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The Determinants of the Unequal Establishment of Socio-Collective Facilities in the Rural Territories of the District of Abidjan, Côte d'Ivoire

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Abstract:

The objective of this study is to make (a description based on the score function, an inferential index) to identify the factors that guide development actors in the spatial distribution of basic equipment and services in the rural territories of the district of Abidjan. The study was motivated by a lack of information on the criteria for choosing the allocation of rural areas with equipment, in view of the needs of the populations and the existing disparities between areas in basic services.

The methodological approach is based on a combination of cartographic approach and inferential statistics. The cartographic approach describes the distribution of said equipment, while inferential statistics (after determining the variables), prioritize the localities in view of their level of endowment in services provided to the populations. The results revealed, at 75% that factors relating to administrative status and geographic location influence the developer in the distribution and quality of socio-collective facilities. While demographic factors guide 17% of the services involved in improving the living environment of rural people, in making their choices on the population of localities in the distribution of basic services to the populations. To this end, localities with administrative status, or located near a main axis of communication have a better endowment of basic services than the peripheral and island villages of the district of Abidjan.

Keywords: Development actors, score function, equipment, rural, Abidjan district

1. Introduction

In Africa, and particularly in Côte d'Ivoire, infrastructure has always played a crucial role in the spatial structuring of territories, the improvement of living conditions of populations and the reduction of poverty levels. As the report of the United Nations Development Program (UNDP; 2004) reveals, the evolution of the level of service of the territories in infrastructures and basic services is essential to the survival and human development. By their presence, they improve access to existing infrastructure or public services and reduce the distances that populations have to travel. In addition, they provide people with services essential to their well-being through their access to clean water, modern health care, rural electrification, education (ASSI, 2018, P 19).

However, it has been noted that, although large-scale projects have been carried out to reduce local disparities in terms of equipment, several rural areas are marginalized to the detriment of others in terms of the supply of equipment, despite the existing disparities and the contrasting mobility of the populations of island localities or those living in localities located more than 15 km from a main communication axis. The question that arises from this problematic situation is therefore: what are the factors that influence national and local decision-makers to prioritize certain rural localities in the provision of facilities in rural areas?

The assumptions that seem to militate in favor of the choice of one locality over another could be related to the administrative or historical status of the localities. In addition, the criteria for choice may be a function of population size or the geographic accessibility of one locality over another.

Testing these hypotheses requires the development of a research methodology. The first is related to the techniques used to collect the data and the other to the way in which this study was conducted in order to carry out this research.

But before declaring the methodological approach, it is noted that the results of this article will be structured as follows:

- The first part will highlight the importance of the administrative and historical status of localities in the provision of basic services to the population in rural areas.
- The second part of the results will highlight the geographical accessibility of localities as a determining factor in the spatial distribution of facilities in rural areas.

- The last part will evaluate the weight of the demographic size of localities in the provision of facilities in rural areas

2. Methodology

2.1. Physical and Human Framework

The rural area of Abidjan District is composed of the spatial area of the Anyama sub-prefecture before 2010 and the territorial districts of Bingerville and Songon (Figure 1).

This rural area is bounded to the north by the departments of Agboville and Adzopé, to the east by the department of Alépé, to the southeast by the department of Grand-Bassam, to the west by the department of Dabou, to the center by the city of Abidjan, and to the south by the Ebrié lagoon.

The total population of the rural territories of the district of Abidjan was 158455 in 2014 according to the general population and housing census (2014). The population is composed of indigenous peoples (Ebrié, Attié) and foreign populations (allochthones and allogènes). The dominant activity of the population is agriculture, although 3% of the inhabitants work in the administrative services located in the localities of this territory.

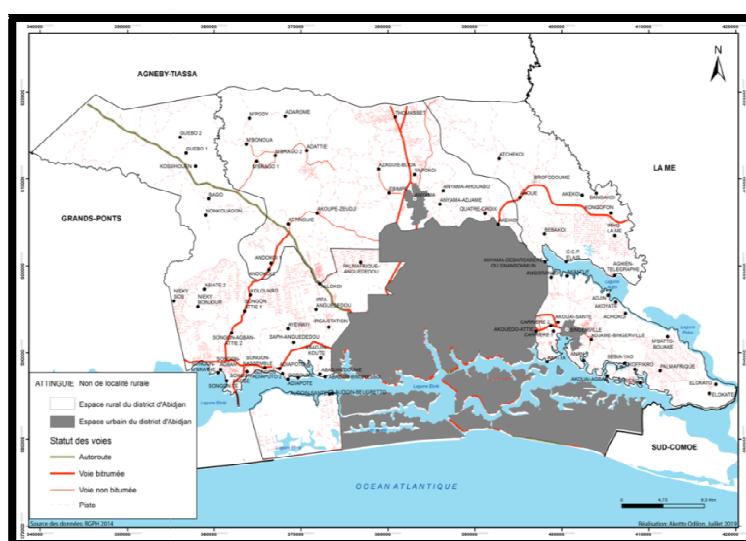


Figure 1 : Presentation of the Rural Area of the Abidjan District

2.2. Methodological Approach

2.2.1. Selection of Variables

The realization of a cartographic model of the level of equipment by stratum (or sector) in order to classify and prioritize the sets of localities according to their level of endowment. To this end, this model requires the selection of a certain number of variables characterizing the level of equipment in the rural territories of the Abidjan district. To this end, we relied on the methodological approach of LOBA (2013) and ASSI (2018), based on inferential statistics, as a synthetic indicator to quantify the level of equipment of localities. On the basis of a discriminant analysis, this approach makes it possible to determine a hierarchical index of rural localities according to their endowment of basic facilities and services from the calculation of the 'score' function. The variables highlighted in order to define the level of equipment of rural localities are:

- Geographic accessibility of locations;
- Administrative status;
- Population;
- Presence and number of schools;
- Presence and number of health facilities;
- The number of administrative services and socio-cultural centers;
- The presence of telephone, electricity and drinking water supply networks;
- The presence of service stations, post offices and covered markets;
- The existence of a subdivision plan for the locality.

