Demographic Transformations and Spatial Inequalities
In light of the 2024 Census in Morocco: The Case of Guelmim-Oued Noun and Laâyoune-Sakia El Hamra Regions

Amar Abatouy [1], Abdelhamid Jamour [2], Fulgencio Canovas Garcia [3]

[1] Línea de investigación: migraciones, sociedad y desarrollo. Universidad de Alméria abatouyamar@gmail.com

[2] Researcher in Human Geography, Ibn Zohr University, Agadir, abdelhamid.jamour@gmail.com

[3] Línea de investigación: migraciones, sociedad y desarrollo, Universidad de Alméria, fulgencio.canova@ual.es

Abstract

This study is situated within contemporary geographical literature that seeks to analyze socio-demographic transformations and evaluate spatial disparities in southern Morocco, particularly in the Guelmim-Oued Noun and Laâyoune-Sakia El Hamra regions. Its significance derives from the utilization of data from the 2024 General Population and Housing Census, which is regarded as an authoritative source providing an accurate quantitative database for analyzing trends in population structure, urbanization, and living conditions. The study begins with the concept of spatial justice, considering it a theoretical framework to explore the interaction between demographic changes and territorial policies, as well as the obstacles they pose to social cohesion and developmental equity.

An analytical-comparative methodology was employed to investigate the subject comprehensively, combining statistical metrics with qualitative evaluations of socio-spatial and geographical contexts. We aim to enhance the scientific discourse on the role of southern regions in the advanced regionalization initiative and to introduce new ideas to territorial planning that are grounded in fairness and spatial justice.

Introduction

Over the last few decades, the southern parts of Morocco have undergone significant changes, both in terms of population and urbanization, as well as the distribution of resources and services. Guelmim-Oued Noun and Laayoune-Sakia El Hamra are two places that are close to each other but have different levels of development. Together, they reveal complex changes in demographics and social space that require careful examination with new data. The 2024 General Population and Housing Census results provide a formal and serious quantitative database in this context. It enables us to tackle changes in demographic composition, living conditions, spatial disparities, and infrastructure. The importance of this study lies in its ability to go beyond simple descriptive indicators and examine regional differences, the integration of poles, and their relationship to socio-economic trends and public policies. Jean Brunet posits that "Comprehending human geography commences with the examination of the relationship between humans and space, through the observation of experimental data and the analysis of its processes." (Brunhes, 1910, p. 24). This methodology not only presents the statistical data from the 2024 General Population and Housing Census, but also examines the structural foundations of demographic and social realities through a geographical perspective. We use the field because it is related to economics, demography, and urban sociology. Our goal is to build a clear picture of the spatial differences and changes in the Guelmim Oued Noun and Laayoune Sakia El Hamra regions as part of the advanced regionalization project.

The scientific problem

Although the regions of Guelmim-Oued Noun and Laayoune-Sakia El Hamra are both located in southern Morocco and the Atlantic Desert, the 2024 General Population and Housing Census reveals significant differences in demographic, economic, and housing indicators between the two areas. This prompts substantial enquiries regarding the disparities between the two regions and their structural determinants, the constraints of the spatial distribution of wealth and services, and the influence of demographic dynamics on the perpetuation of spatial and social inequalities.

We formulated the following study problem based on our previous discussion: What are the most significant changes in the people and places of the Guelmim-Oued Noun and Laayoune-Sakia El Hamra regions, as indicated by the 2024 census? What accounts for the differences in education, housing, age structure, and economic activity across regions? Inspired by recent scientific progress indicating that spatial disparities are inextricably linked to socio-demographic, financial, and cultural factors, arising from complex historical and contextual interactions.

Scientific hypotheses.

To understand the changes that both sides went through, we came up with a few initial hypotheses that will be tested by looking at data from the general census of residents and housing:

1. The first hypothesis posits that the Laayoune-Sakia El Hamra region is experiencing rapid growth in population and urban development due to substantial investments and large-scale projects. The Guelmim-Oued Noun region, on the other hand, continues to struggle with basic services and social coverage.

2. The second hypothesis: The data show that education and economic activity indicators are very different between urban and rural areas in each region. This makes the space between the center and the edge even bigger.

3. The third hypothesis: The Guelmim-Oued Noun region displays significant multidimensional poverty, particularly in health and housing, reflecting insufficient spatial coordination in public policies.

Methodology and approach

This study utilizes a comparative analytical geographical methodology to elucidate the dynamics of spatial disparities between the two entities. It employs a quantitative method to amalgamate the examination of statistical indicators and their interpretation within their spatial contexts, utilising data from 2024. The General Population and Housing Census is a primary source of information that provides demographic, social, and economic indicators, helping to track changes in space at various levels, such as urbanization, socio-professional structure, distribution of basic services, and infrastructure vulnerability. Our analysis employed a descriptive analytical framework to elucidate patterns of spatial disparities through the convergence of structural and functional elements.

