

Governance, peace, and security perception index: Methodological aspects and application in the WAEMU member states

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Abstract. By developing a methodology to measure citizens' perceptions of governance, peace, and security, AFRISTAT has provided authorities at various levels with a policymaking tool. The governance, peace, and security perceptions index and its components are measured at the sub-regional level and are based on population groups. The methodology is based on the method that has been adopted to calculate the Global Governance Index and was applied to data from a household survey by using the governance, peace, and security module. Applying the data from the Integrated Regional Survey on Employment and the Informal Sector of the eight WAEMU member states made it possible to present perceptions of citizens, aged 18 and above, on "human rights and participation," "rule of law," and "peace and security." The results indicate that individuals aged 18 and above in the WAEMU member states have good perceptions of governance, peace, and security with a perception index of 0.701. The perception of the rule of law is low (0.524), which is reflected in the low perception of the judicial system and the absence of corruption.

Keywords: Governance, peace, security, index, ERI-ESI, WAEMU, test value, ascending hierarchical clustering, profile, survey data

1. Introduction

Based on data analysis of the Integrated Regional Survey on Employment and the Informal Sector (French acronym ERI-ESI) of the West African Economic and Monetary Union (WAEMU) member states, AFRISTAT proposed a methodology to calculate the citizens' governance, peace, and security perception index (I_{GPS}). This index aims to help policymakers understand the citizens' perception of democracy and human rights, level of confidence in public institutions, perceived rate of corruption, feeling of insecurity, and other factors. It is intended to be a comprehensive and evolving indicator, which will be improved based on changes in the questionnaire and methodological advancements.

This article describes the methodological approach used to calculate the governance, peace, and security perception index and its indicators. It also presents the indices and profiles of the administrative regions of the WAEMU member states.

2. Context

For a long time, demand for data in Africa has been on traditional areas of macroeconomic management and sectoral programs and so National Statistics Offices (NSOs) and government ministries, departments and agencies (MDAs) have been producing data to meet the needs of:

- Macroeconomic frameworks including National Development Plans, Poverty Reduction Strategies, MDAs themselves, Human Development Reports and Medium Term Expenditure Frameworks, and
- Sectoral policies and programs on agriculture, education, health, housing, infrastructure, water, etc.

However, there is now increasing demands in the world, particularly in Africa for data on new policy and development areas that include human rights and freedom, democracy and governance (what Statistics South Africa has termed 'holy cows' as these were outside

the scope of statistical work in most countries). In fact, since the end of the 1990s, the promotion of good governance has become a priority for large international organizations such as the World Bank and the IMF, in the process of implementing their programs of support for development and poverty reduction. This interest was the basis for the development of indicators and data collection tools on governance in sub-Saharan African countries.

Governance, peace and security (GPS) are a major concern and a strategic issue for the African Union as a prerequisite for socio-economic and political development of Africa. In fact, these are part of the strategic pillars of the African Union Commission that include (i) Peace and Security, (ii) Integration, Development and Cooperation (iii) Shared Values, and (iv) Institutional Strengthening and Capacity Building. At global level, the Sustainable Development Goal (SDG) number 16 aims to “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels”.

It was mentioned earlier that the African statistical community together with pan-African organizations developed the Strategy for the Harmonization of Statistics in Africa (SHaSA) to support the African integration agenda and development processes. Realizing the importance of supporting Governance, Peace and Security to the said agenda and processes, SHaSA provided for the establishment of Technical Working Groups on Governance, Peace and Security (TWG-GPS). A total of 13 working groups on various areas were established. In November 2012, the Committee of Directors General of African NSOs approved the methodology, an action plan and 5 year budget to take the work forward. Twenty (20) countries officially confirmed their interest in piloting SHaSA-GPS. In addition, a Praia City Group¹ on GPS statistics was established at continental level to take this work forward. At global level, the 45th Session of the UN Statistical Commission considered the proposal for the establishment of a City Group on Governance, Peace and Security which demonstrates a willingness to provide GPS statistics.

3. Importance of the citizens’ governance, peace, and security perceptions index

Over the past decade, governance, human rights, peace, and security within sub-Saharan Africa have be-

come topical subjects that are of interest to everyone, and they have experienced a resurgence of interest with the adoption of the Sustainable Development Goals (SDGs) for 2030 and Africa’s Agenda 2063. However, it is difficult to have a comprehensive idea of citizens’ perceptions by analyzing the responses of all citizens through questionnaires.

Although some of the existing international measures of governance use data on citizens’ perceptions for some of the dimensions of these indices, they are based on aggregates measured at the country level and then ranked between countries based on a reference country. Therefore, it is difficult to use them at the country level to analyze differences in perceptions among regions and groups.

The indicators, which have three functions² (to inform, alert, and enable action and steering), seem to be the most suitable tools to understand citizens’ perceptions of governance in sub-Saharan Africa. The implementation of a citizens’ governance, peace, and security *perception index* provides information on the measurement of governance from the citizens’ point of view and alert policymakers. It is also used to set up strategies and strengthen the actions of policymakers to ensure good governance for development and sustainability of the citizens.

The governance, peace, and security perception index is based on citizens’ experience and perceptions of the efforts of authorities at various levels in public management, justice, and security. It is an intra-country measure, which gives perception of several dimensions of governance, unlike some internationally developed indices that rank countries with the country assumed to be in the best position.

It is designed to:

- Assess/appraise citizens’ perceptions of GPS at national, regional, and local levels.
- Monitor changes in public perceptions over time.
- Have a barometer to anticipate tensions and threats to security (crises and conflicts).

The I_{GPS} is designed as a comprehensive and evolving indicator, which will be improved based on changes in the questionnaire and methodological advancements in the construction of composite indices and critics.

The I_{GPS} is a policymaking tool with the following purpose:

¹Praia is the capital city of *Cabo Verde* in West Africa.

