



ANALYSIS OF THE DETERMINANTS OF SPATIAL EXPANSION IN SECONDARY CITIES: THE CASE OF KÉBÉMER (NORTHWEST SENEGAL)

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Abstract: This article explores the spatial dynamics of secondary cities in Senegal, whose evolutionary processes differ from those of former regional cities. Specifically, the commune of Kébémér has experienced significant spatial expansion since the late 1970s, primarily due to drought that led to agricultural decline and rural exodus. These phenomena, combined with other factors, have contributed to a remarkable spatial dynamic. The objective of this research is to trace the evolution of spatial expansion in Kébémér and analyze its causes. The study's methodology is based on a literature review as well as quantitative and qualitative surveys. This approach has highlighted the path of spatial dynamics in this secondary city by analyzing the trajectory of Kébémér's spatial evolution and the determining factors of its spatial extension.

Keywords: Determinants, Spatial expansion, Growth, Secondary city, Kébémér

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1 Introduction

Urbanisation is one of the most significant phenomena of the 21st century. This unprecedented process is amplified by globalisation, which has made cities central, dynamic territories both socially and spatially. Today, the majority of the world's population resides in urban areas. In 2008, a historical milestone was reached: for the first time, more than half of the world's population, or 3.3 billion people, lived in cities (UN, 2007). This figure was only 2% in 1800 and 30% in 1950. However, this trend continues, with a daily increase of 180,000 people and 1.25 million every week in urban areas (Lieberherr-Gardiol, 2007).

However, this phenomenon, which initially concerned only industrialised countries, is now exploding in developing countries due to demographic and spatial dynamics (Nguimalet, 2004). This growth is unprecedented in the developing world, particularly in Africa. According to the UN, in 2009, Africa exceeded one billion inhabitants, with 395 million, or nearly 40%, living in urban areas. According to projections, the African population will reach two billion by 2050, with 60% living in cities (UN-Habitat, 2010). This growth has led to a considerable expansion of urban fabric, with an unprecedented increase in built-up areas extending in all directions. Today, African cities are at the heart of demographic and socio-spatial transformations, making urban sprawl a central issue in discussions on sustainable urban development. In West Africa, the total population increased from 88 million in 1960 to over 289 million in 2010 (Casimir, 2012).

Similar to other West African countries, Senegal faces rapid urbanisation. Its urban population has increased rapidly: less than 2,000,000 in 1976, 2,658,000 in 1988, and more than 4,000,000 in the 2002 census, out of a total population of about 9,855,000, resulting in an urbanisation rate of 41%. This rate consolidated in 2013, reaching 48% (RGPHAE, 2013). It should also be noted that Dakar is by far the most urbanised city in the country, with an urbanisation rate of 96.4%, concentrating 49.6% of the country's urban population (RGPHAE, 2013). However, this process has also been illustrated in all regional capitals, which are gradually equipped to play the role of balancing metropolises to counterbalance the overwhelming weight of Dakar. We are witnessing the emergence of new urban dynamics, notably with the spectacular development of regional urban centres (WADE, 2014:22) and the rise of certain secondary cities such as Kébémér.