We were influenced by the mixed-methods approach in modern geography, which combines quantitative and qualitative viewpoints, as highlighted by Morange and Schmoll (2016). They assert that "The qualitative approach in geography represents a comprehensive methodological framework that encompasses all stages of research, from formulating the problem and questions to collecting and analyzing data, and ultimately presenting the results," while emphasizing the importance of the contexts of knowledge production. This trend helps people learn more about the different parts of social wear fields and how they affect them, which in turn changes them. In terms of pure image analysis, cities play a crucial role in shaping the spatial distribution of inequalities. They draw people, money, and jobs to them. Ciattoni said, "Urbanization is changing the world, and big cities, especially in the Global South, are showing a demographic trend that is speeding up and challenging the old urban model. This shows that we need more sustainable models." (Ciattoni, 2024) This necessitates that the geographical researcher examine the interplay between urbanization and spatial inequality, not solely from the perspective of concentration, but also in terms of the functions and

dynamics that sustain central hegemony and peripheral exclusion. In a critical geographical framework that draws on deep structures and breaks down the effects of maintaining differences in changing situations.

Methodology

To reach the goals listed above, we used a quantitative analytical approach that involved getting the following key indicators from the general census: For population and housing 2024 :

- Population structure: The way people are spread out by age, gender, and environment.
- Educational indicators: enrolment rates, illiteracy, and level of education;
- Economic indicators: economic activity, unemployment, and type of occupation;
- Housing conditions: type of housing, ownership, and access to services;
- Multidimensional Poverty Index: health, education, and living conditions.

We employed statistical processing tools, including relative calculations and percentage differences, as well as the technique of binary comparison between the indicators of the two regions and between the urban and rural environments within each region. This helped us organise the data to show structural inequalities, and we will also look into possible connections between them. This methodology, while fundamentally quantitative, accommodates socio-spatial analysis, facilitating a more profound understanding of the dynamics that reveal how public policies influence changes in age structure, patterns of internal migration, and factors of attraction and repulsion affect the stability or mobility of the population. From this perspective, we can inquire about the current population distribution between cities and rural areas in the Guelmim-Oued Noun and Laayoune-Sakia El Hamra regions.

Results

The results of this study are based on the data from the 2024 General Population and Housing Census, which provides accurate indicators on several dimensions: demographic, economic, educational, housing, and social. These indicators highlight apparent disparities between the regions of Guelmim-Oued Noun and Laâyoune-Sakia El Hamra, necessitating a thorough analysis of them in a changing spatial context.

1. The demographic distribution of the population by environment and gender

The demographic distribution of the population is an essential entry point for understanding spatial structures and analyzing the dynamics of population growth in relation to changes in the geographical environment. The quantitative dimensions of the population are inseparable from the spatial variables that frame their positioning in the area, whether in urban or rural settings, or in terms of gender-based disparities. The regions of Guelmim-Oued Noun and Laayoune-Sakia El Hamra are exemplary areas for exploring patterns of population distribution, due to the rapid structural transformations they are undergoing, which are linked to spatial planning policies, urbanization patterns, the limited natural resources, as well as the demographic peculiarities and distinctive state interventions in each region.

In this context, contemporary geographical literature confirms that "the distribution of the population in a given area is not only linked to natural constraints but is also a manifestation of the social, economic, and political dynamics that shape the area (Barthe, 2011, p. 44) "From this perspective, it is understood that statistical data, despite their importance, only gain their whole meaning when included in a synthetic reading that takes into account the structural backgrounds that reproduce spatial disparities within the territorial system. From this perspective, indicators of distribution by environment (urban versus rural) and gender are of central importance for understanding the disparities in density and spread, as well as for estimating the spatial and demographic balances that contribute to the reshaping of national and regional space. Moreover, analyzing these indicators requires placing them within their temporal and social context, as they indirectly reflect the effects of public policies, changes in age structure, patterns of internal migration, and the factors of attraction and repulsion that influence the stability or mobility of the population. From this standpoint, we can question the current distribution of the population between urban and rural areas in the regions of Guelmim-Oued Noun and Laâyoune-Sakia El Hamra. Moreover, what are the structural characteristics that distinguish the distribution by gender in the outlook for 2024?

Table 1: General population distribution by area and gender (2024)

The region	Total number	urban area	rural area	Males	Females
Guelmim-Oued Noun	417663	294894	122769	205831	211832
Laayoune-Sakia El Hamra	419169	407705	11464	213976	205193

Source: General Population and Housing Census 2024 results

Table 1 shows that the Laayoune-Sakia El Hamra region has a population of about 419,169 people, while the Guelmim-Oued Noun region has a population of about 417,663. This indicates that the two regions have similar total population shares; however, the table reveals that the population is distributed very differently between the two regions. The urban population ratio in the Laayoune region is 97.3%, while in Guelmim-Oued Noun it is only 70.6%. This shows that the urban style is more common in Laayoune because it is centered around major cities that are important for administration and strategy (like Laayoune, which is a regional hub). On the other hand, Guelmim-Oued Noun remains rural mainly, as traditional activities such as herding, limited farming, and mountain villages are still prevalent. In terms of gender, the index indicates a fairly even split between men and women in both regions. However, Guelmim-Oued Noun has a slight female advantage. It may be due to men moving to economic centers outside the region, which is supported by signs of economic activity and unemployment.

