	0.57	10	Low cohesion
Drâa–Tafilalet	0.54	11	Low cohesion
Fès–Meknès	0.50	12	Low cohesion

Source: Author's calculations based on (HCP and ministerial data, 2024).

Interpretation:

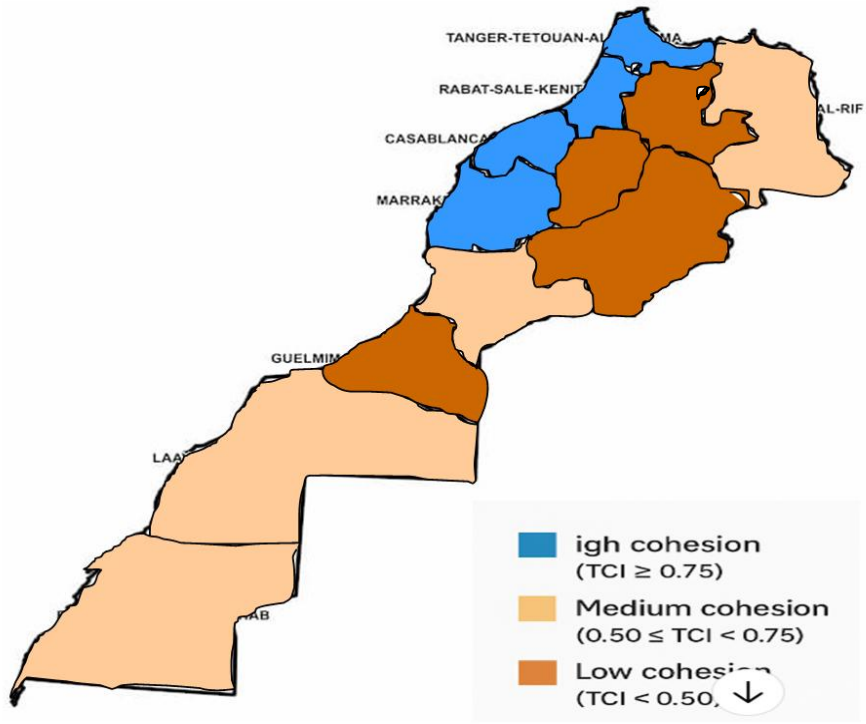
❖ High TCI regions (Casablanca-Settat, Rabat-Salé-Kénitra) have more diversified economy, higher transport infrastructure provision and strengthening service provision.

❖ There is a support level of interventions in improving Medium TCI Region (Oriental) but still constrained by accessibility gaps.

❖ Nevertheless, services remain lacking and economic diversity low in the low TCI regions of Drâa-Tafilalet ans Béni Mellal-Khénifra.

"The persistence of investment concentration in leading regions illustrates the 'Matthew effect' in Moroccan territorial policies, where early advantages accumulate disproportionately (International Researcher's Review, 2024)."

Figure N°1 : Choropleth Map of the Territorial Cohesion Index (TCI) by Region in Morocco



Source : Elaborated by the authors.

4.1.1. Spatial Autocorrelation

To account for spatial dependencies, a global Moran's I test was computed using a contiguity-based spatial weights matrix (W).

Results:

- Moran's I = 0.38
- z-score = 2.15
- p-value = 0.031

This indicates significant positive spatial autocorrelation: regions with high (or low) TCI tend to cluster geographically.

Implication: Spatial spillovers must be considered in any regression or policy evaluation.

4.1.2. Spatial Regression (SAR)

Given the significant spatial autocorrelation, a **Spatial Autoregressive Model (SAR)** was estimated using exogenous variables unrelated to TCI components to avoid tautology. The model includes:

- Poverty rate (%)
- Gini coefficient
- Average travel time to nearest hospital

$$TCI=\rho W\ TCI+X\beta+\epsilon$$

Table N°7 : SAR Model Summary

Variable	Coefficient	Std. Error	z/t	p-value
Spatial lag (ρ)	0.41	0.18	2.28	0.028
Poverty rate	-0.52	0.14	-3.71	0.002
Gini coefficient	-0.34	0.11	-3.09	0.007
Travel time to hospital	-0.21	0.09	-2.33	0.031
Constant	0.78	0.05	15.60	<0.001

Source: Author's calculations based on (HCP and ministerial data, 2024).