2.2.2. Description of the Analysis Model Based on the Score Function

Once the variables were identified, the score function was developed for each of the above variables based on the results of the discriminant analysis. 'The modalities with the lowest discriminant function coefficients were assigned '0' as a score. To this end, all localities with a low score and below a threshold value that we have determined, are classified as under-equipped localities in our study. Localities with a high score above the threshold value are classified as relatively equipped localities.

Thus, the total score of a locality is obtained by adding the scores assigned to the modalities of the qualitative variables. These scores, elaborated from the coefficients of the Linear Discriminant Function, allow to quantify each of the modalities of the most discriminating variables. The score or index of a locality is calculated by summing the coefficients scores that it obtains for the modalities of the variables characterizing it. It is this score that will allow us to classify the localities. The following formula gives the score function for a given locality: $F(e)$:

$$F(e) = \sum_{i=1}^k C_i(e) ; \text{ où } C_i(e) \text{ est le score de la caractéristique } i, i \in \{1, \dots, k\}$$

Figure 2: Use of the form to Enter the Status and Presence of Equipment through the Score Calculation

Source: Loba (2013)

The coefficient assigned to each type of equipment is recorded in the table below.

Modalities	Wording of the Modalities	Coefficient of the Score Function
Geographical accessibility	1= Asphalt	28,78
	2= Track	0
Status	2= sub-prefecture	174,23
	3= Municipality	0
	4= Village center	17,1
Preschool	0= No preschool	0
	1= Preschool present	88,66
Maternity	0= No maternity	0
	1= Presence of maternity	84,29
Dispensary	0= No dispensary	0
	1= Presence of a dispensary	40,69
Subdivision	0= Not subdivided	0
	1= Allotted	4,68
	0= No pump	0
	1= Water tower	244,63
WATER	2= AEP	117,36
	3= 1 pump for less than 1000 inhabitants	50,84
	4= 1 pump for more than 1000 inhabitants	18,34
Electrification	0= No electricity	0
	1= Electricity	134,22
Phone	0= No Phone	0
	1= Telephone	137,82
Market	0= No covered market	0
	1= presence of a covered market	62,01

Table 1: Scores Assigned to the Modalities for the Evaluation of the Level of Equipment of Rural Localities.

Sources: Loba(2013) Calculations on SPAD

The hierarchy of localities by level of equipment is determined from the sum of the coefficient scores for the modalities of the existing variables per village.

In addition, ASSI's (2018) work indicated 320 as the threshold value. Any locality with an equipment index below 320 is considered under-equipped. As for localities with scores between 320 and 500, are relatively equipped. While those with scores above 500 are perceived as highly equipped localities. Thus, the application of the score function model to the localities of the rural area of the district of Abidjan in 2019, a classification of the rural localities of the sub-prefectures of Anyama, Bingerville and Songon could be obtained in order to make a descriptive analysis of the distribution of the level of equipment of the rural territories, before determining the factors of such distribution.

For this study, the data were translated into a series of maps and tables. Thus, for the realization of the basic maps and the spatial distribution of the equipment in the rural space of the district of Abidjan. In addition, the use of the CCT administrative map of the Abidjan district, at a scale of 1:20,000, and the maps of the sub-prefectures of Anyama, Bingerville and Songon from 2000 at a scale of 1:10,000, made it possible to design and produce the map of the structuring of rural areas by rural country, and the maps of the distribution of equipment and population numbers by locality in 2019. These maps have made it possible to spatialize the scores of rural localities by level of equipment from inferential statistics.

3. Results

3.1. The Administrative and Historical Status of Localities, a Determining Factor in the Choice of Localities Eligible for Basic Equipment and Services for the Population

3.1.1. Presentation of Rural Countries in the Abidjan District

In a rural country or canton, a village center is a locality (generally the chief town of a canton) that has a radius of influence of at least 5 km. To this end, the cartography of the structuring of localities by rural country describes the structuring of the area studied by rural country. These rural countries, presented in figure 2, are recorded in tables (2, 3 and 4).

Sub-prefecture	Ethnic Areas	Villages Center	Satellite Villages
ANYAMA-BROFODOUME	Gnan	Ebimpe	Azaguie Blida
		Anyama Adjame	Ahouabo
			Akeikoi
			Quatre-Croix
			Thomasset
	TSON	Brofodoume	Attiekoi
			Debarcadair
			Ahoue
			Kongofon
			Akekoi
		Irho La Me	Debarcadair
			Bebakoi
			Adjin Telegraphe
			Cp-Elais

Table 2: Structure of the Anyama Sub-Prefecture in Rural Areas

Source: Assi (2016)

Sub-prefecture	Ethnic Areas	Villages Center	Satellite Villages
BINGERVILLE	AKWE		AKOUEDO-ATTIE
			ABATTA
			CARRIERE
			AKOUE-SANTE
		Adjame-Bingerville	Sebia Yao
			KOFFIKRO
			AKWE AGBAN
			ANNA
		Gbregbo	M'batto Bouake
		Adjin	Akandje
			AKOUYATE
			ACHOKOI
	Nonkoua	Elokate	Elokato

Table 3: Structuring of the Sub-prefecture of Bingerville in Rural Country

Source: ASSI (2016)

Sub-prefecture	Ethnic Areas	Villages Center	Satellite Villages
SONGON	BADJIN	ABADJIN KOUTE	BIMBRESSO ABADJIN
			ABADJIN DOUME
			SAPH
	BIA	AUDOIN BEUGRETTO	AUDOIN SANTE
	DIAPO	ADIAPOTO	ADIAPOTE
			AYEHOUAHI
			ADIAPOTO 2
			GODOUME
		SONGON-AGBAN	SONGON KASSEMBLE
	SONGON		SONGON DAGBE
			SONGONTE
			SOGON AGBAN ATTIE 2
			SONGON AGBAN ATTIE 1
			KOLOUKRO
			SONGON M'BRATHE
	KOBRI, NONKOUA ET DES, BOBO	KOSSIHOUEN	ANGUEDEDOU
			ABIATHE 2
			NIECKY BONJOUR
			NONKOUAGON
			BAGO
			GUEBO 1
			GUEBO 2