1. Age structure of the population

Age structure is a fundamental demographic element for comprehending population dynamics and trends in spatial transformation. It illustrates the number of active and dependent groups, which directly impacts the demand for social services such as education, healthcare, and housing, as well as the size of the labor force and the types of jobs available. It also provides an analytical approach to organizing the community and identifying short- and medium-term spatial planning needs. From this perspective, monitoring the age group distribution of the population in the Guelmim-Oued Noun and Laayoune-Sakia El Hamra regions can reveal distinct demographic characteristics, which are evident in the varying spatial conditions of urbanization, health, education, and living conditions.

The age structure is like a mirror that reflects how the population has grown over time, but it can also be used to predict how it will change in the future. Examining age structure transcends mere numerical categorization of the population; it necessitates an understanding of the contexts that generate and perpetuate this structure. This prompted researchers Christine and Guimard to assert that "the analysis of the population's age structure is not merely a statistical measure, but rather a tool for understanding patterns of urbanisation, migration, demographic transition, and their impact on spatial dynamics" (Zehgani & Guimard, 2015, p. 61). Reading the age distribution of the population can also indicate whether a region is experiencing a period of youth, demographic stability, or an aging population. So, the age distribution is not just a set of numbers; it is a complex way of examining how space, time, and people are interconnected. What will the age structure of the population in Guelmim-Oued Noun and Laayoune-Sakia El Hamra be like in 2024? Do the age indicators show that the population is getting younger, or do they show that the population is starting to become more mature or older? We look at the results in the following figure to answer this :

Figure 2: Population distribution by age group(2024)

Age group	Guelmim-Oued Noun(%)	Laayoune-Sakia El Hamra(%)
Under 15 years	26.7	28.7
From 15 to 59 years	59.3	62.7
60 years and above	14.1	8.6

Source: General Population and Housing Census 2024 results

Age data shows that side Laayoune-Sakia El Hamra has a higher percentage of children under 15 years of age (28.7% compared to 26.7% in the direction of Guelmim), indicating a stronger demographic and youth dynamic, this is confirmed by recording a relatively high percentage in the region, Guelmim-Oued Noun, for the age group 60 years and over (14.1% versus 8.6%)Which can be explained by immigration selectivity of active categories towards the most dynamic centers (Battisti, 2014, p. 113), which leads us to say the necessity

of adopting territorial approaches that respond to the needs of different age groups, especially youth in Laayoune and the elderly in Guelmim..

2. Indicators of illiteracy and education

Knowledge is a fundamental structural component in elucidating and comprehending the rationale behind territorial disparities.   It is associated with the capacity of individuals to recognize spatial transformations and possess the requisite tools to address them. Consequently, education transcends being merely an individual right or a vehicle for social advancement; it serves to stimulate human capital, enabling individuals to participate actively in sustainable development pathways. Additionally, being illiterate is not just the inability to read and write; it is also a sign of a more profound structural weakness that affects the socio-spatial structure and serves as a key indicator of human development and levels of spatial cohesion. It is like a mirror that shows how fair the space is. It clearly demonstrates how different people have varying access to knowledge and educational structures. This is what led researcher Yvette Veyret to say, "School is not just a place for indoctrination, but a space for equal opportunities and the production of citizens capable of spatial and social integration (Veyret, 2014, p. 97)."

Our examination of illiteracy rates and school attendance metrics, concerning gender, age group, and geographical region, aims not to provide descriptive data but to interrogate public policies in their spatial context, as they reveal the interplay of power and knowledge inherent in the geographical framework. (Claval, 2005, p. 56).

Table 3: Illiteracy rate and education indicators (2024)

The region	Without education(%)	Higher education(%)	Illiteracy(%)
Guelmim-Oued Noun	34.1	11.3	26.2
Laayoune-Sakia El Hamra	25.9	11.5	15.3

Source: General Population and Housing Census 2024 results

The Laayoune-Sakia El Hamra region has higher literacy rates (15.3% vs. 26.2%) and lower rates of non-schooling (25.9% vs. 34.1%), indicating that the education system is more effective, or at least that it is easier to access education. The percentage of people with higher education is similar (11.5% in Laayoune and 11.3% in Guelmim), but the difference in illiteracy shows that Guelmim-Oued Noun has an apparent cultural weakness. This difference is also related to the layout of the land. Guelmim is more spread out in the

countryside, which makes it more challenging to access schools. Laayoune, on the other hand, is more urban and has a central location.