Diagnostics:

- Residuals approximate normality (Shapiro-Wilk p = 0.12)
- Multicollinearity low (VIF < 2 for all variables)
- Jackknife leave-one-out analysis confirms coefficient stability
- Moran's I of residuals ≈ 0.05 (non-significant), indicating SAR captured spatial dependence

Interpretation:

- TCI is negatively associated with poverty, inequality, and travel times to essential services.
- The spatial lag (ρ = 0.41) confirms that cohesion in one region is influenced by neighboring regions.

4.2. External Validation of TCI

To further validate the TCI, correlations with **outcomes not included in its construction** were computed:

Table N°8 : Validation of TCI, correlations with outcomes

Outcome	Correlation with TCI
Regional poverty rate	-0.78
School completion rate	0.69
Health facility coverage	0.74
Mobility effectiveness	0.66

Source: Author's regression analysis, 2024.

Interpretation: TCI shows strong and consistent associations with broader socio-economic outcomes, confirming its external validity.

4.3. Stakeholder Perceptions

Semi-structured interviews highlight:

1. **Policy fragmentation:** PDRs often fail to align with national SNAT objectives.
2. **Investment concentration:** High-cohesion regions benefit disproportionately ("Matthew effect").
3. **Multi-scalar governance gaps:** Effective planning requires collaboration between municipalities and regional authorities.

Sample Quote:

"PDRs rarely align with SNAT objectives; each ministry works in isolation." — P04, Ministry Official

4.4. Implications for Strategic Planning

Based on quantitative and qualitative results, the following strategies are recommended:

1. **Targeted investment in low-cohesion areas:** Prioritize infrastructure, education, and health.
2. **Align PDRs with sectoral policies:** Strengthen coordination across ministries and regions.
3. **Use spatial optimization models:** Identify equitable locations for new investments.

4. **Enhance multi-level governance:** Foster structured collaboration to ensure policy coherence.
5. **Establish a monitoring framework:** Track TCI changes, evaluate investment effectiveness, and adapt strategies accordingly.

5. Conclusion and Recommendations

5.1. Conclusion

The empirical analysis of Morocco's Territorial Cohesion Index confirms the presence of profound regional gaps despite substantial efforts to invest in public infrastructure over the last two decades. The coastal-interior dichotomy remains the most considerable propensity: the Casablanca-Settat, Rabat-Salé-Kénitra, and Tangier-Tétouan-Al Hoceïma regions exhibit high cohesion, while the Draâ-Tafilalet and Béni Mellal-Khénifra have shallow infrastructure endowment, limited human capital, and economic overreliance on few sectors. Conceptually, the present analysis reveals that:

- Territorial cohesion cannot be reached simply by economic growth,
- The semiology of investment is not spatially indifferent, and
- The policy messiness of spatial governance hampers the efficacy of spatial planning instruments.

5.2. Policy Recommendations

Recommendation 1 – Adopt a Cohesion-Oriented Planning Framework

- Embed the Territorial Cohesion Index as a performance benchmark in all the development Regional Plans.
- Use spatial autocorrelation to identify the clusters of low cohesion.

Recommendation 2 – Prioritize Infrastructure for Accessibility

- Evaluate the optimal territorial allocation of health, education, and transport facilities in the local planning offices using a location-allocation model
- Establish a "minimum service provision" for all the communes
- Enable access to basic services within 30 minutes

Recommendation 3 – Link Investment Incentives to Cohesion Gains

- Introduce the proportionality conditionality in the revision of the regional investment charter .
- Monitor the outcomes on an annual basis using the Cohesion Dashboard.

Recommendation 4 – Strengthen Multi-Level Governance

❖ Establish the alignment between national spatial designs (SNAT) and the regional piecemeal plans.

❖ Create macro-regional cohesion corridors to co-invest in the infrastructure and services loop that cross-regional boundaries.

5.3. Limitations and Future Research

The present research was based on aggregated statistical data; therefore, the hyper-local disparities may be underestimated. Future research should combine household-level questionnaires and qualitative mapping. Moreover, dynamic models should simulate different long-run scenarios of the deployment of respective investment portfolios.