²Renaud FRANCOIS (2008).

- To encourage policymakers and development stakeholders to act and respond to the current state of governance, democracy, human rights, peace, and security.
- To provide a comprehensive vision of governance and its indicators.
- To propose an intra-country comparison and an analysis of the citizens' profile.

4. Data and methodology

4.1. Data

The data used to calculate the I_{GPS} are from the Governance, Peace, and Security in the Strategy for the Harmonization of Statistics in Africa (GPS/SHaSA) questionnaire. The ERI-ESI organized by the National Statistics Office (NSOs) of WAEMU member states made it possible to implement this version of the methodology for calculating the I_{GPS} .

The ERI-ESI, conducted in 2017 and 2018 in WAEMU member states, is representative of each of the regions of the eight WAEMU member states. In Mali, the survey was not conducted in the Kidal region due to security reason.

The survey used household, informal sector, and employment questionnaires for individuals aged 10 and above, and it included a GPS module that was administered to individuals aged 18 and above in selected households.

In creating the I_{GPS} , we considered:

- The observation unit: Individuals aged 18 and above.
- The unit of analysis: Households.

The information collected on individuals aged 18 or above through the GPS module was brought back to their households to calculate the elementary indices and the various dimensions of the indices. The transition from the observation unit to the unit of analysis (households) was done by averaging and normalizing the householders' responses.

Some variables, such as dichotomous and ordinal variables, were recoded to make them compatible with the objective. This technique ensures harmonization in the variable coding system. Indeed, for certain dichotomous variables which express a good appreciation of a topic, the code given is "0" and for others "1". Thus, the code "1 = Yes" will be used to express a good appreciation for any topic.

- Dichotomous variables were coded 1 = Yes and 0 = No.

- The ordinal variables "1 = Very Much 2 = Much 3 = Not really 4 = Not at all" were recoded "4 = Very Much 3 = Much 2 = Not really 1 = Not at all".

Otherwise, the importance of the disaggregation of data on governance is no longer to be demonstrated and allows for a better analysis of the concept of "leaving no one behind". Indeed, the development of individual profiles according to their assessment of the governance situation in the country makes it possible to take into account the concerns of different layers of the population. In addition, meeting the demands of decentralization has become a priority for the national statistical system, hence the need to produce sub-national data.

4.2. Methodological aspects of constructing the perception index on GPS

4.2.1. Different dimensions and their indicators

The index of citizens' perceptions of GPS is based on three dimensions: (i) human rights and participation, (ii) the rule of law and, (iii) peace and security. Each of the dimensions is made up of sub-indicators under which the various elementary indices calculated were grouped. The dimensions used to calculate the I_{GPS} are based on that of the GPS/SHaSA.

The following figure shows the conceptual framework of the index.

4.2.2. Development of the I_{GPS}

The methodological approach used to calculate the I_{GPS} is inspired by the method adopted for the calculation of the Global Governance Index (2009) and the method Alkire and Foster (2015) used to analyze multi-dimensional poverty. The result is expressed on a scale of 0 (the worst possible result) to 1 (the best possible result). This methodology is applied to individual data obtained from households survey through the GPS module.

Data aggregation approach, calculation, and standardization of elementary indices Let S_{ij} represent the average of the values of variable i obtained from all respondents in household j . The normalization for variable i in household j , denoted as x_{ij} , is given as:

- $x_{ij} = \frac{S_{ij} - \min_k \{S_{ik}\}}{\max_k \{S_{ik}\} - \min_k \{S_{ik}\}}$ when the variable has a positive impact on the index or sub-index to be calculated.

or

Table 1
Sample surveyed for the ERI-ESI GPS / SHaSA module by country

	Benin	Burkina Faso	Côte d'Ivoire	Guinea-Bissau	Mali	Niger	Senegal	Togo	Total
Number of regions or departments	12	13	14	9	8	8	14	6	84
Sample surveyed for the GPS module	19355	12723	30272	20 182	20 613	14522	54 951	15074	187 692