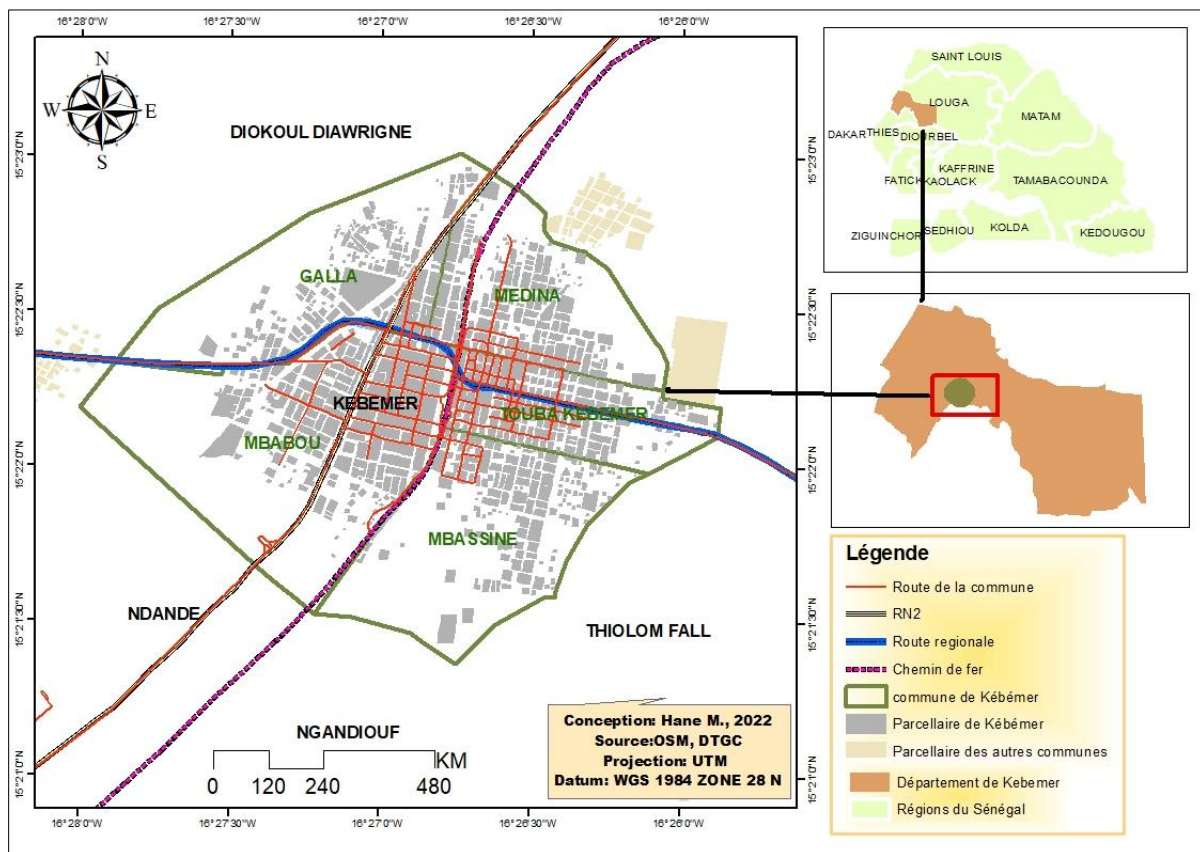
Thus, given its strategic position (see map 1) and its multitude of advantages, the city of Kébémér has experienced rapid urban growth and a reconfiguration-recomposition of its territorial system. Kébémér is therefore quite representative for studying the urbanisation of secondary Senegalese cities. The population of the commune reached 10,042 inhabitants in 1988, with an intercensal growth rate of 48.35% compared to 1976, and 15,028 inhabitants in 2003, with an annual growth rate of 2.74%. This progression continued notably in 2013 when the city had about 19,902 inhabitants (ANSD 2013) and 27,305 inhabitants in 2023 according to the latest census data.

This demographic pressure leads to a significant increase in housing demand, resulting in urban sprawl beyond the official city limits, with its share of consequences. Thus, as in other secondary cities, Kébémér's demographic growth is accompanied by significant spatial dynamism, manifesting in substantial socio-spatial changes.

Therefore, what is the process of this urban sprawl? What are the determinants of this spatial dynamism? The objective of this research is to trace the trajectory of the evolution of the spatial expansion phenomenon in Kébémér and analyse its explanatory elements. This research is based on the hypothesis that "the process of rapid spatial expansion of the city of Kébémér is attributable to demographic factors, economic trends, political-institutional choices, and socio-cultural influences."

This contribution is structured into three parts: first, the study's methodology; then, the description of the city's spatial dynamics and the analysis of the determinants of spatial evolution; and finally, the discussion of the results.

Map 1: Location of the commune of Kébémér



2. Methodology

The methodological approach of this article is primarily based on documentary research as well as the collection and processing of data.

To thoroughly understand our study subject, it is essential to begin with a theoretical analysis to grasp the fundamental concepts of the topic. This requires a comprehensive review of the documentation. Thus, examining various books, theses, dissertations, articles, and study reports was indispensable. This theoretical analysis allowed us to better understand the process of spatial expansion of secondary cities and its triggering elements, as well as to develop an epistemological framework and formulate hypotheses. The documentary choices we made helped us adjust our ambitions, gain a better understanding of the reality studied, and better plan our fieldwork.

The data used are primarily collected from the field. The data collection in the field was carried out using three main tools: the questionnaire, the interview guide, and focus groups, which were then exploited and processed using specific tools.