Table 1: Structuring of the Sub-prefecture of Songon in Rural Country
Source: ASSI (2016)

The village centers, or canton capitals, are, by virtue of their historical status, points of convergence for economic activities (daily or weekly markets), and for major customary meetings of the indigenous populations. To this end, the historical or administrative status of these localities in the structuring of rural countries (cantons) could influence the decisions of territorial planners as to which localities should be given priority in the provision of structural facilities.

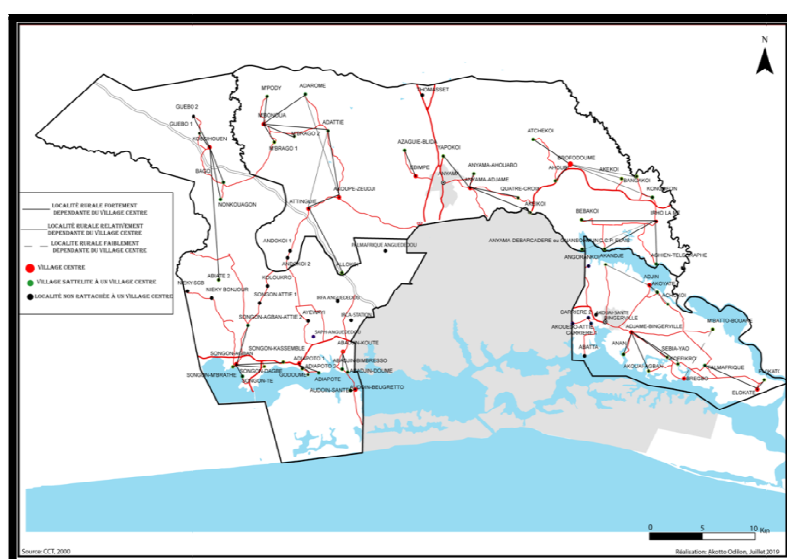


Figure 2 : Structuring of the Rural Area of Abidjan District by Rural Country

The descriptive analysis in figures 2 reveals three (3) sets of localities: first, the village centers (chief town of the canton), those attached to a village center, and finally localities not attached to a village center (including villages that have been displaced and relocated outside the spatial area of the canton, and then the agro-industrial camps). Although some localities in the rural area of the Abidjan district have benefited from certain basic socio-community services and socio-

economic infrastructure, the spatial distribution of these facilities is unevenly distributed, to the point where some localities appear to be marginal (see Figures 3 and 4). In order to verify whether the status of the locality influences the perception of development actors involved in providing basic services to the population, it is necessary to calculate the indices (scores) by locality on the basis of the status of these localities.

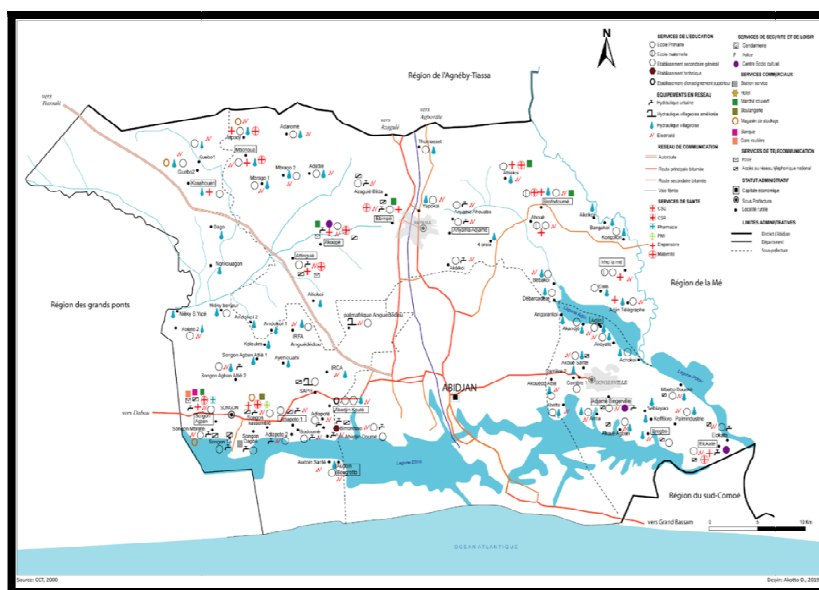


Figure 3 : Spatial Distribution of Facilities in the Rural Area of Abidjan District

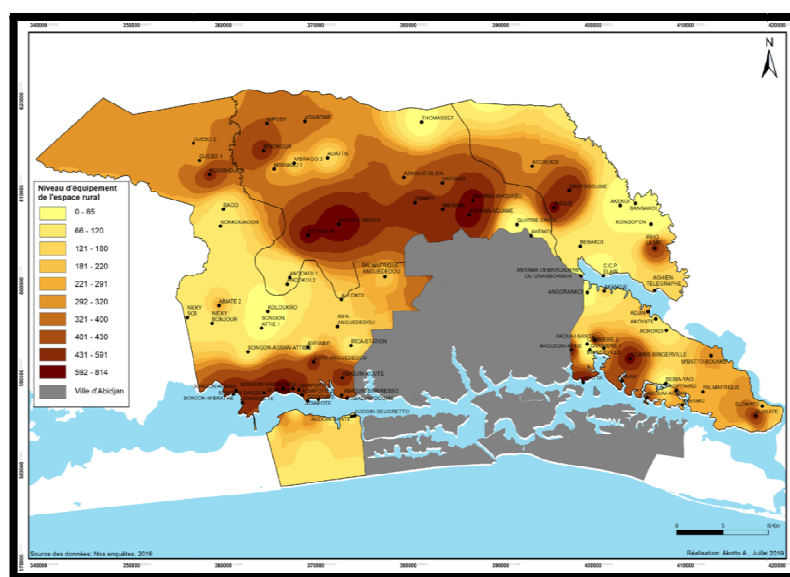


Figure 4 : Classification of Rural Localities in Abidjan District by Level of Equipment in 2019