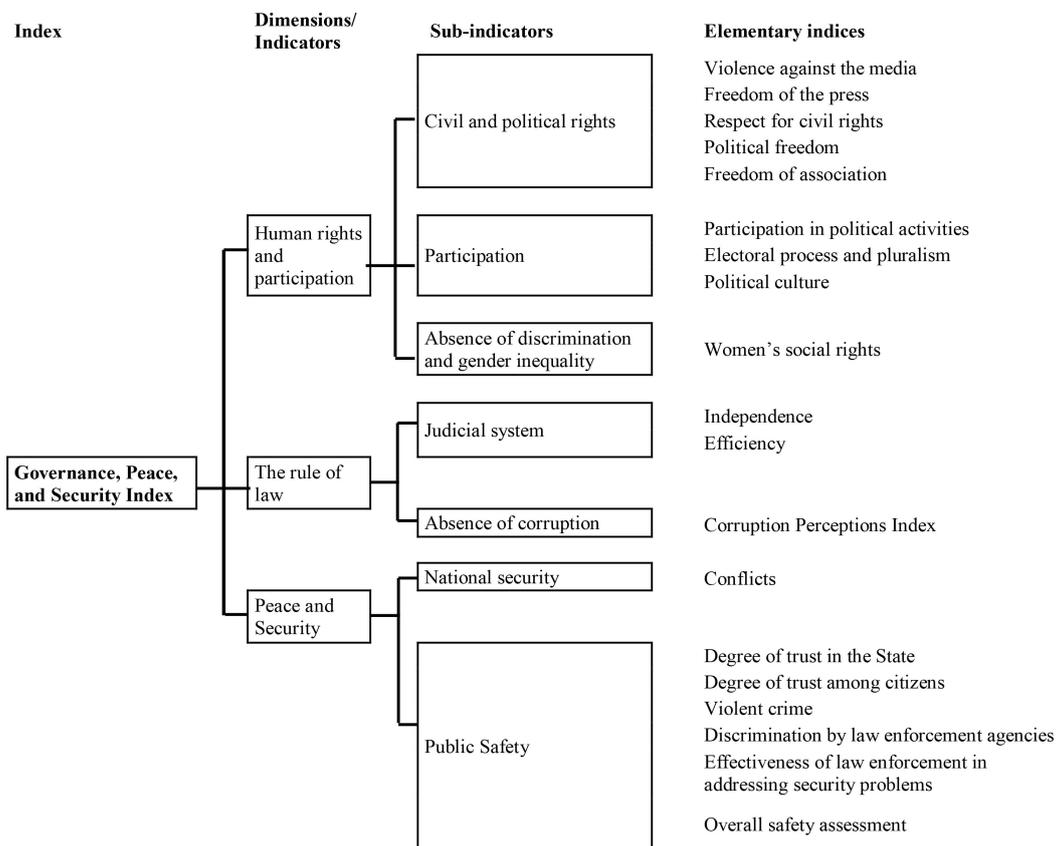


Fig. 1. Conceptual diagram of the I_{GPS} and its components.

– $x_{ij} = \frac{\max_k\{S_{ik}\} - S_{ij}}{\max_k\{S_{ik}\} - \min_k\{S_{ik}\}}$ when the variable has a negative impact on the index or sub-index to be calculated.

$\min_k\{S_{ik}\}$ represents the minimum value of S_{ij} obtained from all households and $\max_k\{S_{ik}\}$ represents the maximum value of S_{ij} obtained from all households for variable i .

Calculation of sub-indicators and indicators The sub-indicators are calculated based on the elementary indices, which are the normalization of variables at the household level. When an elementary index is composed of several variables, it is calculated as a simple arithmetic average of the normalized I_{ij} values of the various variables.

For each of the elementary indices and sub-indicators,

the values range from 0 to 1, where 0 and 1 represent the worst and best possible scores, respectively.

Let us adopt the following notations:

- Variables ($l = 1$ to L); Elementary index ($k = 1$ to K); Sub-indicator ($j = 1$ to J) and Indicator (Dimension) ($i = 1$ to N).
- L_{ijk} = number of variables in the elementary index k of sub-indicator j of component i .
- x_{ijkl} = normalized value of the variable L of the elementary index k of sub-indicator j of component i .
- I_{ijk} = value of the elementary index k of sub-indicator j of component i .

The elementary index k of sub-indicator j of component i , which is written as a simple arithmetic average of the normalized values is as follows:

$$I_{ijk} = \frac{1}{L_k} \sum_{l=1}^{L_k} x_{ijkl}$$

Each sub-indicator is the arithmetic average weighted by the number of variables in the elementary indices that it is composed of.

The sub-indicator j of component i is written as follows:

$$I_{ij} = \frac{\sum_{k=1}^{K_{ij}} I_{ijk}}{\sum_{k=1}^{K_{ij}} L_{ijk}} = \frac{\sum_{k=1}^{K_{ij}} \sum_{l=1}^{L_{ijk}} x_{ijkl}}{\sum_{k=1}^{K_{ij}} L_{ijk}}$$

Each indicator is the arithmetic average weighted by the number of variables in the sub-indicators that it is composed of.

$$I_i = \frac{\sum_{j=1}^{J_i} L_{ij} I_{ij}}{\sum_{j=1}^{J_i} L_{ij}} \text{ with } L_{ij} = \sum_{k=1}^{K_{ij}} L_{ijk}$$

Calculation of the IGPS The I_{GPS} is the arithmetic average weight of the number of variables in the indicators that it is composed of.

$$I_{GPS} = \sum_{i=1}^3 \frac{P_i}{\sum_i P_i} I_i = \omega_1 I_{\text{Human rights}} + \omega_2 I_{\text{Rule of law}} + \omega_3 I_{\text{Peace and Security}}$$

Therefore, the I_{GPS} is the simple arithmetic average of all the normalized elementary indices.

4.3. Method of analysis

The results of the application of the methodology for calculating the I_{GPS} are presented in a descriptive manner using two statistical methods:

4.3.1. Average comparison test

The t -test technique for two independent sub-groups is used to assess the differences in perceptions of GPS among citizens based on specific characteristics.

Null hypothesis: There is no difference between the averages of the two independent groups. Therefore, the difference between the two averages in the population is 0, implying that the two groups are in the same population.

$$H_0 : \bar{X}_1 = \bar{X}_2 \text{ ou } \bar{X}_1 - \bar{X}_2 = 0$$

The alternative hypothesis is that there are differences in the two averages.

$$H_1 : \bar{X}_1 \neq \bar{X}_2$$

One of the reasons why the t -test is used for independent samples is the need for equality of variances

when calculating the standard error of differences in the averages. If the null hypothesis of equality of variances is rejected, the t -test calculated is corrected by using the individual variances of the two groups (Welch's correction) rather than the combined variance (pooled variance). The standard error formula of the individual variances is given as:

$$S_{X_1-X_2} = \sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}$$

4.3.2. Ascending hierarchical classification and cluster's characterization

We used the ascending hierarchical classification to gather the administrative regions of similar member states into various clusters. The indicators of the three dimensions or components of the I_{GPS} were used to constitute the clusters. Moreover, the characterization of the clusters is based on the sub-indicators related to each component and the characteristics of the citizens. The test values will make it possible to identify the variables that best describe each cluster. In this study, continuous variables are used to describe the clusters.

Thus, the higher the test value (in absolute value) and the smaller the probability, the more the variable describes the cluster. A negative test value indicates that the average of a variable in a cluster is lower than the average in the entire sample. By contrast, a positive test value indicates that the average of a variable in a cluster is higher than the average for the entire sample.