The quantitative approach involved developing a questionnaire. The questionnaire proved to be a particularly effective tool for collecting quantitative data. For this study, we prioritised the household questionnaire for data collection from the population, rather than the concession questionnaire. Indeed, the notion of concession, defined as a unit of collective housing generally enclosed and under the authority of the same head (Cissé 2020), proved less suitable for our research, as most of the dwellings in the informal neighbourhoods of our study area are not enclosed. This questionnaire enabled us to measure the extent of the city's spatial expansion, identify its factors, understand the households' perception of it, and assess the contributions of migration flows (rural exodus and international migrations) and their consequences. The survey covered all the neighbourhoods of the city of

Kébémér. To determine the sample, we used the stratified sampling technique. This method involves dividing the population into several homogeneous groups (strata) that do not overlap, then randomly selecting members from each stratum for the research. We divided the neighbourhoods of our study area into two strata based on their age: old or central neighbourhoods and peripheral or new neighbourhoods. The selected data indicate that the city of Kébémér has 2,253 households, unevenly distributed across the different neighbourhoods. This justifies our decision to survey 12%, or 271 households, of the commune to cover a wider range as the urban population is very dynamic. After calculating the share of each stratum in the sample, we determined the number of survey questionnaires to be administered in each identified neighbourhood. Specifically, we started by calculating the relative value of households for each neighbourhood using the following formula: Relative value = (Number of households in the neighbourhood × 100 / total number of households in the city (2,253)). Then, we determined the quota of questionnaires to be administered in each neighbourhood using the following formula: Sample = (Relative value * 271 / 100).

Tableau1 : sampling

Neighbourhoods	Districts	Households	Relative value (%)	Sample size
Galla	Galla	326	14	38
Diammaguene	Mbabou	740	33	89
Mbabou				
Mbassine	Mbassine	323	14	38
Ndiaby				
Medina	Medina	535	24	65
Ndakhar				
Escale	Touba kébémer	329	15	41
Toby				
Darou Salam				
	Total	2253	100	271

The qualitative approach involved conducting interviews with key individuals in the city: state and municipal authorities, neighbourhood chiefs, imams, emigrants, etc. Additionally, to better understand the perceptions and views of women and youth on the spatial dynamics of their commune, focus groups were organised with the women of Mbootay de Diamaguene and the youth of Deggo. Participants were chosen to represent a diversity of ages, socio-economic situations, and roles within the community. The collected data were analysed qualitatively, identifying recurring themes and variations in the perceptions and experiences of different participants.

The final stage of the methodology is the processing and exploitation of the data collected from the field. First, bibliographic data were collected and grouped by authors and works, then processed according to sub-themes. Furthermore, it is important to note that the questionnaire was developed using the "Kobotoolbox" platform, which was also used for its administration via mobile phones through the "KoboCollect" application. After collecting the data, we extracted them in CSV format for processing with SPSS software. This software offers powerful visualisation tools for creating clear graphs and charts and also allows for necessary cross-tabulations to analyse all correlations between the data.

3. Results

The city of Kébémér has been experiencing dynamic spatial development in recent years. This growth and spatial reorganization, evident through different temporal phases, are the result of historical, administrative, economic choices, and other parameters.

3.1. Route of Spatial Evolution of the City

The city's evolution has been part of a complex process shaped by various decisions and influences, reflecting a multidimensional transformation of its urban landscape. These dynamics reveal socio-spatial changes and allow us to better understand the transformations of the studied territory. To fully grasp this evolutionary trajectory, it is essential to trace the city's history, from its origins to its contemporary expansion.

- **History of the Creation of the City of Kébémér**

Understanding the creation and extension process of secondary Senegalese cities requires a historical overview to grasp the foundations of their formation process.

Human presence on the site of Kébémér is very ancient. The analysis of pottery discovered there revealed that traces of human presence in Kébémér date back to the Neolithic period. However, the origins of the municipality of Kébémér are not unanimous. The most widely shared version by the population and municipal authorities is that the city was founded in 1774 by three brothers from the family of a Sarakhoulé marabout from Kayes.

An historical land belonging to the former province of Gueth, Kébémér was an important area of the kingdom of Cayor, marking its boundary with that of Djolof to the East. After the death of Lat Dior in 1886, the colonizer made Cayor a conquered territory and integrated it into the administrative system of the colony.

- **Impact of the Railway on the Spatial Reorganization of Kébémér**

Considering the importance of the railway as a tool for controlling territories, accessing remote areas, and exporting raw materials, the colonizer decided to lay tracks in many African colonies. The Dakar-Saint-Louis railway was built, systematically changing the structure and functioning of the city of Kébémér. Additionally, the formation of the old peanut basin, which included Kébémér, was due to the colonizer's political will to establish a market economy over a subsistence one. The Kébémér area thus had all the conditions for the development of peanut cultivation, trade economy, and became suitable for new human settlement. Consequently, becoming a transit route due to its crossroads position, Kébémér became a strategic site after the railway construction, further connecting it to its hinterland.