3. Economic situation and activity

The activity rate, unemployment rate, and female labor market participation rate are all examples of economic activity indicators that can be used to measure the effectiveness of human resource utilization and the distribution of job opportunities. These indicators demonstrate how socio-economic dynamics and spatial factors interact, as the productive fabric varies across different regions. This analytical framework becomes particularly relevant when assessing the economic conditions in Morocco's southern regions. These indicators also raise doubts about the effectiveness of public policies in addressing spatial disparities and laying the groundwork for just and equitable development.

From this standpoint, Figure 3 serves as a central element for both quantitative and qualitative analyses of the economic conditions in the two regions, elucidating the origins of imbalance in the labor supply-demand relationship, while considering the unique structural characteristics of each region.

Figure 4: Activity and unemployment rates by region(2024)

The region	Unemployment (%)	female activity (%)	activity rate (%)
Guelmim-Oued Noun	31.5	12.7	37.4
Laayoune-Sakia El Hamra	26.6	19.4	46.4

Source: General Population and Housing Census 2024 results

The analysis of the table above reveals that the labor market dynamics differ between the Laayoune-Sakia El Hamra and Guelmim-Oued Noun regions. The Laayoune region had a higher economic performance, with an activity rate of 46.4%, compared to only 37.4% in Guelmim. This difference is due to several factors, but the most significant one is the structure of the economy in Laayoune, which comprises a diverse mix of institutions and sectors, including administrative, services, energy, and mineral sectors. This makes it relatively economically attractive. However, this relative advantage in the activity rate does not mean the absence of fragility, as the unemployment rate remains high in both regions, reaching its peak in Guelmim-Oued Noun (31.5%), which indicates the weak ability of this region to integrate the workforce, especially The youth category, which is why Economic growth does not effectively keep pace with demographic growth and does not meet the demands of the labor market. For whom? District gender: The number of women working is still low overall, but it is higher in Laayoune (19.4%) than in Guelmim (12.7%). The consequences of urbanization and the differences in cultural and institutional dynamics between the two regions reveal sure signs of relative openness in Laayoune towards the inclusion of women in economic activities, while acknowledging the

ongoing social and cultural barriers. This quantitative analysis aims to illuminate the figures while also reinterpreting these indicators through a holistic spatial lens, thereby fostering a deeper understanding of economic and social disparities and the inadequacies of public policies in facilitating comprehensive integration. Consequently, the documented disparities underscore the need to reassess development strategies to transcend sectoral approaches and implement an inclusive spatial policy grounded in equity, justice, and territorial effectiveness.

4. Housing quality and living conditions

Most researchers consider housing quality and living conditions as key indicators that help dismantle and analyze territorial disparities in the context of urban and social transformations. They fall within an approach that does not merely describe the urban form but links it to the functions of the area and its ability to ensure decent living conditions through connections to basic infrastructure networks and urban services. Access to drinking water, electricity, and building patterns also represent spatial determinants that enable the measurement of urban development levels and urban integration, as well as the observation of housing marginalization within the built fabric.

In this context, analyzing statistical data specific to the regions of Guelmim-Oued Noun and Laâyoune-Sakia El Hamra allows us to assess the degree of disparity in the coverage of basic services, the distribution of housing types, and what this translates into in terms of spatial qualification disparities and variations in the territorial capacity to respond to social demand for housing and infrastructure. These field indicators also reflect the impact of uncontrolled urbanization and the presence or absence of redevelopment policies in producing urban margins characterized by fragility, despite the presence of relatively basic facilities.

Table 5: Housing quality and basic housing indicators (2024)

The region	Moroccan housing (%)	Primitive housing (%)	Electricity (%)	Potable water (%)
Guelmim-Oued Noun	80.5	0.3	97.6	86.6
Laayoune-Sakia El Hamra	83.6	3	99	96.0

Source: General Population and Housing Census 2024 results

The statistical data represented in Figure 5 reflect subtle territorial disparities between the regions of Guelmim-Oued Noun and Laayoune-Sakia El Hamra, both in terms of access to basic facilities and construction patterns. The Laayoune region shows relatively higher performance in terms of coverage by drinking water (96%) and electricity networks (99%), compared to lower rates in the Guelmim region (86.6% and 97.6%, respectively). This disparity translates into a difference in the level of infrastructure development. It reflects a disparity in institutional and investment positioning between the two regions, considering that the

Laayoune region benefits from an administrative and economic concentration that contributes to improving basic services.