5. Results

5.1. Different perceptions of GPS among citizens of WAEMU member states

Table A2 presents the I_{GPS} and its components calculated from ERI-ESI data and grouped into countries and place of residence. Although there is no threshold for assessing the index, the I_{GPS} is between 0.64 and 0.7 for all the member states of WAEMU, with a value of approximately 0.76 in Senegal and Niger: this reflects an average perception of GPS. Citizens aged 18 and above have negative perceptions of how GPS issues are handled by stakeholders.

The analysis, which is based on the three dimensions, shows that the one with the least perception is "peace and security," followed by "human rights and participation." By contrast, people have a low perception of the "rule of law".

Table 2
Country profiles of the I_{GPS} and its components (WAEMU, 2017–2018)

Characteristics of the head of household	Civil and political rights	Participation	Absence of discrimination and gender inequality	Human rights and participation	Judicial system	Absence of corruption	Rule of law	National security	Public Safety	Peace and security	Governance, peace and security index
Countries											
Benin	0.666	0.636	0.564	0.636	0.459	0.403	0.412	0.515	0.723	0.708	0.640
Burkina Faso	0.736	0.615	0.720	0.654	0.534	0.495	0.489	0.472	0.785	0.761	0.688
Côte d'Ivoire	0.714	0.597	0.810	0.660	0.604	0.558	0.566	0.316	0.780	0.746	0.695
Guinea-Bissau	0.609	0.478	0.745	0.553	0.426	0.555	0.534	0.598	0.815	0.799	0.696
Mali	0.694	0.661	0.731	0.680	0.432	0.402	0.407	0.529	0.791	0.772	0.687
Niger	0.796	0.703	0.667	0.728	0.680	0.601	0.614	0.571	0.831	0.812	0.757
Senegal	0.800	0.692	0.801	0.740	0.700	0.616	0.630	0.689	0.806	0.797	0.755
Togo	0.730	0.598	0.813	0.665	0.429	0.498	0.486	0.558	0.707	0.697	0.653
WAEMU	0.732	0.639	0.738	0.679	0.561	0.519	0.524	0.500	0.783	0.762	0.701
Residence											
Capital/main city	0.656	0.574	0.763	0.622	0.484	0.472	0.474	0.504	0.754	0.735	0.663
Other urban	0.715	0.633	0.736	0.671	0.562	0.512	0.519	0.476	0.775	0.753	0.693
All urban	0.688	0.606	0.749	0.648	0.526	0.494	0.498	0.489	0.765	0.745	0.679
Rural	0.762	0.662	0.730	0.699	0.585	0.536	0.541	0.507	0.794	0.773	0.715

Source: Integrated Regional Survey on Employment and the Informal Sector of the WAEMU member states, 2017–2018.

Table 3
Level of appreciation of the peace and security component elementary indices by individuals aged 18 and above (WAEMU, 2017–2018)

Peace and security elementary indices	WAEMU member states								
	Benin	Burkina Faso	Côte d'Ivoire	Guinea-Bissau	Mali	Niger	Senegal	Togo	WAEMU
Conflicts	0.515	0.472	0.316	0.598	0.529	0.571	0.689	0.558	0.500
Degree of trust in the State	0.626	0.647	0.655	0.642	0.669	0.710	0.663	0.615	0.659
Degree of trust among citizens	0.550	0.620	0.613	0.700	0.627	0.678	0.637	0.509	0.616
Violent crime	0.972	0.974	0.975	0.984	0.982	0.986	0.978	0.985	0.978
Discrimination by law enforcement agencies	0.830	0.944	0.928	0.942	0.923	0.957	0.965	0.812	0.921
Effectiveness of law enforcement in addressing security problems	0.593	0.624	0.577	0.518	0.667	0.741	0.646	0.624	0.634
Overall safety assessment	0.617	0.637	0.691	0.780	0.675	0.774	0.671	0.630	0.678

Source: Integrated Regional Survey on Employment and the Informal Sector of the WAEMU member states, 2017–2018.

The overall I_{GPS} has been grouped according to the administrative regions of the various countries and can, therefore, help in policymaking. The administrative regions may have different perceptions of different indicators or elementary indices. The “peace and security” elementary indices are essential for detailed analysis and anticipation of crises and conflicts in a country. Table A3 shows the level of perceptions of peace and security elementary indices among the WAEMU member states.

The violent crime elementary index refers to threats or incidents experienced by citizens. The elementary index is close to 1, which indicates a very positive perception. Regarding the effectiveness of law enforcement agencies in dealing with security problems, the average perceptions of citizens are very positive. On the other

hand, perceptions of trust in the state and trust among citizens are average.

To assess the differences in perception based on households' standard of living and the level of education of heads of households, we conducted two tests to compare the averages within a country and among WAEMU member states:

- Sub-group of individuals in poor households versus those in wealthy households.
- Sub-group of individuals in households where the head of the household is uneducated versus those in households where the head of the household is educated.

The I_{GPS} and its components can be found in Tables A1 and A2 of the Appendix.