It then enjoyed a pivotal and essential role in the organization of the regional space and in balancing urban/rural relations. Suddenly, the city's capitalized elements, such as its road and rail crossroads position and its growing influence, gave it prominence in the local chessboard and increased its polarizing capacity. The station marked the birth of the Escale neighborhood with the arrival of large French commercial houses, mainly from Bordeaux, Lebanese-Syrians, and people from Saint-Louis (CFAO, Ets Vezia, Maurel and Prom, Perissac, Chavanel et fils..., etc.) (PIC 2011).

Photo: Old kebemer station



Photo: Hane M., 2024

The city's economic and social dynamism soon impacted its spatial structure. “The structuring role of the railway is reflected today through the distribution of towns and large rural villages, revealing a rather particular spatial configuration” (Thiam 2008).

- **Administrative Evolution of the City during the Colonial Era**

Through its administrative and economic privileges, the city of Kébémér actively participated in the regional dynamism and continued to exert its influence on the areas it polarized. This status was strengthened by the municipality's elevation to the rank of a mixed commune in 1925, which was directed by Europeans until 1937, when Cheikh Ibra FAYE was appointed as the administrator mayor.

After Senegal's independence in 1960, the statuses of mixed commune and middle exercise were abolished. Kébémér and all mixed communes then attained the status of fully functional communes. The city later became the chief town of the department in the former region of Diourbel and maintained this status in the Louga region, with Ahmet DIOP as the first mayor (PIC 2011).

- **Urban Expansion of Kébémér after Independence**

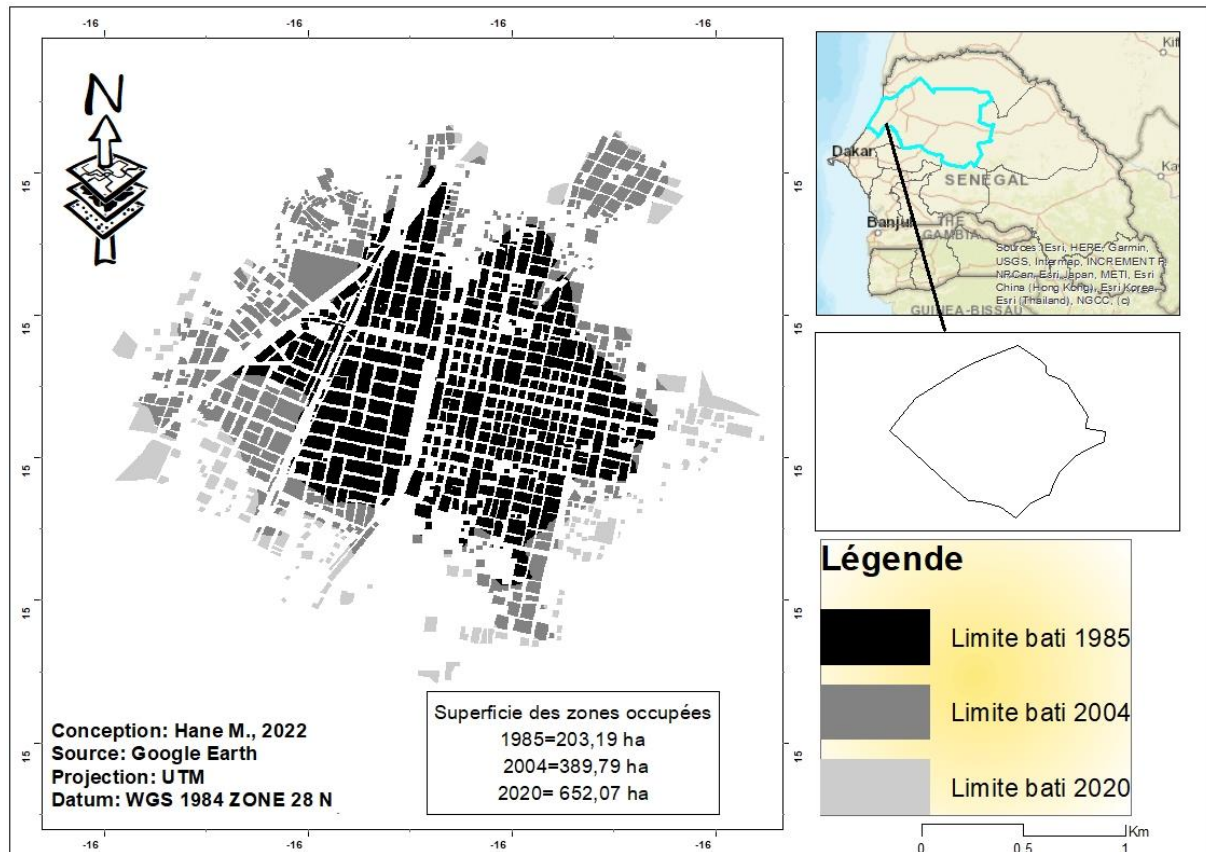
Founded and initially fueled by a nucleus of villages and rural towns, Kébémér gradually became an influential urban area. Thus, its two old neighborhoods Mbassine and Mbabou expanded, and other neighborhoods such as Escale (formerly Touba Kébé), Medina (formerly Mbabara), Diamaguène, Galla, Ndiaby, and Toby emerged.