However, this apparent spatial advantage does not extend to the nature of the housing structure, as the Laayoune region records a higher percentage of primitive housing (3%) compared to Guelmim (0.3%). This indicator can be explained by the unstructured urban expansion in Laayoune, resulting from demographic pressure and rapid urbanization that is not planned. On the other hand, the effectiveness of restructuring and upgrading policies for under-equipped neighborhoods is weak. This situation confirms the existence of a heterogeneous urban landscape, where housing units are connected to basic services but are part of fragile construction patterns that do not meet decent housing standards, thereby reinforcing a form of urban housing vulnerability that is superficially masked by infrastructure networks. It is worth noting that this situation demonstrates the limitations of the traditional quantitative approach in measuring the quality of life. The high coverage rates of services do not necessarily reflect actual urban integration; instead, they may conceal forms of spatial exclusion within the urban area itself. Services are provided without genuine integration into the urban and social fabric, suggesting that some neighborhoods have been randomly connected to networks without being incorporated into a comprehensive and integrated urban planning framework.

As for the Guelmim-Oued Noun region, despite the low access rates to water, the decrease in the percentage of primitive housing reflects a relatively more regular urban dynamic, perhaps due to the limited urban expansion or the cohesion of the built environment. However, this does not negate the existence of internal disparities between urban centers and integrated rural areas, which necessitate an internal multi-scalar analysis (intra-urban/intra-regional).

These data highlight, overall, the need to move beyond a purely infrastructural approach in assessing living conditions and to transition toward a comprehensive spatial approach that considers the relationship between access, quality, and spatial integration. They also question the effectiveness of territorial policies in achieving spatial justice, especially in the context of desert areas with specific urban and demographic characteristics, where natural constraints intersect with planning and social challenges.

6. Multidimensional Poverty Index

Appearance 6: Multidimensional Poverty Index (MPI) (2024)

The region	IPM (%)	Poverty (%)	Fragility (%)
Guelmim-Oued Noun	1.78	4.9	5.3
Laayoune-Sakia El Hamra	0.84	2.4	1.3

Source: General Population and Housing Census 2024 results

It is evident from the data represented in Figure 6 that there is a notable spatial disparity between the regions of Laayoune-Sakia El Hamra and Guelmim-Oued Noun, particularly in terms of poverty, vulnerability, and human development levels. The Laayoune region records lower rates in all components of the composite index: a poverty rate of 2.4%, vulnerability at 1.3%, and an IPM rate not exceeding 0.84%. In contrast, the Guelmim-Oued Noun region shows nearly double the rates, with a poverty rate of 4.9%, vulnerability at 5.3%, and an IPM of around 1.78%. This cumulative disparity reflects an unequal spatial structure in the conditions for producing development. The Multidimensional Poverty Index (MPI) is a composite analytical tool that considers multiple dimensions beyond income alone, including indicators of education, health, living conditions, and access to basic services (Alkire & Foster, 2011). Therefore, the superiority of the Laayoune region in this index can be attributed to the relative effectiveness of its sectoral development policies and the presence of more regular urban dynamism, which provides better conditions for economic and social integration.

In contrast, the situation in the Guelmim-Oued Noun region confirms the persistence of a spatial structure less accommodating to the requirements of human development, due to the predominance of rural and semi-urban characteristics in the region, as well as the weakness of education indicators, health infrastructure, and structured job opportunities. This leads to the reproduction of social vulnerability and structural poverty, in addition to the weak organic connection between territorial policies and the needs of the local population, which raises the issue of spatial justice in directing public investments (Benosman, 2018). This disparity between two geographically adjacent regions, which differ in their developmental trajectories, highlights the limitations of isolated sectoral approaches that overlook the interconnections between social, economic, and spatial dimensions. It underscores the need to adopt inclusive territorial policies based on the principles of territorial targeting (ciblage territorial) and positive discrimination for underdeveloped areas, to evaluate public territorial policies in light of developmental equity and social cohesion standards.

Discussion

The regions of Laayoune-Sakia El Hamra and Guelmim-Oued Noun represent neighboring areas in southern Morocco. However, an analysis of their spatial, social, and economic structures reveals stark disparities that reflect unbalanced public choices, reinforcing the logic of center and periphery. The results of the 2024 general population and housing census indicate that the Laâyoune-Sakia El Hamra region has a high urbanization rate, exceeding 97%. In contrast, this rate does not exceed 70% in the Guelmim-Oued Noun region. This demographic gap not only reflects differences in population structure but also embodies an unbalanced spatial reality, where a region with a dense urban character dominates. At the same time, another suffers from weak spatial attractiveness and declining demographic indicators. The high aging rate in the Guelmim-Oued Noun region, reaching 14.1% compared to 8.6% in the Laayoune-Sakia region El Hamra region is a sign of demographic drain caused by the migration of active groups to more dynamic areas, perpetuating spatial and demographic inequalities.