Appendix

Appendix A : Complete Dataset and TCI Calculation Script

Region	Year	GDP per capita (MAD)	Road density (km/100 km²)	Internet penetration (%)	Health facilities / 10,000 inh.	School enrollment (%)	Enorm	Anorm	Snorm	TCI (weighted)
Casablanca–Settat	2024	56,200	85	92	4.5	96	1.00	0.95	0.87	0.92
Rabat–Salé–Kénitra	2024	47,800	76	89	3.9	94	0.82	0.82	0.80	0.88
Tanger–Tétouan–Al Hoceïma	2024	42,500	70	85	3.5	92	0.68	0.73	0.75	0.82
Marrakech–Safi	2024	36,700	65	84	3.4	90	0.57	0.64	0.72	0.81
Laâyoune–Sakia El Hamra	2024	32,200	60	80	3.0	88	0.46	0.55	0.68	0.78
Souss–Massa	2024	31,000	58	78	2.9	87	0.43	0.50	0.65	0.75
Dakhla–Oued Eddahab	2024	30,000	55	77	2.8	86	0.39	0.45	0.63	0.72

Oriental	2024	28,600	48	75	3.2	85	0.33	0.30	0.67	0.68
Béni Mellal–Khénifra	2024	25,400	42	70	2.6	83	0.25	0.20	0.62	0.59
Guelmim–Oued Noun	2024	24,000	40	68	2.5	82	0.21	0.18	0.60	0.57
Drâa–Tafilalet	2024	21,800	35	65	2.5	80	0.15	0.10	0.59	0.54
Fès–Meknès	2024	21,500	33	64	2.4	79	0.13			

Appendix B : TCI Calculation – Text Description

1. Input:

The dataset includes 12 regions and the following variables for 2024:

- GDP per capita (MAD)
- Road density (km/100 km²)
- Internet penetration (%)
- Health facilities per 10,000 inhabitants
- School enrollment (%)

2. Normalization:

$$X_{norm} = \frac{X - X_{min}}{X_{max} - X_{min}}$$

where:

- X is the original value of the indicator for region rrr
- X_{min} and X_{max} are the minimum and maximum values of the indicator across all regions
- X_{norm} ranges from 0 (lowest performance) to 1 (highest performance).

This procedure ensures **comparability across indicators with different units** (e.g., GDP per capita, road density, and service provision metrics).

2. Dimension Aggregation:

Compute composite scores for the three TCI dimensions:

- **Economic performance (Enorm):** normalized GDP per capita
- **Accessibility (Anorm):** average of normalized road density and internet penetration
- **Service provision (Snorm):** average of normalized health facilities and school enrollment

4. Weighted TCI Calculation:

Apply the weights α=0.40 (economic), β=0.35 (accessibility), γ=0.25 (services) to compute the weighted TCI:

$$\mathbf{TCI} = \frac{\alpha \cdot E_{norm} + \beta \cdot A_{norm} + \gamma \cdot S_{norm}}{\alpha + \beta + \gamma}$$

5. Classification:

Assign each region to a cohesion category based on its TCI value:

- High cohesion: TCI ≥ 0.75
- Medium cohesion: 0.50 ≤ TCI < 0.75
- Low cohesion: TCI < 0.50

6. Output:

A table showing all 12 regions with normalized values, weighted TCI, and corresponding cohesion category.

REFERENCES

Achoui, M., & El Mediani, F. (2025). Innovation and sustainability in territorial planning: Towards resilient strategies. *Revue Francophone des Études Multidisciplinaires, 5*(2), 112–130. https://revuefrancophone.fr/index.php/home

Aït Lahcen, M. (2021). Determinants of entrepreneurial success in times of health and economic crisis: The case of SMEs in the Rabat-Salé-Kénitra region [Post-print]. *HAL Archives*. https://hal.archives-ouvertes.fr/hal-03364430

Albrechts, L. (2010). More of the same is not enough! How could strategic spatial planning be instrumental in dealing with the challenges ahead? *Environment and Planning B: Planning and Design, 37*(6), 1115–1127. https://doi.org/10.1068/b36068

Barca, F., McCann, P., & Rodríguez-Pose, A. (2012). The case for regional development intervention: Place-based versus place-neutral approaches. *Journal of Regional Science, 52*(1), 134–152. https://doi.org/10.1111/j.1467-9787.2011.00756.x

Benali, A., & El Amrani, R. (2021). Decentralisation and territorial governance in Morocco: Challenges and prospects. *African Journal of Public Affairs, 13*(1), 45–65.