3.1.2. The Indices (Scores) of the Level of Equipment in Villages Based on the Historical or Administrative Status of the Localities

- The average index of the level of facilities in the central villages and villages that are the chief town of a sub-prefecture

The mapping of the level of equipment of rural localities in the Abidjan district (Figure 4) also indicated that localities with a special status (chief town of a sub-prefecture, village center) have the best scores by rural country and appear by the hue of the colors to have a score generally above 320. To this end, the calculation of the average index of the level of equipment of villages with a special status is necessary to corroborate this hypothesis (see Tables 5, 6 and 7). To this end, the calculation of the average index of the level of facilities in the central villages and the village head of a sub-prefecture in the rural areas of Abidjan district corresponds to the total of the scores posted by these localities divided by the total number of villages shown in Table 5.

Localities	Status	Score	Level of Equipment of Localities
SONGON_KASSEMBLE	Sub- prefecture chief	772,07	
BROFODOUME	central village/Sub-prefecture chief	598,25	
EBIMPE	central village	536,24	Highly equipped
AKOUE_ZEUDJI	central village	814,4	
ELOKATE	central village	525,61	
MBONOUA	central village	549,31	
ADJAME BINGERVILLE	central village	653,6	
ABADJIN_KOUTE	central village	564	
SONGON_AGBAN	central village	525,56	
KOSSIHOUEN	central village	502,8	
IRHO LA ME	central village of island territories	422,86	
BREGBO	central village of island territories	332,14	Relatively equipped
ADJIN	central village of island territories	349,76	
AUDOIN BEUGRETTO	central village of island territories	244	Low equipped

Table 5: Average Index of the Level of Equipment in Central Villages and Villages That Are the Head of Sub-Prefectures in the Rural Area of Abidjan District

Source: ASSI (2019)

- Average index of the level of equipment in the central villages and sub-prefecture chief towns:

$$7390,6 / 14 = 527,9$$

This average index is well above 500, which shows that the majority of rural towns and sub-prefecture capitals (80% of all such localities) in the rural area of Abidjan are well equipped.

The average index of the level of equipment of satellite villages attached to a central village.

Localities	Status	Score	Level of Equipment of Localities
ATTINGUE	Satellite village attached to central village	652,6	
AHOUE	Satellite village attached to central village	636,5	
AHOUABO	Satellite village attached to central village	669,13	
AKOUEDO_ATTIE	Satellite village attached to central village	547,89	Highly equipped
ABATTA	Satellite village attached to central village	636,5	
AKOUE_SANTE	Satellite village attached to central village	511,22	
SONGON DAGBE	Satellite village attached to central village	550,13	
SAPH	Satellite village attached to central village	511,82	
SONGON MBRATHE	Satellite village attached to central village	511,52	
AZAGUIE BLIDA	Satellite village attached to central village	354,67	
ATTIEKOI	Satellite village attached to central village	345,29	
AKEIKOI	Satellite village attached to central village	422,86	
ADAROME	Satellite village attached to central village	344,22	
M'PODY	Satellite village attached to central village	381,84	
YAPOKOI	Satellite village attached to central village	422	Relatively equipped
AKOUE_AGBAN	Satellite village attached to central village	410,02	
ELOKATO	Satellite village attached to central village	324,26	
KOFFIKRO	Satellite village attached to central village	344,92	
M'BATTO BOUAKE	Satellite village attached to central village	325,73	
ANAN	Satellite village attached to central village	422,86	
ABADJIN DOUME	Satellite village attached to central village	485	
BIMBRESSO ABADJIN	Satellite village attached to central village	422,86	
ADIAPOTE	Satellite village attached to central village	394,8	
ADIAPOTO 2	Satellite village attached to central village	484,87	
GODOUME	Satellite village attached to central village	394,8	
SONGONTE	Satellite village attached to central village	422,86	

Table 6: Average Index of the Level of Equipment of Satellite Villages in the Rural Area of Abidjan District

Source: ASSI (2019)

Table 6 shows that 8 localities are highly equipped (i.e., 32% of the localities listed in Table 6), while 17 others are relatively equipped (because the average score is above 320). To this end, the average index of the level of equipment of satellite villages attached to a central village is:

$$11931,17 / 26 = 458,89$$

This index, clearly higher than 320 and lower than 500, reveals that these localities are relatively equipped.

3.1.2.1. The Average Index of the Level of Equipment of Island Territories and Landlocked Localities in the Rural Area of Abidjan District.