Furthermore, the crisis of the 1970s, coupled with measures taken by the Senegalese State under structural adjustment policies, led to a decline in agricultural production and accelerated the departure of populations to Europe. Conversely, the city of Kébémér greatly benefited from this as the economic and real estate investments of emigrants revitalized urban dynamism and restored its former regional prestige. The city then resumed its urban functions and influence over neighboring villages, resulting in urban space expansion and population growth.

Indeed, until 2002, its perimeter extended over a square of 2 km each side, covering an area of 4 km² (see Map 2). However, aware of the fundamental need for space to house inhabitants through new allotments, local authorities collaborated with neighboring rural communities to push the boundaries of their commune. Thus, they obtained significant land concessions. The commune of Kébémér now extends over a rectangle of 3.8 km in width (North-South) and 4.5 km in length (East-West), covering an area of 17.10 km² (PIC 2011). The delimitation of the new boundaries of Kébémér is defined by Decree 2008-09 extending the territorial limits of the commune.

Moreover, the rapid growth of built-up areas confirms the accelerated pace of Kébémér's spatial expansion.

Map2: Spatial extension of the Kébémér of build-up areas in kebemer from 1985 to 2020



On this map, we digitized the city's built-up limits in 1985, 2004, and 2020 from Google Earth to see, independently of the institutional limits set by public authorities, the process of extension of built heritage and the direction of its spatial orientation. Observing the urban landscape shows a revitalization of housing that has profoundly altered the city's structure. The city's expansion has significantly evolved, especially in the 2000s, when the built-up area increased from 203.19 ha in 1985 to 389.79 ha in 2004, an increase of 91.83% in 19 years. This increase overflowed the communal limits at all levels. The proliferation of spontaneous housing and other factors attributable to emigration further increased the urban fabric in all directions. The built-up area in 2020, estimated at 652.07 ha, represents an increase of 67.28% compared to 2004, reflecting the rapid spatial expansion observed in this commune.

This expansion of the communal space by this decree integrates three entities into its territory that were hitherto villages: Ndiaby Fall, Toby Diop, and Ndakhar Syll, which now officially become neighborhoods. Several allotments have helped legalize urban expansion.

In 1996, under Mayor Momar Dieng's leadership, two main areas were allotted: Cité Niakh and Mbabou Extension. This allotment organized urbanization in this area and integrated new plots into the urban fabric of Kébémér, meeting the growing housing demand.

In 2009, Mayor Aly Kebe undertook a larger allotment operation, covering all corners of the city: Route de Lompoul, Route de Louga, Route de Dakar, and Route de Sagatta towards Touba. These allotments aimed to structure the city's expansion, meet the very high demand from the population, eradicate informal settlements (faak deuk), and improve access to major communication routes.

In 2014, Mayor Lamine Thiam continued this dynamic with new allotment operations: Gala 1 and Gala 2 and Toby. This allotment was carried out with the same objectives as the previous ones but this time allowed for the restructuring of the village of Toby and its integration into Kébémér's territory.

In 2019, Mayor Lamine Thiam launched several significant allotment projects. These included the lands of the Kébé-Kébé, ancestral lands belonging to the dignitaries of Mbabou, which were allotted to integrate new plots into the urban fabric. This operation aimed to redistribute land and ensure the application of the current land reform

while respecting historical and cultural heritage, as these dignitaries received several plots in the allotment process. That same year, he also allotted the old bus station and regularized Keur Diaga to formalize existing constructions and plan new plots.

These initiatives have further structured the commune of Kébémér, integrating historically important areas and addressing the population's growing needs for housing and infrastructure.

3.2. Determinants of Spatial Expansion in the City of Kébémér

The city and its urban fringe have undergone profound and rapid quantitative and qualitative transformations, whose origins and significance need to be studied. Population growth has long been the driving force behind city growth (Ewing, 1994). However, nowadays, the explanatory elements of urban growth have significantly evolved.