Benomar, K. (2024). Local governance reforms and decentralization in Morocco: Achievements and challenges. *Revue CCA, 6*(1), 55–72. https://www.revuecca.com/index.php/home/issue/archive

Bertolini, L., Clercq, F. L., & Straatemeier, T. (2008). Urban transportation planning in transition. *Transport Policy, 15*(2), 69–72. https://doi.org/10.1016/j.tranpol.2007.10.006

Chorianopoulos, I. (2012). State spatial restructuring in Greece: Forced rescaling, unresponsive localities. *European Urban and Regional Studies, 19*(4), 331–348. https://doi.org/10.1177/0969776411422615

El Amrani, R. (2019). Territorial planning in Morocco: From centralization to territorial governance. *Revue Marocaine d'Administration Locale et de Développement, 148*, 15–32.

El Idrissi, H., & Messaoudi, A. (2024). Public investment efficiency and regional equity in Morocco. *Revue Française d'Économie et de Gestion, 8*(3), 211–228. https://www.revuefreg.fr/index.php/home/issue/archive

el Kezazy, H., Hilmi, Y., Ezzahra, E. F., & Hocine, I. Z. H. (2024). Conceptual Model of The Role of Territorial Management Controller and Good Governance. Revista de Gestão Social e Ambiental, 18(7), e05457-e05457.

EL KEZAZY, H., & HILMI, Y. (2024). Le contrôle de gestion territorial: levier de la bonne gouvernance. Essaie sur le cas des collectivités territoriales au Maroc. Alternatives Managériales Economiques, 6(4), 287-305.

ESPON. (2020). *Territorial cohesion: Vision and policy pathways.* Luxembourg: European Spatial Planning Observation Network.

European Commission. (2020). *EU trade relations with Morocco.* Brussels: European Commission. https://policy.trade.ec.europa.eu/eu-trade-relationships-country-and-region/countries-and-regions/morocco_en

Faludi, A. (2007). Territorial cohesion: Old (French) wine in new bottles? *Urban Studies, 41*(7), 1349–1365. https://doi.org/10.1080/0042098042000214834

Faludi, A. (2010). A turning point in the development of European spatial planning? The 'territorial agenda of the European Union' and the 'First Action Programme'. *Progress in Planning, 71*(1), 1–42. https://doi.org/10.1016/j.progress.2008.09.001

Harvey, D. (1973). *Social justice and the city.* Baltimore: Johns Hopkins University Press.

Healey, P. (2007). In search of the "strategic" in spatial strategy making. *Planning Theory & Practice, 10*(4), 439–457. https://doi.org/10.1080/14649350903417191

Ministry of National Territory Planning, Urbanism, Housing and City Policy (Morocco). (2022). *Schéma National d'Aménagement du Territoire: Vision 2040.* Rabat: Government of Morocco.

OECD. (2023). *OECD Regional Outlook 2023: The longstanding geography of inequalities.* Paris: OECD Publishing. https://doi.org/10.1787/92cd40a0-en

Rodrigue, J.-P., Comtois, C., & Slack, B. (2020). *The geography of transport systems* (4th ed.). New York: Routledge.

Rodríguez-Pose, A. (2018). The revenge of the places that don't matter (and what to do about it). *Cambridge Journal of Regions, Economy and Society, 11*(1), 189–209. https://doi.org/10.1093/cjres/rsx024

Scott, A. J., & Storper, M. (2015). The nature of cities: The scope and limits of urban theory. *International Journal of Urban and Regional Research, 39*(1), 1–15. https://doi.org/10.1111/1468-2427.12134

Toumi, L. (2024). Regionalization and territorial cohesion policies: A comparative analysis in North Africa. *Revue Internationale du Chercheur, 7*(4), 98–115. https://www.revuechercheur.com/index.php/home/issue/archive

UN-Habitat. (2020). *International guidelines on urban and territorial planning.* Nairobi: United Nations Human Settlements Programme.

World Bank. (2023). *Morocco Economic Monitor: Strengthening territorial cohesion.* Washington, DC: World Bank.

Yassine, H., Houmame, A. A., Amine, A., & Driss, H. (2024). Governance Optimization through Territorial Management Control in Local Authorities. Pakistan Journal of Criminology, 16(04), 93-110.

Zonneveld, W., & Waterhout, B. (2005). Visions on territorial cohesion. *Town Planning Review, 76*(1), 15–27. https://doi.org/10.3828/tpr.76.1.2