Localities	Status	Score	Level of Equipment of Localities
ADONKOI 1	Satellite localityno attached to a central village	138,9	
ADONKOI 2	Satellite localityno attached to a central village	138,9	
ADATTIE	Satellite localityno attached to a central village	227,56	
ALLOKOI	Satellite localityno attached to a central village	256	
MBRAGO 2	Satellite localityno attached to a central village	256,26	
MBRAGO 1	Satellite localityno attached to a central village	296,95	
QUATRE-CROIX	Satellite localityno attached to a central village	24	
THOMASSET	Satellite localityno attached to a central village	28,78	
DEBARCADAIRE	island territories	136,9	Low equipped
KONGOFON	Satellite localityno attached to a central village	23	
AKEKOI	Satellite localityno attached to a central village	21	
BANGAKOI	Satellite localityno attached to a central village	22,8	
BEBAKOI	island territories	138,9	
ADJIN_TELEGRAPHE	island territories	256,26	
CP_ELAIS	island territories	23	
CARRIERE	Large camps	17	
SEBIA_YAO	Satellite localityno attached to a central village	132,27	
AKANDJE	Island village	256,26	
AKOUYATE	Island village	138,9	
ACHOKOI	Island village	138,9	
AYEOUAHI	Satellite localityno attached to a central village	138,9	
SONGON- AGBAN-ATTIE 2	Satellite localityno attached to a central village	257,24	
SONGON-AGBAN ATTIE 1	Satellite localityno attached to a central village	86,3	
KOLOUKRO	Satellite localityno attached to a central village	79,45	
ANGUEDEDOU	Large camps	245,9	
ABIATHE 2	Satellite localityno attached to a central village	305,8	
NIECKY SCOBAYACE	Large camps	157,24	
AUDOIN SANTE	island territories	138,9	
BAGO	Satellite localityno attached to a central village	179,5	
GUEBO 1	Satellite localityno attached to a central village	310,25	
GUEBO 2	Satellite localityno attached to a central village	310,25	
IRFA ANGUEDEDOU	Large camps	245,9	
PALMAFRIQUE ANGUEDEDOU	Large camps	274,89	
NIECKY BONJOUR	Large camps	157,24	

Table 7: The Level of Equipment in Satellite Localities Not Attached to a Central Village and Island Territories in the Rural Area of the Abidjan District

Source: ASSI (2019)

Average Index for All Island Territories and Satellite Localities Not Attached to a Central Village
 $5560,3 / 34 = 163,53$

The average score for the level of equipment in landlocked and island localities is below 320. This score reveals that these localities are poorly endowed with social and collective facilities for their populations.

In sum, a comparative analysis of tables 5, 6 and 7 reveals that localities with a special status (chief town of a sub-prefecture, central village) have a better level of provision of social and community facilities than satellite villages. In addition, it should be noted that island localities, those not attached to a central village or those with no real historical or administrative status remain marginal in the provision of social and community facilities in rural areas.

3.3. The Impact of the Geographical Accessibility of Localities on the Spatial Distribution of Facilities in Rural Areas

An analysis of tables 8, 9 and 10 shows that localities located near a main communication axis have a better level of facilities than those located in the heart of the forest zone and island villages. Table 8 shows that 67% of the highly equipped rural localities in the Anyama district are accessible by asphalt road. In addition, they are located near the northern highway, the A1 national highway and the Abobo-Alepe inter-urban road. In addition, 22% of the highly equipped localities are less than 4 km from a paved road, while 11% are landlocked.

Highly Equipped Locality	Status	Geographic Location	Score
EBIMPE	Village center	Crossed by a paved road	536,24
M'BONOUA	Satellite village	In forest area (enclave)	549,31
BROFODOUME	Village center	In the vicinity of an asphalt road	598,25
AHOUE	Satellite village	Crossed by a paved road	636,5
ATTINGUIE	Village center	Crossed by a paved road	652,6
ANYAMA AHOUBO	Satellite village	In the vicinity of an asphalt road	669,7
ANYAMA ADJAME	Village center	In the vicinity of an asphalt road	689,1
AKOUE	Village center	Crossed by a paved road	814,4

Table 2 : Geographic Location and Status of Highly Equipped Localities in the Anyama Sub-Prefecture in 2019

Source: Classification Map of Rural Localities in Abidjan District by Level of Equipment in 2019

In the Songon district, it is noted that all the localities located along the A3 national road (Abidjan-Dabou axis) are highly equipped (see table 9).

Highly Equipped Locality	Status	Geographic Location	Score
KOSSIHOUEN	Village center	Crossing by the northern highway	502,08
SONGON M'BRATHE	Satellite village	Crossed by the national A3	511,52
SAPH ANGUÉDEDOU	Satellite village	Crossed by the national A3	511,82
SONGON AGBAN	Village center	Crossed by the national A3	525,56
ADIAPOTO 1	Village center	Crossed by the national A3	528,62
SONGON DAGBE	Satellite village	Crossed by the national A3	550,13
ABADJIN KOUTE	Village center	Crossed by the national A3	564
SONGON KASSEMBLE	Chief town of sub-prefecture	Crossed by the national A3	772,07

Table 3 : Geographical Situation and Status of the Highly Equipped Localities of the Sub-Prefecture of Songon in 2019

Source: Classification Map of Rural Localities in Abidjan District by Level of Equipment in 2019

In addition, the locality of Kossihouen located on the northern highway is also highly equipped. As for the district of Bingerville, 80% of the rural localities that are highly equipped are largely accessible by asphalt road or located less than 2 km from an asphalt road (see table 10).

Highly Equipped Locality	Status	Geographic Location	Score
AKOUE-SANTE	Village center	Crossed by a paved road	511,22
ELOKATE	Village center	Crossed by a paved road	525,61
AKOUEDO-ATTIE	Village center	Crossed by a paved road	547,89
ABATTA	Village center	Crossed by a paved road	636,5
ADJAME BINGERVILLE	Village-centre	Crossed by a paved road	653,6

Table 4 : Geographical Situation and Status of the Highly Equipped Localities of the Sub-Prefecture of Bingerville in 2019

Source: Classification Map of Rural Localities in Abidjan District by Level of Equipment in 2019

Although there are a few exceptions to this rule, 87% of the best-equipped rural villages in the Abidjan district are located near or crossed by the northern highway, a national road or an interurban road (see tables 8, 9 and 10).