The explanatory elements of the urban expansion process in the city of Kébémér are numerous and well-known. These include demographic factors, economic trends, political and institutional choices, and socio-cultural elements.

3.2.1. Demographic Dynamics

Like other secondary cities in Senegal, the demographic profile of the city of Kébémér is very dynamic. This rapid population growth is confirmed by numerous census operations primarily conducted by the National Agency of Statistics and Demography (ANSD).

The demographic profile of Kébémér shows a considerable increase in the urban population over the years. The roots of this demographic growth trace back to the 1970s. The population, estimated at 3,900 inhabitants in 1961, grew to 6,769 inhabitants in 1976, reflecting an intercensal growth rate of 73.56%. This exponential population growth during that period was fundamentally driven by the massive influx of rural populations fleeing the adverse effects of deteriorating climatic conditions. The communal population boom initiated during those years continued, albeit at a slower pace. The population of the commune reached 10,042 inhabitants in 1988, with an intercensal growth rate of 48.35% compared to 1976, and 15,028 inhabitants in 2003, with an annual growth rate of 2.74%. According to the latest census by ANSD in 2013, the commune of Kébémér had 19,902 inhabitants and is projected to reach 27,700 inhabitants by 2025.

Table 2: Urban Population Growth

Years	Frequency of Records	Population	Annual Increase	Intercensal Growth Rate (CAGR %)
1961	0	3900	0	73,56
1976	15	6769	2869	
1988	12	10042	3273	48,35
2002	14	15028	4986	49,65
2013	11	19902	4874	32,43
2020	7	24169	4267	21,44
	59		20269	

Source: RGPFA, 1976, 1988, 2002, 2013 et PIC 2011

The city of Kébémér began experiencing significant population growth in the 1970s, increasing by 2,826 inhabitants between 1961 and 1976. It has been characterized by a continuous rise in population since the 1970s. Its strategic geographical position and the construction of the railway, which made the city a transit center in the peanut distribution network, contributed to an influx of people to the city. Additionally, ecosystem degradation resulting from worsening climatic conditions caused significant changes in the city's demographic structure, leading to a massive influx of people from surrounding areas. Facing massive rural exodus and strong natural growth, the city's population increased rapidly. The average population increase over just over half a century (59 years) is 343.54 people per year, representing 8.80% of the 1961 population and 1.42% relative to the 2020 population. Therefore, this population growth depends on two fundamental elements: natural population growth and migration influx. Kébémér has long benefited from rural population inflows, gradually becoming a major destination for migratory flows. Natural population growth is also dynamic, boosted by the settlement of newcomers, mainly from villages in the region. This spatial and demographic expansion has led to an increase in the number of housing units in the city, rising from 955 concessions in 1995 to 1,998 occupied concessions in 1999, an increase rate of 104.82% in just four years. This spatial expansion has continued in recent years. The 2013 census statistics count 2,253 concessions in Kébémér for a population now totaling 19,902 inhabitants. This demographic dynamism, driving demand for construction, has further expanded the city into its hinterland.

After examining the demographic evolution of Kébémér, we can delve into the trajectory of urban dynamics to fully grasp the territorial transformations that have taken place.

3.2.2. Economy, the driving force behind urban expansion

The dynamism of economic activities and economic considerations in choosing residential locations are key factors in urban growth. The economic dimension is essential in understanding the factors guiding population settlement in the city. Economic arguments underpinning urban growth become more plausible with statistics showing that, apart from family reasons influencing many people's residential choices, economic factors rank second, with 36% citing reasons such as job search (21%), difficult economic conditions in rural areas (10%), and low land prices (5%). Due to its economic potential, the commune of Kébémér has become a hub for trade and supply, serving its population and hinterland. These economic activities (commerce, crafts, transportation, etc.) attracting rural populations have significantly impacted the city's urban expansion process. Urbanization has promoted more productive activities (services, commerce, and industry) with higher value added than agriculture. In order to be closer to their workplaces, these workers often preferred to settle in the city, typically on its outskirts. This phenomenon has greatly facilitated both demographic and spatial urban growth. Indeed, economic motives are frequently cited among the reasons for settling in the city by surveyed populations.

Like many secondary inland cities in the country, Kébémér faces a shortage of habitable space in older neighborhoods but offers more land and real estate opportunities in new or attached villages, commonly referred to as peripheral neighborhoods (Toby, Ndakhar, Ndiaby, etc.). Land availability in these areas is thus a critical factor in the commune's expansion process, explaining the massive settlement of low-income households on the periphery where land is available and cheaper, and rental costs are more affordable.