Table 4

Test of differences in the average of the IGPS and its components according to households' wealth quintile and the level of education of the heads of households

WAEMU countries	Wealth quintile (Lowest # Highest) ³				Level of education of the HH ⁴ (No education # Education) ⁵			
	Human rights and participation	Rule of law	Peace and security	Governance. peace and security index	Human rights and participation	Rule of law	Peace and security	Governance. peace and security index
Benin	-0.026***	-0.025***	-0.014***	-0.019***	0.028***	0.009*	0.015***	0.017***
Burkina Faso	0.011	-0.009	0.007	0.004	-0.016***	0.049***	0.008	0.008
Côte d'Ivoire	0.056***	0.048***	0.023***	0.035***	0.070***	0.055***	0.030***	0.044***
Guinea-Bissau	0.000	0.020**	-0.007	-0.001	-0.018***	0.053***	0.010**	0.011**
Mali	-0.028***	0.015**	-0.007	-0.008	0.017**	0.068***	0.002	0.017***
Niger	0.064***	0.117***	-0.008*	0.030**	0.047***	0.063***	0.009***	0.027***
Senegal	-0.039***	0.039***	-0.018***	-0.013***	-0.012***	0.040***	-0.003***	0.003*
Togo	-0.057***	0.011***	-0.033***	-0.031***	0.028***	0.061***	0.013***	0.025***
WAEMU	-0.002***	0.019***	-0.002**	0.002	0.034***	0.049***	0.027***	0.032***

Source: Integrated Regional Survey on Employment and the Informal Sector of the WAEMU member states, 2017–2018. Significance level: * ($p < 0.1$), ** ($p < 0.05$), *** ($p < 0.01$).

Table A4 presents the differences in indices of the sub-groups and the likelihood of observing differences in perceptions of GPS.

At the WAEMU member states level, differences in perceptions of GPS is not significant among individuals in poor households and those in wealthy households. However, differences in perceptions of GPS is significant among households where the head of the household is uneducated and those in households where the head of the household is educated.

In Burkina Faso, there is no difference in the perception of GPS and its three components between individuals in poor households and those in wealthy households (Table A4). On the other hand, individuals in households with an educated head have a higher perception of human rights, and those in households with an uneducated head have a higher perception of the principles of the rule of law.

From the analysis of Table A4, the indicators of perceptions of the rule of law are significant. Apart from Benin and Burkina Faso, individuals in the WAEMU member states who are in poor households have a higher perception of the rule of law. The difference in perceptions of peace and security is significant between the two groups of standards of living, except Burkina Faso, Guinea-Bissau, and Mali.

Based on the level of education of the heads of households, it can be observed in all the countries of the WAEMU member states that the indices of human rights and participation and the rule of law are significantly different between the two subgroups. In all the member

states, the index for the appreciation of the rule of law of individuals aged 18 and above in households where the head is uneducated is higher than that of individuals aged 18 and above in households where the head is educated.

5.2. Profile of WAEMU member states according to citizens' perception of GPS

In this section, we carried out an ascending hierarchical classification (AHC) to highlight groups of administrative regions (1st administrative subdivision) of WAEMU member states that are similar in terms of the perception of human rights, the rule of law, and peace and security. Four clusters were selected after the AHC.

5.2.1. Description of the clusters

After the AHC, the 84 administrative regions of the WAEMU member states⁶ were grouped into four distinct clusters. Table A4 in the Appendix lists the regions in each cluster.

Map 1 shows a diagram of the resulting clusters with the following descriptions:

Cluster 1: It consists of regions where the population has good perceptions of peace and security and human rights and participation and very low perceptions of the rule of law. This cluster is made up of 17 regions from 5 countries (Benin, Burkina Faso, Mali, Côte d'Ivoire, and Togo), including the headquarters of WAEMU, Ouagadougou, the capital of Burkina Faso. It can be described as a *middle cluster in terms of GPS perceptions* with a I_{GPS} of 0.691 (Table A3 of the Appendix).

³ $H_0: I_{gps}(\text{Lowest}) - I_{gps}(\text{Highest}) = 0$.

⁴ HH: Head of household.

⁵ $H_0: I_{gps}(\text{HH not educated}) - I_{gps}(\text{HH educated}) = 0$.

⁶ Without the Kidal region of Mali which was not surveyed.

Carte 1.: Classification of the regions of the WAEMU countries according to the components of the GPS perception index

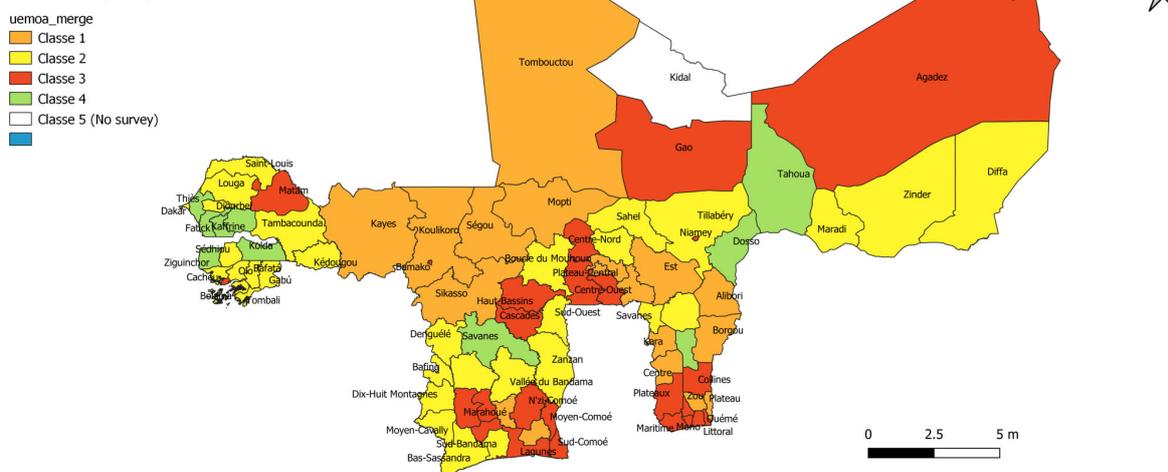


Fig. 2. Classification of the regions of the WAEMU countries according to the components of the GPS perception index.

Cluster 2: It consists of regions where people have good perceptions of human rights and participation, the rule of law, and peace and security. It is made up of 31 administrative regions, including Dakar (the capital of Senegal), of all the member states of WAEMU, except Mali. It can be described as a *cluster with good perceptions of GPS* with a I_{GPS} of 0.732 (Table A3 of the Appendix).