Calculation of the average index of the level of equipment of rural localities in the district of Abidjan located near an asphalt road

Level of Equipment of Localities	Scores
KONGOFON	5
THOMASSET	28,78
ALLOKOI	256
AZAGUIEBLIDA	354,67
YAPOKOI	422
EBIMPE	536,24
BROFODOUME	598,25
AHOUE	636,5
ATTINGUIE	652,6
ANYAMA AHOUBO	669,73
ANYAMA ADJAME	689,12
AKOUE	814,4
AKANDJE	256,26
BREGBO	302,14
ADJIN	309,76
M'BATTO BOUAKE	325,73
AKOUE-AGBAN	410,02
ANNA	422,86
AKOUE-SANTE	511,22
AKOUE-ATTIE	547,89
ABATTA	636,5
ADJAME BINGERVILLE	653,6
BIMBRESSO	422,86
SONGONTE	422,86
ADJAPOTO II	484,87
ABADJIN DOUME	485
KOSSIHOUEN	502,8
SONGON M'BRATHE	511,52
SAPH ANGUEDEDOU	511,82
SONGON AGBAN	525,56
ADJAPOTO I	528,62
SONGON DAGBE	550,13
ABADJIN KOUTE	564
SONGON KASSEMBLE	772,07
TOTAL	16321,38
Average index for all locations	480,04

Table 11: Average Index of Localities Located Near Asphalt Road in the Rural Area of Abidjan District
Source: Classification Map of Rural Localities in Abidjan District by Level of Equipment in 2019

This average index, which is higher than the 320 average, indicates that 77% of localities located near a paved road are at least relatively equipped. It reveals that the majority of rural localities crossed or located near a paved road are at least relatively equipped.

These statistical results confirm the variation in the color of the map, which is characterized by a gradual decline in the level of equipment of rural localities when we leave the localities located on the edge of a main asphalt road (northern highway, the A1 and A3 national roads, interurban roads) for the peripheral and island localities. To this end, the decrease in color hue is observable both in the rural area of the district of Abidjan and at the level of the sub-prefectures constituting the level of equipment when we leave villages located near an asphalt road for much more distant localities and localities.

In sum, the analysis of the maps and the calculation of the indices of the level of equipment show that the factors relating to administrative status and geographical location determine the degree and quality of equipment provision.

3.4. The Impact of Demographic Weight on the Spatial Distribution of Facilities in Rural Areas

Analysis of Tables 12, 13 and 14 shows that population concentrations have little influence on the spatial distribution of facilities in the rural area.

Indeed, except the sub-prefecture of Anyama where the localities of Akoupé-Zeudji, Attinguié, Ebimpé, Ahoué or Songon-Agban and Songon Mbrathé where the demographic weight influences the level of equipment in the territories, it is clear that the demographic weight has little influence on the dynamics of the provision of social and community equipment in the rural territories, in view of the scores for each of these localities (see tables 12, 13 and 14).

In fact, localities such as Attinguié, Ahoué, Songon-Mbrathé have higher scores than some of the central villages, due to the weight of the demographic size of their locality and the geographical accessibility of these areas (Table 12).

N°	LOCALITIES	STATUS	Geographical accessibility	POPULATION 2014	SCORE
1	SONGON AGBAN . . .	central village	Easily accessible	11554	525,56
2	AKOUE	central village	Easily accessible	8743	814,4
3	ATTINGUIE	Satellite village attached to central village	Easily accessible	7294	652,6
4	SONGON M'BRATHE . . .	Satellite village attached to central village	Easily accessible	5899	511,52
5	EBIMPE	central village	Easily accessible	3949	536,24
6	ABADJIN KOUTE	central village	Easily accessible	3549	564
7	SONGON DAGBE	Satellite village attached to central village	Easily accessible	3322	550,13
8	ADJAME BINGERVILL . .	central village	Easily accessible	3198	653,6
9	ADJAPOTE	Satellite village attached to central village	Easily accessible	3002	394,8
10	AHOUE	Satellite village attached to central village	Easily accessible	2971	636,5
11	SONGON KASSEMBLE . .	Sub-prefecture chief	Easily accessible	2721	772,7
12	SAPH ANGUÉDEDOU . .	Big hamlet	Easily accessible	2615	511,82
13	BROFODOUME	central village/Sub- prefecture chief	Easily accessible	2613	598,5
14	KOSSIHOUEN	Central village	Easily accessible	2610	502,8
15	AZAGUIEBLIDA	Satellite village attached to central village	Easily accessible	2279	354,67
16	YAPOKOI	Satellite village attached to central village	Easily accessible	2196	422
17	BREGBO	Central village	Easily accessible	2050	332,14
18	BIMBRESSO	Satellite village attached to central village	Easily accessible	2010	422,86
19	SONGONTE	Satellite village attached to central village	Easily accessible	1833	422,86
20	M'BATTO BOUAKE . . .	Satellite village attached to central village	Easily accessible	1727	325,73
21	ADJAPOTO I	Satellite village attached to central village	Easily accessible	1713	528,62
22	AKOUE-SANTE	Satellite village attached to central village	Easily accessible	1645	511,22
23	ANNA	Satellite village attached to central village	Easily accessible	1633	422,86
24	ABATTA	Satellite village attached to central village	Easily accessible	1626	636,5
25	ALLOKOI	Satellite village attached to central village	Easily accessible	1517	256
26	ANYAMA AHOUBO . . .	Satellite village attached to central village	Easily accessible	1504	669,13
27	ANYAMA ADJAME . . .	Central village	Easily accessible	1473	689,12
28	ABADJIN DOUME . . .	Central village	Easily accessible	1428	485
29	AKEIKOI	Satellite village attached to central village	Easily accessible	1392	422,86
30	AKEIKOI	Satellite village attached to central village	Easily accessible	1237	21
31	AKOUE-AGBAN	Central village	Easily accessible	1184	410,02
32	SONGON AGBAN AT . .	Satellite village attached to central village	Easily accessible	1115	257,24
33	GUEBO I	Satellite village attached to central village	Easily accessible	1110	310,25
34	ADJAPOTO II	Satellite village attached to central village	Easily accessible	995	484,87
35	GODOUME	Satellite village attached to central village	Easily accessible	994	394,8
36	ADJIN	Central village	Easily accessible	743	349,76
37	KONGOFON	Satellite village attached to central village	Easily accessible	614	23
38	AKOUE-DO-ATTIE . . .	Satellite village attached to central village	Easily accessible	613	547,89
39	KOFFIKRO	Satellite village attached to central village	Easily accessible	534	344,92
40	BIMBRESSO ABADJIN .	Satellite village attached to central village	Easily accessible	507	422,86
41	SEBIAYAO	Satellite village attached to central village	Easily accessible	484	132,27