In this context, Ben Attou explains these deep spatial disparities with what he calls "a spatial engineering based on unilateral polarization and the absence of integration between regions (Ben Attou, 2020, p. 45) "It is an analytical approach that dissects the geographical structure of development on the basis that it results from a centralist logic that concentrates potentials, resources, and vital functions in one region over another. Moreover, the unilateral polarization, as the researcher employed it, produces a dominant regional center that monopolizes economic flows and public investments, preventing an actual regional territorial balance. As for the absence of integration, we attribute it to the lack of interaction between the southern regions, which leads to fragility in inter-regional ties, stripping the regional spatial dynamics of their solidarity and integrative dimensions.

This analysis aligns with the views of Merlin and Choay, who emphasize that the lack of horizontal interaction between regions contributes to the entrenchment of the center-periphery dichotomy and deepens structural disparities, thereby preventing the establishment of an integrated regional spatial domain. Therefore, the disparities observed between the regions of Laâyoune-Sakia El Hamra and Guelmim-Oued Noun are not only related to quantitative indicators such as population growth or urbanization rates, but also reflect deep structural imbalances in the spatial framework of the development system. These imbalances perpetuate marginalization through an unjust and inefficient territorial engineering. This diagnosis is reinforced by recalling Nassori's argument, which indicates that "some southern Moroccan cities have benefited from projects of a political nature rather than an economic one, which deepened the paradoxes of spatial growth instead of mitigating them (Nassori, 2017, p. 90)." 90) "This confirms that the logic of spatial intervention has remained tied to temporary calculations, rather than a comprehensive developmental vision that establishes equity among regions and balances regional structures.

This situation confirms the fragility of infrastructure in the Guelmim region, as the percentage of access to potable water does not exceed 86.6% compared to 96% in Laayoune, with a disparity in electricity access (97.6% compared to 99%). Ironically, Laayoune records a higher percentage of primitive housing (3%) compared to only 0.3% in Guelmim, reflecting demographic pressure related to internal migration rather than being an indicator of structural poverty. Ben Attou explains that "unbalanced investment policies have produced a city that is attractive but not inclusive at the regional level" (Ben Attou, 2006, p. 65).

In the education sector, despite similar rates of higher education between the two regions, illiteracy remains high in Guelmim at 26.2%, compared to 15.3% in Laayoune, which partially explains the difference in the unemployment rate (31.5% versus 26.6%, Figure 4). This means that the educational model is still disconnected from the dynamics of regional production (Ben Attou, 2020, p. 15). 15. This perspective aligns with what Pierre George stated: "Education does not become a lever for development unless it is linked to local specificities and adapts to the structure of the local economy (George, 1970, p. 211) "This structural issue in the relationship between education and development reflects a weakness in integrating students and researchers into the local economic life cycle. Regarding women's empowerment, the Guelmim region has a female economic activity rate of 12.7%, compared to 19.4% in Laayoune, with a female unemployment rate of 49.1%. Ben Attou attributes this to "the persistence of symbolic and spatial dependency situations for women (Ben Attou, 2006, p. 66). This gap not only reflects an economic imbalance but also reveals a failure to produce a societal female capital capable of driving local development.

Economically, the Laayoune region benefited from most of the investments and infrastructures, as structured properties and integrated projects were allocated to it (Ben Attou, 2015, p. 16), while the Guelmim region remained outside the actual developmental action (Ben Attou, 2012, p. 13). Moreover, this confirms that "the transformations in the southern region were not the result of democratic local interactions, but rather a response to preemptive geopolitical pressures (Ben Attou & Belkadi, 2021, p. 12) "This approach reflects, on the one hand, the marginalization of local participatory mechanisms in territorial decision-making, and on the other hand, it reinforces the dependency of planning on the logic of the center and strategic priorities more than on the stakes of balanced regional development. Despite more than a decade since the launch of the advanced regionalization initiative as an institutional bet to redistribute power and resources fairly among regions, the level of implementation of the regional development program in the Guelmim region has not exceeded 22.5% (Ben Attou, 2021, p. 45), which reflects the weak actual translation of developmental visions into reality, highlighting the gap between official discourse and planning practices. In this context, current literature on spatial planning emphasizes the limitations of the top-down approach in addressing territorial disparities. The classical top-down approach remains unable to address local disparities, necessitating a flexible, participatory spatial engineering approach. This is a clear call to adopt approaches that strengthen the

role of local actors and enhance spatial governance. This vision reinforces what is known as the "aware space," where Sébastien argues that "when the periphery possesses its knowledge and social capital, it can transform into an alternative political and spatial actor" (Sebastien, 2019, p. 3). "which means the possibility of reversing spatial hierarchy by empowering marginal areas and transforming them from subjects of development into active agents within it."

In the same vein, Dumont asserts that "regionalism is not merely an administrative division, but a societal project that requires effective coordination at both vertical and horizontal levels (Dumont, 2006, p. 97) "meaning that regionalism is not achieved merely by drawing territorial boundaries, but thru weaving effective institutional relationships between the state and the regions on one hand, and between the actors within the same region on the other hand. Here, we recall what the researcher Yves Lacoste pointed out, who redefined our understanding of space when he considered that "space is not just a geographical area, but a framework for symbolic conflict and the unequal distribution of power and resources (Lacoste, 1976, p. 6) "This is a conceptual framework that deepens spatial analysis and confirms that geographical disparities are not merely natural or demographic phenomena, but expressions of power relations and conflicts over the positioning of actors within the space."