Cluster 3: It consists of regions where people have good perceptions of peace and security and low perceptions of human rights and participation and the rule of law. This cluster is made up of 26 regions from the 8 member states of WAEMU, including the capitals of Côte d'Ivoire, Guinea-Bissau, Mali, Niger, and Togo and Cotonou, the main city of Benin. It can be described as a *cluster with low perceptions of GPS* with a I_{GPS} of 0.646 (Table A3 of the Appendix).

Cluster 4: It consists of regions where the people have very good perceptions of human rights and participation, the rule of law, and peace and security. This cluster is composed of 10 regions from 4 countries (Benin, Côte d'Ivoire, Niger, and Senegal). It can be described as a *cluster with very good perceptions of GPS* with a I_{GPS} of 0.798 (Table A3 in the Appendix).

5.2.2. Cluster profile analysis

The regions of the WAEMU member states in a cluster are similar in terms of their GPS perceptions. This section draws the profile of each cluster based on the sub-indicators linked to each component of the I_{GPS} and the characteristics of the citizens.

a) *Cluster 1* Cluster 1 is made up of 17 regions from

5 countries (Benin, Burkina Faso, Mali, Côte d'Ivoire, and Togo), including the headquarters of WAEMU, Ouagadougou, the capital of Burkina Faso. Its adult literacy rate (34.7%) and the proportion of the population with primary education (23.3%) are below the overall average, 47.6% and 25.2%, respectively. Young people aged 15-24 as a proportion of the cluster population are poorly represented in relation to their proportion in the population of the WAEMU member states. In Cluster 1, perceptions index for the sub-indicators "absence of corruption" (0.438) and "efficiency of the judicial system" (0.481) are lower than the values obtained at the overall level, 0.519 and 0.561, respectively.

Precarious employment (33.7%) is a characteristic of this cluster, which has a significantly high value compared to the overall value (25.5%). The perceptions index for the sub-indicator "political participation" (0.670) is higher than that of the overall index (0.639).

b) *Cluster 2* This cluster is made up of 31 administrative regions, including Dakar (the capital of Senegal), of all the member states of WAEMU, except Mali. Its perception index of the sub-indicators "absence of corruption" (0.586), "public security" (0.802), and "efficiency of the judicial system" (0.653) are above the overall average of the WAEMU member states, which are 0.519, 0.783 and 0.561, respectively.

Some variables have significantly low values in relation to the overall averages of the WAEMU member states:

– The percentage of the cluster who have attained

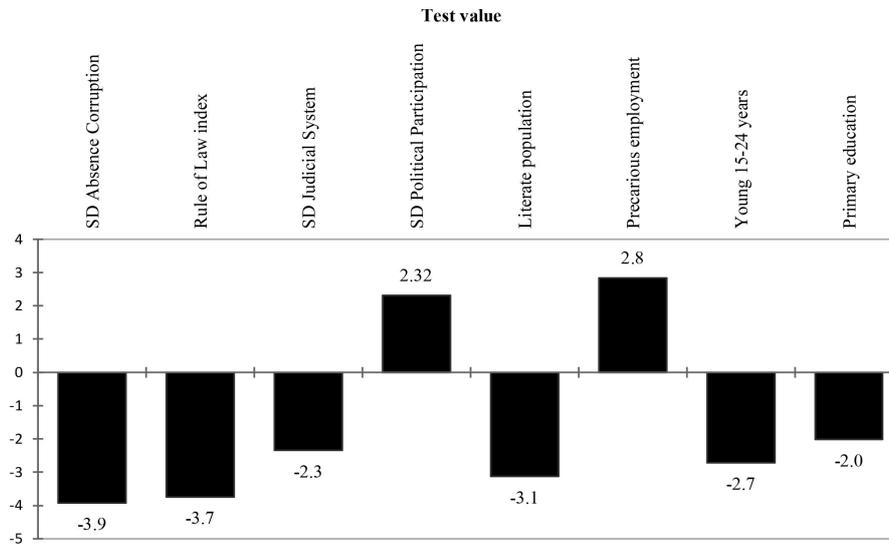


Fig. 3. Test values of the characteristic variables of cluster 1.

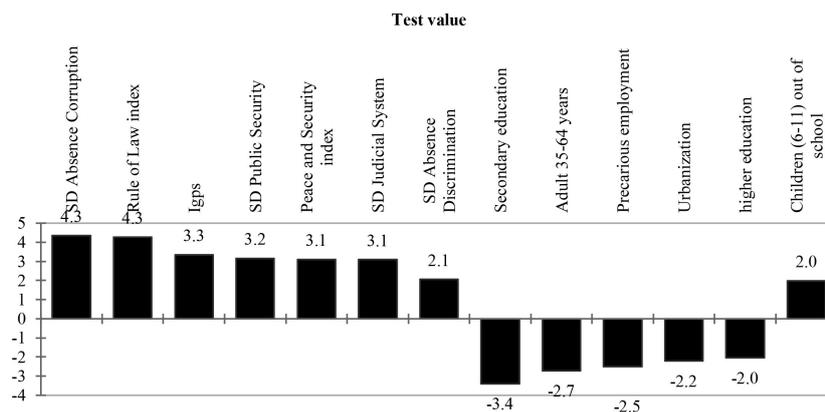


Fig. 4. Test values of the characteristic variables of cluster 2.

secondary education and the percentage of the population aged 35–64 is 9.4% and 18.5%, respectively, as against 12.8% and 19.8% for the WAEMU member states.

- This cluster has fewer precarious jobs (22.8%) compared to that of the overall average of the WAEMU member states (25.5%).
- A small proportion of the population lives in urban centers (26.5%) compared to 34.5% for the WAEMU member states.

c) *Cluster 3* This cluster is composed of 26 regions from the eight-member states of WAEMU, including the capitals of Côte d’Ivoire, Guinea-Bissau, Mali, Niger, and Togo and Cotonou, the main city of Benin.