Table 12: The Weight of Demographic Size on the Level of Equipment in Easily Accessible Localities
Source: ASSI (2019)

N°		Status	GEOGRAPHICAL ACCESSIBILITY	POPULATION 2014	SCORE
1	NIECKY BONJOUR	Large camps	ENCLAVE	5042	157,24
2	NIECKY SCOBAYACE	Large camps	ENCLAVE	3816	157,24
3	PALMAFRIQUE ANGUÉDEDOU .	Large camps	ENCLAVE	2780	274,89
4	PALMINDUSTRIE ELOKA	Large camps	ENCLAVE	2329	274,9
5	IRFA ANGUÉDEDOU	Large camps	ENCLAVE	1410	245,9
6	CCP ELAIS	Large camps	ENCLAVE	1218	23
7	IRCA STATION	Large camps	ENCLAVE	1135	234,6
8	CARRIERE 2	Large camps	ENCLAVE	1068	17
9	CARRIERE	Large camps	ENCLAVE	1005	25
10	QUATRE CROIX	Large camps	ENCLAVE	729	24
11	ANGORANKOI	Large camps	ENCLAVE	679	5

Table 13: The Weight of Demographic Size on the Level of Equipment in Large Camps
Source: ASSI (2019)

Table 13 shows that demographic concentration has little, if any, influence on the choice of institutional actors to provide socio-community facilities to camps in Abidjan District. Whereas 28.5% of the level of equipment provision in enclave localities is influenced by demographic weight (see table 14).

N°	LOCALITIES	STATUS	GEOGRAPHICAL ACCESSIBILITY	POPULATION 2014	SCORE
1	AUDOIN-BEUGRETO.	CENTRAL VILLAGE	ENCLAVE	3255	244
2	GUEBO II.	Satellite village attached to central village	ENCLAVE	2736	245,9
3	M'PODY	Satellite village attached to central village	ENCLAVE	2731	381,84
4	ELOKATE.	CENTRAL VILLAGE	ENCLAVE	2703	525,65
6	ATTIEKOI.	Satellite village attached to central village	ENCLAVE	2489	345,29
7	M'BONOUA.	CENTRAL VILLAGE	ENCLAVE	2476	549,31
8	ELOKATO.	Satellite village attached to central village	ENCLAVE	2268	324,26
9	IRHO LAME.	CENTRAL VILLAGE	ENCLAVE	2169	422,86
10	ADAROME.	Satellite village attached to central village	ENCLAVE	2093	344,22
11	ADATTIE.	Satellite village attached to central village	ENCLAVE	1675	227,56
12	BAGO.	Satellite village attached to central village	ENCLAVE	1488	179,5
13	AUDOIN-SANTE.	Satellite village attached to central village	ENCLAVE	1422	138,9
14	AYEQUAHI	Satellite village no attached to central village	ENCLAVE	1280	138,9
15	SONGON AGBAN ATTIE I.	Satellite village no attached to central village	ENCLAVE	968	86,3
16	KOLOUKRO	Satellite village no attached to central village	ENCLAVE	920	79,45
17	M'BRAGO I.	Satellite village attached to central village	ENCLAVE	917	296,95
18	ANYAMA DEBARCADAIRE.	Satellite village no attached to central village	ENCLAVE	882	136,9
19	ADJIN-TELEGRAPHE.	Satellite village no attached to central village	ENCLAVE	882	256,26
20	AKOYATE.	Satellite village no attached to central village	ENCLAVE	818	138,9
21	ACHOKOI.	Satellite village no attached to central village	ENCLAVE	611	138,9
22	NONKOUAGNON.	Satellite village no attached to central village	ENCLAVE	570	138,9
23	ADONKOI 1	Satellite village no attached to central village	ENCLAVE	480	138,9
24	ADONKOI 2	Satellite village no attached to central village	ENCLAVE	473	138,9
25	ABIATE II.	Satellite village no attached to central village	ENCLAVE	426	305,8
26	BEBAKOI.	Satellite village no attached to central village	ENCLAVE	396	138,9
27	AKANDJE.	Satellite village attached to central village	ENCLAVE	386	256,26
28	BANGAKOI.	Satellite village no attached to central village	ENCLAVE	336	22,8

Table 14: The Impact of Demographic Weight on the Level of Equipment in Landlocked Localities
Source: ASSI (2019)

Indeed, the localities of Mpody, Elokate, Attiékoï, Elokato, Irho la Mé, Mbonoua, to name but a few, are relatively well equipped despite the fact that they are landlocked.

In sum, 17% of the localities with a large population influence the choices of the actors involved in serving the rural areas of the Abidjan district

4. Discussion of the Results

The data in this study are limited and were used in the rural areas of the Abidjan district. However, the use of these data has made it possible to understand the motivations of the institutional actors involved in providing basic socio-community facilities to the population in rural areas.

An analysis of the results in relation to the objective shows that the unequal distribution of facilities in rural areas depends on the perception of the institutional actors involved in providing basic services to the population in rural areas of the Abidjan district.