Unfavorable climatic conditions and rising real estate prices have led to the fragmentation of agricultural lands. This parceling of family plots and the sale of residential land in recent decades have significantly intensified spatial expansion in Kébémér. This phenomenon underscores the economic nature of spatial expansion on two levels: first, among landowners liquidating their lands to meet their needs, and second, among buyers benefiting from the real estate market, which offers urban living at a more affordable cost.

It is also noteworthy that according to surveys and interviews conducted in the city, urban expansion originates primarily from economic forces engaged in land and real estate promotion. Indeed, these developers and speculators encourage space fragmentation, capitalizing on high demand for land and benefiting significantly from municipal officials' leniency.

However, Kébémér's spatial expansion does not solely adhere to economic rules; other mechanisms are at play. Institutional initiatives often exert a decisive influence on residential location choices and urban dynamics.

3.2.3. Public Initiatives and Mechanisms of Urban Space Extension and Densification

The structuring of geographic space primarily results from political dynamics that mediate between social actors and the territory. In their current landscape, inland secondary cities in the country are indeed shaped significantly by private initiatives playing a crucial role in land and real estate production dynamics, but even more so by direct and motivated actions from both the central government and local authorities, whose development decisions shape urban land.

The study of Kébémér's various political-administrative structures emphasizes the role of public authorities in urban development. The influence of political decisions on city planning began with the construction of the railway, which completely disrupted urban hierarchy. This was followed by a series of development and planning decisions that profoundly altered spatial dynamics. Several land subdivision operations have been carried out in the municipality by public authorities from colonial times to the present day.

It is necessary to highlight that in Kébémér, urban governance and functioning are the responsibility of the municipal council, empowered to make decisions that can influence urban fabric operation. In this municipality, political choices have promoted rapid urban space expansion. Several land subdivision operations have been conducted in the municipality from colonial times to the present day. Kébémér has seen numerous subdivision operations over the decades. In 1996, Mayor Momar Dieng subdivided the Niakh City and Mbabou Extension areas to meet the growing demand for housing. In 2009, Mayor Aly Kebe extended subdivisions to the four boundaries of the municipality. In 2014 and 2019, Mayor Lamine Thiam continued this trend by restructuring the village of Toby and subdividing Gala 1 and Gala 2, as well as the old bus station and Keur Diaga.

Table3: Authorized Subdivisions in Kébémér from 2014 to 2023

Year	Subdivision name	Decree number	Number of plots	Number of plots distributed
2014	Toby	No. 02 October 2014*015281	1031	From 1 to 1031
2014	Galla1	No. 23 October 2014*016090		
2014	Galla 2	No. 23 October 2014*016091	226	From 1 to 228
2021	TF 1888/L for the State of Senegal social housing program	No. 23 June 2021*020909	536	No information
2022	Keur Diarga	No. 25 May 2022*013292	2091	Under attribution

It should be emphasized that these political factors, which fundamentally impacted the spatial expansion mechanisms of the city, found a favorable ground on site, notably through socio-cultural aspects that played their role in the urban expansion process.

3.2.4. The Weight of Socio-Cultural Pressures in the Urban Growth Process

Taking into account social networks and family groups allows for a better understanding of residential trajectories and the choices made by households in the process of settling in a given neighborhood. This helps grasp the extent of the influence of these socio-cultural considerations on urban expansion.

The analysis of spatial expansion in the city of Kébémér shows that the promotion of individual housing and the importance placed on property ownership have been crucial. This hypothesis is confirmed in Kébémér, where 79.33% of the population already own their homes. In this city, obtaining individual property ownership is a mark of respect. This concept is deeply ingrained in the mindset of the people of Kébémér. Thus, owning a home is the goal of almost every household, marking the culmination of a residential career and serving as a social representation. It is widely accepted that owning a home signifies independence, providing the opportunity to share one's plot, build, reserve housing for children in the future, and thereby secure their future. Therefore, individuals seeking social legitimacy and success make property ownership a lifelong goal, especially as renting is seen as precarious and alienating. These socio-cultural considerations that govern access to housing de facto encourage spatial expansion through increased demand for land and real estate to acquire a dwelling. These socio-cultural factors are even more significant considering that 20.66% of household heads mentioned social aspects as a reason for settling in their current neighborhood, particularly through the desire to reunite with family or attachment to their place of residence and its residents.

While socio-cultural factors are pivotal in the city's spatial growth, the horizontal trend of building also constitutes an essential factor in this expansion.