Its sub-indicator indices for “civil and political rights” (0.635), “public security” (0.740), and “political

participation” (0.556) are lower than the overall average of the WAEMU member states. The proportion of the population that is educated (38.5%) and the proportion of children aged 6–11 who have never been to school (21.8%) are below that of the WAEMU member states, 50.7% and 38.9%, respectively.

Compared to the overall average of the WAEMU member states, some variables have significantly high values. The percentage of the cluster that has attained secondary education (19.5%) and tertiary education (4.7%) is higher than that of the WAEMU member states, 12.8% and 2.3%, respectively. This cluster has a high rate of urbanization (54.6% as against 34.5% of the WAEMU member states), a high proportion of individuals who have migrated (19.8% as against 12.5% of the WAEMU member states), and a predominance of activities in industry, trade, and services sectors.

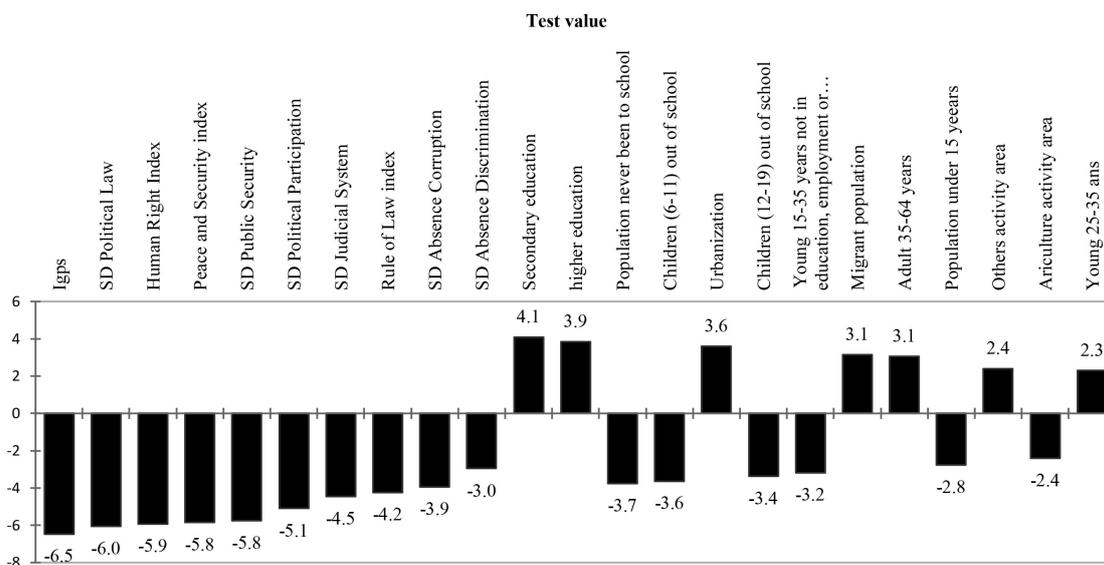


Fig. 5. Test values of the characteristic variables of cluster 3.

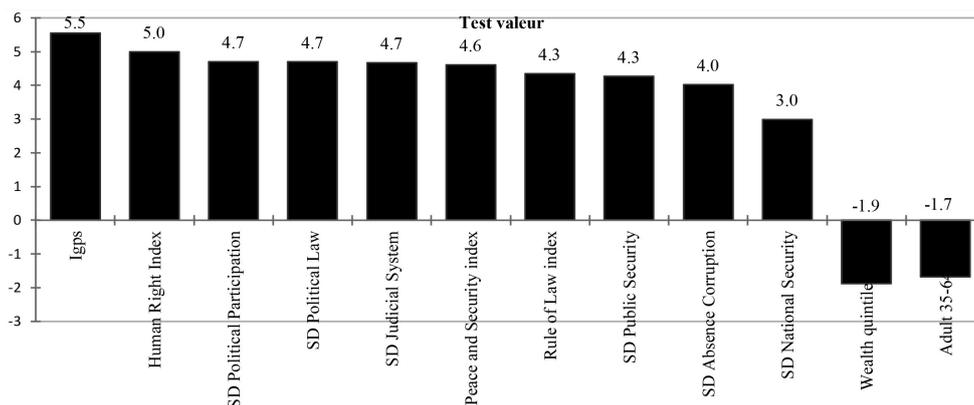


Fig. 6. Test values of the characteristic variables of cluster 4.

d) *Cluster 4* This cluster is composed of 10 regions from 4 countries (Benin, Côte d’Ivoire, Niger, and Senegal). Its values for the sub-indicators “political participation” (0.752), “civil and political rights” (0.863), and “efficiency of the judicial system” (0.754) are higher than that of the overall average of the WAEMU member states.

At the 10% threshold, only the variables “average standard of living” and the percentage of individuals aged 35–64 of this cluster are below that of the overall average of the WAEMU member states.

6. Conclusion and outlook

The I_{GPS} and its components are based on people’s

experiences and perceptions. They provide to policymakers and development stakeholders a tool for diagnosing actions and a barometer for anticipating tensions and threats to security. This I_{GPS} is the first methodological version developed during the ERI-ESI’s analytical work. Criticisms and suggestions will make it possible to improve it and make this index as a tool for good governance for the development and sustainability of the citizens. The dimensions and elementary indices developed were based on the structure of the GPS/SHaSA questionnaire.

The different dimensions and sub-dimensions of the index can be tracked over time and provide information on the state of human rights and the rule of law at national and subnational. Better use of the results of this index requires the organization of regular house-

hold surveys on governance and the establishment of a database on the index and these components at the national and sub-national level according to the different characteristics.