In light of the above, it becomes clear that the spatial disparities between the regions of Laayoune-Sakia El Hamra and Guelmim-Oued Noun go beyond being mere reflections of imbalances in urbanization rates, unemployment rates, or economic activity; they fundamentally represent a structural manifestation of the absence of actual spatial justice and the continuation of a centralized logic in resource and decision management. The vulnerability that the region of Guelmim-Oued Noun suffers from cannot be explained as a natural result or a geographical fate; rather, it should be understood as a direct outcome of unbalanced territorial policies and the weakness of territorial actors, in addition to the continuation of a traditional downward approach toward the area that has not taken its specificities into account and has not invested in its inherent capabilities.

Spatial justice, in this context, is not limited to a mere numerical balance of projects or a formal equality between regions, but requires rethinking the very foundations of territorial planning by moving beyond a normative approach to a logic that acknowledges spatial differences and invests in local social and knowledge capital. The advanced regionalization project constitutes a pivotal challenge for redrawing the map of territorial authority in Morocco. However, its success remains contingent upon the regions' ability to develop participatory developmental models and localize public policies within a framework of proximity and interaction. Only in this way can the centralization gap be reduced and regions capable of negotiation, initiative, and production be built. Therefore, the transition from a centralized approach to a territorial empowerment approach requires redefining the role of the state as an organizing rather than controlling actor,

strengthening territorial mediation systems, and developing qualitative indicators of territorial justice that go beyond mere quantitative statistics to assess the actual impact of public policies on the daily lives of the population. With this approach, it is only possible to transform the southern Moroccan region from a functional margin into a strategic actor, and from a dependent area into an initiative capable of influencing within a fair and equitable territorial framework.

Regarding the foresight level, overcoming existing spatial disparities requires rethinking territorial policies, necessitating direct and structured intervention in the Guelmim region to rehabilitate its infrastructure and restore its area. Meanwhile, it is essential to shift from a centripetal logic to a regional integration logic in the Laayoune-Sakia El Hamra region. The geographical reading of the 2024 general census indicators reveals the need to adopt a new territorial rationality based on spatial justice and the actual participation of local elites in decision-making, directing public policies toward responding to real needs rather than being bound by top-down assumptions. The area is not only read through numbers and indicators, but also through power dynamics and identities.

Moreover, the position within the national production system which leads us to say that "the main challenge today lies in adapting local governance patterns to the specificities of the areas, allowing for the construction of genuine paths for territorial resilience" (Hamdouch & others, 2023, p 5) and that "the redefinition of territorial planning can only succeed to the extent that it allows for negotiation and community participation, as they are two levers for creating alternative developmental solutions" (Sébastien & others, 2019, p 12).

Conclusion

The results of this comparative study between the regions of Guelmim-Oued Noun and Laayoune-Sakia El Hamra reveal a complex picture of Morocco where development indicators are unevenly distributed, reproducing structural disparities in the deep south. Demographic, economic, residential, and educational data all confirm the existence of a developmental focus centered around the Laayoune hub, where administrative, military, and economic functions intersect. Meanwhile, Guelmim remains a hesitant area between the peripheries and margins, unable to transform into a developmental hub despite having a considerable human and spatial resource base.

This study has revealed tangible imbalances in the distribution of services, job opportunities, and access to infrastructure, which raises questions about the effectiveness of territorial policies aimed at promoting spatial justice. It has also been demonstrated through multidimensional poverty, education, and economic activity indicators that the Guelmim-Oued Noun region faces vulnerabilities that intersect with gender and geographical areas, thereby weakening its ability to integrate into the national development cycle. The analysis of these indicators should not be understood as a negative description of the current situation, but rather as a

call to rethink the foundations of regional planning in Morocco, starting from the recognition of the diversity of needs and the specificity of areas. It is impossible to address spatial disparities with a one-size-fits-all approach or through isolated projects; instead, they must be addressed through territorial engineering based on the principle of positive discrimination in favor of regions that have suffered cumulative developmental delays. Researcher Hamdouch pointed out that "contemporary societal challenges impose the adoption of more integrated, participatory, and context-specific approaches, enhancing their resilience" (Hamdouch & others, 2023, p. 3). Meanwhile, researcher Sébastien noted that "local resistances to development projects reveal social and cognitive networks that re-politicize the area and propose an alternative to top-down approaches" (Sébastien & others, 2019, p. 15). Sébastien & others, 2019, p 15)

In conclusion, it can be said that the challenge today is not limited to addressing statistical indicators, but rather to overcoming the "structural spatial inequalities" that undermine the advanced regionalization project from within. As the researcher David Harvey confirmed, "spatial justice is not a technical demand, but a political choice that requires the courage to acknowledge and choose" (Harvey, 2009, p. 143) "From here, any intention for territorial reform should start from a critical evaluation of previous experiences and build an accurate diagnosis integrated into a new national vision that views the territory as a space for equity, not just distribution.