3.2.5. The Predominance of Horizontal Housing

The predominance of horizontal housing is evident across all spatial scales of the city. In older neighborhoods such as Mbabou and Escale, despite some acceptable presence of vertical housing, terrace houses are visibly more prevalent. This situation, promoted by individual housing, consumes a significant amount of space. In the peri-central part, housing remains mostly low-rise, with terrace houses dominating and greatly facilitating urban sprawl. At the outskirts of the city, particularly in new neighborhoods, one can almost count the number of multi-story houses because the majority are low-rise. Unlike the previously mentioned areas, these neighborhoods also house many makeshift, semi-terraced, and sometimes straw houses. This situation increasingly promotes city expansion, which continues to grow and spread into its hinterland. It is also in these areas that one finds immense properties built by migrants who chose real estate as their investment.

Moreover, both in the city center and on the outskirts, urban households seeking comfort and more space prefer large houses that do not require vertical construction. The proliferation of these residences in peri-urban areas necessarily contributes to significant land consumption. This resolutely horizontal construction method, combined with the absence of physical and geographical constraints, allows the city to expand comfortably into its hinterland.

4. Discussion

The results of the spatial expansion analysis of Kébémér city indicate that its evolution stems from several determining factors. This spatial extension thus results from multiple influences, including economic considerations, politico-institutional decisions, socio-cultural elements, demographic trends, and migratory dynamics, among others.

Regarding this evolutionary process, the analysis of spatial dynamics reveals a steady development of the city, attributable to various contributing elements. These findings align with Wade's (1995) work, which identified different stages marking the evolution process of Saint Louis city. According to Wade, before national independence in 1960, Saint-Louis did not undergo drastic modifications in its communal space, but its development and expansion were supported by sociopolitical, administrative, and socio-economic factors, linked to its status as a regional capital and a balance metropolis. However, our study's results do not entirely align with Vennetier (1991) and Diop (2004), who attribute urban growth mainly to massive migration and natural population growth. The present study demonstrates that the various urbanization factors mentioned previously are equally as important as those considered by these authors. In his thesis on Dakar city, Mbow (1992) analyzed the urbanization of Senegalese cities over several decades, concluding that Dakar's urbanization was primarily due to migration and the internal dynamism of the urban population, with a notable economic dimension at times. These conclusions partially echo ours, but our study also addresses political, socio-cultural dimensions, and the horizontal trend of building structures.

Mutumbo's (2014) work on the urbanization of Kinshasa highlights the spatial expansion of cities whose boundaries blend with rural areas, a phenomenon observed in several African cities. However, his contribution complements our study by emphasizing other determinants of urban growth in Kinshasa, such as rapid industrialization, migrations, and the expansion of unplanned and precarious habitats, exacerbated by high housing

demand and a laissez-faire political environment. Furthermore, Senegalese secondary cities distinguish themselves through their development and operation, differing from major global cities. Center-periphery theories and other empirical considerations on urbanism do not necessarily apply to these cities. Consequently, Lamoure and Laporte's (2017) conclusions differ significantly from ours, and their findings highlight the noted differences in spatial sprawl factors between our secondary cities and major metropolises. According to these authors, sprawl in European cities results from economic activities concentrated in the center, transportation development, and cultural and political factors. In Kébémér, however, the development of economic activities plays a structuring role in attracting populations who seek proximity to these activities due to the lack of sophisticated transportation means. Moreover, Kébémér is polycentric, with quasi-autonomous peripheral neighborhoods independent of the center-periphery dynamic. This study underscores the need to move beyond traditional analytical frameworks and explore processes specific to secondary cities, which sometimes follow dynamics different from those observed previously.

5. Conclusion

Our analysis reveals that the dynamic evolution of Kébémér's urban space is the result of various factors. Historically, its integration into the railway network during colonization reshaped its structure and functioning, as the Dakar-Saint-Louis railway particularly transformed Kébémér into a strategic crossroad and increased its regional influence. Administratively, Kébémér's transition to a mixed commune status in 1925 and its post-independence developments also supported its growth. However, after independence, urban expansion intensified, marked by the creation of new neighborhoods and the extension of communal boundaries. Population growth, fueled by an influx of rural populations and natural increase, also played a significant role. Public initiatives, notably the multiple subdivisions orchestrated by local authorities, structured urban expansion. Economic factors, such as the rise of commerce and services, as well as socio-cultural considerations, such as the valorization of property ownership, contributed to this dynamic. Therefore, Kébémér's spatial expansion is a multidimensional phenomenon, illustrating a complex interaction between demographic, economic, political, and socio-cultural forces.

However, the significant spatial expansion of Kébémér's urban area today raises questions about urban planning and governance, especially as this phenomenon affects several sectors of the city.

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