Spatial disparities do exist in the provision of basic facilities and services to the population. Indeed, localities located around paved roads and having an administrative, economic and demographic status have a better supply of facilities than island territories and those located in the heart of forest and plantation areas. This situation of spatial disparity observed in the distribution of facilities in the rural areas of Abidjan District is determined by historical, administrative, economic, demographic and geographic parameters. Analyses show that in the Anyama district, rural localities with a high administrative status, or with a strong economic and socio-demographic dynamism, are better endowed with basic services for the population than the island and forest localities. As for Bingerville, it was noted that villages with strong urban influences and those located along the Ebrié lagoon have better basic services than those bordering the Potou and Adjin lagoons (in the northern part of the district). While in Songon, it is noted that the localities in the south (located along the Abidjan-Dabou axis) had overall much more public services to the populations and were generally better equipped than those in the north, ASSI (2018).

This reality beyond its local context is also perceived, at the regional and even national level according to MEMPD (2006). Moreover, Paul De Viguerie (2013) confirms this idea when he states that economic, social and environmental spatial inequalities often arise between the territories of the South and those of the North, however these inequalities vary according to regional and local criteria and according to territorial scales. On the other hand, he explains that the influence of the big cities and metropolises on the surrounding territories is one of the causes of the persistence of spatial inequalities between the spaces of the territories, whether regional or local. Regarding the territorial districts, he affirms that the institutional perimeters or those with local or regional institutions benefit a lot from the infrastructures and public services than the peripheral perimeters. Also, he adds, that the evolution of the level of equipment evolves in a concentric circle according to the status of the territories and the proximity of the localities of the local or regional pole of a life basin. Thus, the territories housing the institutional services, including the chief towns of the districts and the village centers, are much better off in terms of public services than the living areas surrounding the central poles.

This reality (as mentioned by PAUL DE VIGUERIE, 2013) is just as noticeable in the districts of Bingerville and Songon. Indeed, the presence of administrative, political and economic centers in the southern part of the two aforementioned sub-prefectures has contributed to a better provision of facilities in the southern localities. Thus, following the example of Songon, where it has been noted that the presence of central hubs in this area has meant that localities located along the Abidjan-Dabou axis are better equipped than those in the north, the district of Bingerville is no exception to the rule. In Anyama, however, this is more evident in terms of the status of localities and population concentrations. It has been observed that demographic size also influences the spatial distribution of facilities in the Anyama sub-prefecture. Indeed, the fact that the rural towns of Songon-Agban, Akoupé-Zeudji, Attinguié and to a lesser degree Ebimpé, due to their demographic size, have a much greater concentration of structuring and socio-collective infrastructures than the countryside with a smaller population.

In addition, the white paper on regional development in Tunisia (2011), argues that it is the unequal distribution of wealth between territories that is the cause of spatial disparities between territories and should be considered to solve it by starting with a distribution of wealth between localities of the same local or regional space. This report also emphasizes that this unequal distribution of goods between regional and local territories causes spatial imbalances, some of which are at levels that are unsustainable for society. It then draws up a table describing spatial inequalities in terms of facilities between localities in the south and those in the interior of the country. This situation is also illustrated in the rural areas of the Abidjan district through an analysis of the spatial distribution of these public services to the population in the rural localities of this area.

To this end, the fact that the Abidjan-Dabou axis was the first interurban axis in the Songon district, and that all road traffic from the southwest to Abidjan passed through this axis well before 2000, was one of the factors that led to the presence of a variety of public services for the population along this interurban route in the rural area of the Abidjan district. To this end, the presence of various agro-industrial structures, the densification of economic activities, the evolution of the administrative status of this territory and the easy access to the economic capital by the asphalt axis, in this area of the district have favored the establishment of several socio-economic services (a post office, a service station, bank branches, a bakery, a covered market ...) in the localities along the axis Abidjan-Dabou. This idea is also supported in the MEMPD report (2006). It confirms our comments when this report relates that according to the five-year plan of 1971-1975 in Côte d'Ivoire, land-use planning strategies favored the development of the southern territories through the establishment of agro-industrial structures on the coastal strip.

As for the island localities of Anyama and the north of the districts of Bingerville and Songon, they appear to be less endowed with socio-community facilities, since most of the localities appear to be more recent than those in the south of Songon and the center and northwest of Anyama, as well as others that have long remained isolated. To this end, these territories are marginal in terms of equipment because of the difficult access to these villages, the presence of rainforest vegetation separating these villages and the agro-industrial camps from the village centers, and the geographic distance separating these localities from the main asphalt roads. To this end, analysis of the equipment maps (figures 3 and 4) and the history of the villages showed that the Guebo II villages of Nonkouagon and Kossihouen in the Songon district are much more recent than those of Bago and Guebo I and many of the southern localities. While in the Anyama district that the localities of Anyama-debark, Bebakoi, Adjin telegraph are former settlements of populations living in Ahoué, Brofodoumé and Attiekoi in the district of Anyama. To this end, the weak presence of village localities in the north of Bingerville and Songon and the island territories of Anyama before the 1980s was a handicap for these areas, although today efforts are being made to improve the level of facilities present according to ASSI, (2018, P 363).

Moreover, this unequal distribution of facilities between the localities in the south and north of Songon is due to a concentration of 65% of the localities in the entire district in the communal area. This concentration of localities in the south, as opposed to the north, could explain this unequal distribution of facilities between the south and the north, although some island villages appear to be very poorly equipped in terms of services to the population. As for the rural localities in the sub-prefectures of Anyama and Bingerville, this unequal distribution of public services to the population is linked to the administrative, economic and demographic status of the rural localities.

5. Conclusion

In short, the inventories conducted in 2019 show that the level of facilities in localities is a function of the spatial hierarchy of villages, and is determined as much by the positioning of a locality as by its geographical accessibility to a rank A road. In addition, the level of facilities in localities in the rural area of the Abidjan district is also determined by administrative, historical and economic factors. Thus, in most cases, it is noted that the further one moves away from rural localities located near an asphalt road or those with a special administrative or economic status to a much more remote countryside, the level of equipment regresses considerably from a central pole to a peripheral locality. Thus, villages located near interurban communication routes and the northern highway, as well as those with a special administrative status, appear to be better equipped than those located in remote forest areas and island territories.

6. References

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