References

- Alkire, S., & Foster, J. (2011). Counting and multidimensional poverty measurement. Journal of Public Economics, 95(7-8), 476–487. https://doi.org/10.1016/j.jpubeco.2010.11.006
- Barthe, L. (2011). Géographie sociale. Concepts, enjeux et pratiques. Armand Colin.
- Battisti, F. (2014). Géographies du peuplement et dynamiques régionales. Paris: Armand Colin.
- Ben Attou, M. (2006). L'urbanisation dans le Sahara marocain : Laâyoune, une ville dynamique – De la polarisation à la dualité urbaine. Revue RGM, 22(1-2), 56–80.
- Ben Attou, M. (2015). Le territoire saharien entre gouvernance et émergence. En RGM, n° 18.
- Ben Attou, M. (2015). Le territoire saharien entre gouvernance et émergence. Revue Espace Géographique et Société Marocaine, 16, 5–40.
- Ben Attou, M., & Ait Ouaziz, R. (2020). Dynamique des villes sahariennes marocaines face au repositionnement stratégique africain : Cas de Laâyoune, de Dakhla et des Canaries. Université Ibn Zohr.
- Ben Attou, M., & Belkadi, M. (2021). Géostratégies sahariennes et modèles de développement. EGSM.
- Benosman, L. (2018). Justice spatiale et politiques publiques: lecture critique des inégalités territoriales au Maghreb. Cahiers des IFRE, (2), 45–62.
- Brunet, R. (1993). Le territoire dans tous ses états. Paris: Éditions de l'Aube.

- Brunhes, J. (1910). La géographie humaine: Essai de classification positive, principes et exemples. Paris: Armand Colin.

- Chevalier, R. (2002). Géographie des territoires. Paris: Armand Colin.

- Ciattoni, A. (2024). Villes et métropolisation. In A. Ciattoni & Y. Veyret (Eds.), Les fondamentaux de la géographie (4e éd., pp. 191–218). Armand Colin. https://doi.org/10.3917/arco.ciato.2024.01.0191

- Claval, P. (2005). La géographie culturelle. Paris: Armand Colin.

- Dumont, G.-F. (2006). Géographie des populations : Concepts, dynamiques, prospectives. Paris: Armand Colin.

- Grasland, C. (1996). La géographie sociale des inégalités d'emploi. Paris: Economica.

- Hamdouch, A., Serrano, J., & Serrhini, K. (2023). Note éditoriale – Quelle planification spatiale pour quelle résilience territoriale ? L'enjeu de la gouvernance locale. Canadian Journal of Regional Science, 46(2), 3–9. https://doi.org/10.7202/1100209ar

- Haut-Commissariat au Plan (HCP). (2024). Résultats du Recensement Général de la Population et de l'Habitat 2024 – Version provisoire. Rabat: HCP.

- Lacroix, T. (2005). Laâyoune, une ville interface saharienne. Dans Les villes sahariennes : dynamiques, mutations et mutations urbaines, IREMAM.

- Lévy, J., & Lussault, M. (2003). Dictionnaire de la géographie et de l'espace des sociétés. Paris: Belin.

- Maurer, B. (2024). Analyse d'un manuel d'alphabétisation au Maroc: Quels principes? Quelles pratiques? Revue TDFLE, 84. https://revue-tdfle.fr/articles/revue-84/3755-analyse-d-un-manuel-d-alphabetisation-au-maroc-quels-principes-quelles-pratiques

- Morange, M., & Schmoll, C. (2016). L'approche qualitative en géographie: une démarche et une posture. In Les outils qualitatifs en géographie: Méthodes et applications (pp. 17–32). Armand Colin. https://shs.cairn.info/les-outils-qualitatifs-en-geographie--9782200601164-page-17?lang=fr

- Nassori, D. (2017). Dynamiques urbaines et développement économique au Maroc [Thèse de doctorat, Université de Toulon].

- PNUD. (2020). Rapport sur le développement humain. New York : Programme des Nations Unies pour le développement.

- Sébastien, L., Milanesi, J., & Pelenc, J. (2019). Résister aux projets d'aménagement, politiser les territoires: Le concept de résistance éclairée appliqué à trois conflits d'aménagement (France, Belgique). VertigO, 19(1), 1–21. https://doi.org/10.4000/vertigo.25345

- Sen, A. (1999). Development as Freedom. Oxford: Oxford University Press.

- Veyret, Y. (2014). Géographie humaine: vers une géographie sociale. Paris: PUF