The Observatory is already considering the following issues:

- Improving the conceptual framework used to calculate the I_{GPS} and identifying the relevant dimensions and elementary indices to understand citizens' perceptions.
- Improving the methodology for calculating the index and its components.
- Improving the data collection process to capture or better account for certain dimensions.
- Finalizing and taking more practical measures to calculate the I_{GPS} and its components.

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Appendix

Table A1
Individual assessment of governance, peace and security and its components by the wealth quintile of the household

Countries of WAEMU	Lowest				Highest			
	Human rights and participation	Rule of law	Peace and security	Governance, peace and security index	Human rights and participation	Rule of law	Peace and security	Governance, peace and security index
Benin	0.617	0.401	0.696	0.627	0.644	0.426	0.710	0.645
Burkina Faso	0.650	0.486	0.759	0.685	0.639	0.495	0.752	0.681
Côte d'Ivoire	0.695	0.592	0.763	0.717	0.639	0.544	0.740	0.682
Guinea-Bissau	0.547	0.531	0.790	0.689	0.547	0.511	0.798	0.690
Mali	0.665	0.419	0.770	0.684	0.693	0.404	0.776	0.692
Niger	0.702	0.602	0.807	0.747	0.638	0.485	0.815	0.716
Senegal	0.719	0.653	0.784	0.746	0.758	0.615	0.802	0.759
Togo	0.636	0.486	0.671	0.631	0.694	0.475	0.704	0.662
WAEMU	0.669	0.521	0.753	0.693	0.671	0.502	0.755	0.692

Source: Integrated regional survey on employment and the informal sector in WAEMU member states, 2017–2018.

Table A2
Individual assessment of governance, peace and security and its components by the level of education of the head of household

Countries of WAEMU	Education				Non education			
	Human rights and participation	Rule of law	Peace and security	Governance, peace and security index	Human rights and participation	Rule of law	Peace and security	Governance, peace and security index
Benin	0.620	0.407	0.699	0.630	0.648	0.416	0.714	0.647
Burkina Faso	0.665	0.456	0.756	0.682	0.649	0.504	0.763	0.691
Côte d'Ivoire	0.627	0.540	0.731	0.674	0.697	0.595	0.762	0.718
Guinea-Bissau	0.561	0.511	0.795	0.691	0.542	0.564	0.805	0.702
Mali	0.669	0.360	0.771	0.676	0.686	0.428	0.773	0.693
Niger	0.689	0.563	0.805	0.736	0.736	0.626	0.814	0.762
Senegal	0.747	0.604	0.799	0.753	0.735	0.644	0.796	0.756
Togo	0.657	0.468	0.692	0.645	0.684	0.528	0.705	0.670
WAEMU	0.658	0.494	0.746	0.681	0.692	0.543	0.772	0.713

Source: Integrated regional survey on employment and the informal sector in WAEMU member states, 2017–2018.

Table A3
Assessment of the perception index of GPS and its components in clusters

Class	Human rights and participation	Rule of law	Peace and security	Governance, peace and security index
Cluster 1: Regions of average appreciation of GPS	0.696	0.442	0.763	0.691
Cluster 2: Regions of good appreciation of GPS	0.710	0.595	0.781	0.732
Cluster 3: Regions of low appreciation of GPS	0.598	0.467	0.718	0.646
Cluster 4: Regions of very good appreciation of GPS	0.790	0.675	0.837	0.798

Source: Integrated regional survey on employment and the informal sector in WAEMU member states, 2017–2018.

Table A4
Composition of the clusters resulting from the classification

Cluster	1	2	3	4
Number of regions	17	31	26	10
	BJ-Alibori	BJ-Atacora	BJ-Atlantique	BJ-Donga
	BJ-Borgou	BF-Boucle d u mouhoun	BJ-Collines	CI-Savanes
	BJ-Plateau	BF-Centre-Nord	BJ-Couffo	NE-Dosso
	BJ-Zou	BF-Sahel	BJ-Littoral	NE-Tahoua
	BF-Centre	BF-Sud-Ouest	BJ-Mono	SN-Fatick
	BF-Centre-Est	CI-Autonome de Yamoussoukro	BJ-Ou“m”	SN-Kaffrine
	BF-Est	CI-Bas-sassandra	BF-Cascades	SN-Kaolack
	BF-Plateau central	CI-Denguelé	BF-Centre-Ouest	SN-Kolda
	CI-Lacs	CI-Montagnes	BF-Centre-Sud	SN-Thiés
	ML-Kayes	CI-Vallée du Bandama	BF-Hauts-bassins	SN-Ziguinchor
	ML-Koulikoro	CI-Woroba	BF-Nord	
	ML-Sikasso	CI-Zanzan	CI-Autonome d'Abidjan	
	ML-Ségou	GW-Tombali	CI-Comoé	
	ML-Mopti	GW-Quinara	CI-Gôh-Djiboua	
	ML-Tombouctou	GW-Oio	CI-Lagunes	
	TG-Centrale	GW-Bolama Bijagos	CI-Sassandra-Marahoué	
	TG-Kara	GW-Bafata	GW-Biombo	
		GW-Gabu	GW-SAB	
		GW-Cacheu	ML-Gao	
		NE-Diffa	ML-Bamako	
		NE-Maradiï	NE-Agadez	
		NE-Tillabéri	NE-Niamey	
		NE-Zinder	SN-Matam	
		SN-Dakar	TG-Maritime	
		SN-Diourbel	TG-Plateaux	
		SN-Kedougou	TG-Grand Lomé	
		SN-Louga		
		SN-Saint-louis		
		SN-Sedhiou		
		SN-Tambacounda		
		TG-Savanes		

NB: The regions are preceded by the country code: Benin (BJ); Burkina Faso (BF); Côte d'Ivoire (CI); Guinea-Bissau (GW); Mali (ML); Niger (NE); Senegal (SN) et Togo (TG).