

**BOOK EE12**

**EDUCATION, FREEDOM, INTERNATIONAL DEVELOPMENT AND QUALITY OF LIFE, 2001-2023: INTERNATIONAL ECONOMIC STUDIES OF AMERICA, EUROPE, AFRICA AND ASIA**

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**Chapter 5. Development Studies of Africa, 2001-2023.**

**Maria-Carmen Guisan**

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**CHAPTER 5**  
**DEVELOPMENT STUDIES OF AFRICA, 2001-2023**  
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### 5.1. Studies of 2007-2020: Education, Investment and Production

*Studies of the period 2007-2010: Education, Development and Health*

Guisan and Exposito(2007), in AEID 7-2, present the estimation of a cross-section econometric model of 39 African countries, relating Education, Development and Health expenditure.

Guisan(2008), in RSES 8-2, analyzes the evolution of Manufacturing and Development in Africa for the period 1999-2006.

Guisan and Exposito(2010), analyze Health expenditure, Education, Quality of Government and Quality of Life in Africa, in RSES 10-1.

*Studies of the period 2011-2020: Investment, Health and Production*

*The study by Guisan(2014) on Investment per capita in 38 African countries*

Guisan 2014), in RSES, analyzed the evolution of real Investment per capita (IH) and real Savings per capita (SH) in 38 African countries for the period 2000-2010.

Table 5.1. includes data of IH and SH. We found that average investment per capita in year 2010 of 39 African countries amounted to only 620 Dollars of year 2005, which is very low in comparison with World average (1408).

The highest values, more than 2000, correspond to Algeria, Botswana and Tunisia. The lowest values correspond to countries with IH lower than 250 Dollars: Burkina Faso, Burundi, Central African R., Congo DR, Cote d'Ivoire, Eritrea, Ethiopia, Guinea, Madagascar, Malawi, Mali, Mozambique, Niger, Rwanda, Sierra Leone, Togo and Zimbabwe.

Education is one of the main factors of economic development and wellbeing because it usually contributes to increase production per capita and investment per capita. For the periods 1990-2000 and 2000-2019 there has been an increase of average years of Schooling in Africa, but many countries have yet low values in comparison with World average.

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Table 5.1. IH and SH in Africa, 2000-2010 (\$ at prices and parities of 2005)

Country	IH00	SH00	IH10	SH10
Algeria	1522	NA	3132	2597
Angola	395	632	807	879
Benin	224	118	367	103
Botswana	3131	4011	3531	3293
Burkina Faso	152	45	211	93
Burundi	20	14	45	0
Cameroon	311	275	339	324
Central African R	73	NA	64	34
Chad	202	NA	452	119
Congo DR	8	NA	45	20
Congo R	695	937	782	1694
Cote d'Ivoire	194	141	236	200
Egypt AR	842	758	1047	986
Eritrea	163	27	73	0
Ethiopia	105	84	201	155
Ghana	244	152	394	302
Guinea	202	152	214	105
Kenya	219	180	286	231
Lesotho	502	275	402	161
Madagascar	129	77	176	48
Malawi	99	71	196	35
Mali	214	137	184	94
Mauritania	303	NA	602	0
Morocco	775	715	1484	1300
Mozambique	157	56	200	92
Namibia	666	979	1363	1971
Niger	62	28	115	30
Nigeria	NA	NA	465	777
Rwanda	115	83	249	107
Senegal	281	196	503	191
Sierra Leone	27	-15	117	97
South Africa	1197	1197	1825	1559
Tanzania	156	112	371	272
Togo	138	8	167	9
Tunisia	1470	1252	2258	1738
Uganda	147	109	271	214
Zambia	175	-10	314	315
Zimbabwe	386	NA	30	0
Average of Africa	413	733	620	578

Source: Elaborated by Guisan(2014) from World Bank Statistics. NA=Not available.

*Study by Guisan and Exposito(2016), on Education and Health, 1980-2014*

The study by Guisan and Exposito(2016), in AEID), analyses the positive evolution of Life Expectancy in Africa, for the period 1980-2014 and the important role of Education on economic development and health improvements. The following table shows the evolution of Life Expectancy in Sub-Saharan Africa in comparison with World average

Table 5.2. Life Expectancy in Sub-Saharan Africa; 1960-2014

Life Expectancy	1960	1970	1980	1990	2000	2014
World Total	52	59	63	65	68	71
Sub-Saharan Africa Female	42	46	50	52	51	60
Sub-Saharan Africa Male	39	43	47	48	49	57
Sub-Saharan Africa Total	40	44	48	50	50	59

Source: Elaborated by M.C. Guisan from World Bank.

The authors say: *“Life expectancy has increased in the majority of African countries for the period 1980-2014, with an average increase slightly higher than that of World average for that period. Due to the low starting values of year 1960, and to the slow increase of the period 1960-1980, many Sub-Saharan countries presented, in year 2014, low values in comparison with World average: 59 years in Sub-Saharan Africa and 71 as World average. Northern Africa has experienced a very positive evolution reaching World average in year 2014”.*

That study present the estimation of some econometric models that measure the positive impact of Education on Development and Life Expectancy of African countries.

We include an analysis of several causes of death, with adjusted rates particularly high in many Sub-Saharan countries, in comparison with the World average of the Age Specific Death Rate (ASDR). Finally we call to support the initiatives for a kind of Marshall Plan for Africa, as those suggested many years ago by Angelopoulos and Lawrence Klein, in the presentation of the book by Angelopoulos(1983).

*The study by Guisan(2018) on QMH and QNMH of Africa for 2000-2015*

Guisan(2018), in RGE, analysed the evolution of real Value-Added on Manufacturing, in African countries, and in other countries, for the period 2000-2015, and includes an econometric model that show the important positive impact of Manufacturing on Non-manufacturing.

Table 5.3 includes real values of QMH= Manufacturing per capita, and QNMH=Non Manufacturing per capita, for the period 2000-2015.

Table 5.3. QMH and QNMH for 2000-2015 in Africa (\$ at 2005 prices and PPPS

Country	QMH 00	QMH 10	QMH 15	QNMH 00	QNMH 10	QNMH 15
Algeria	426	530	NA	5661	7035	NA
Angola	79	333	NA	2554	5216	NA
Benin	94	114	109	1084	1310	1465
Botswana	587	748	775	9196	11715	13596
Burkina Faso	143	68	62	753	1059	1168
Burundi	41	33	31	297	333	328
Cameroon	385	432	421	1447	1626	1880
Central Af R	44	42	32	690	665	467
Chad	79	25	77	799	1204	1256
Congo. DR	26	31	36	230	280	348
Congo. Rep.	91	152	315	2930	3656	3763
Cote d'Ivoire	317	204	NA	1444	1499	NA
Egypt. Arab R	800	832	835	3411	4712	4846
Eritrea	68	49	NA	613	441	NA
Ethiopia	32	37	59	494	896	1273
Ghana	102	88	86	914	1386	1813
Guinea	40	76	70	972	1005	1002
Kenya	154	148	139	1133	1333	1567
Lesotho	167	187	176	1029	1250	1505
Madagascar	103	104	NA	755	765	NA
Malawi	92	95	97	613	696	736
Mali	34	38	NA	823	917	NA
Mauritania	208	88	76	1389	2115	2339
Morocco	507	634	743	2473	3593	4032
Mozambique	61	127	137	445	718	888
Namibia	509	755	594	3407	5053	6223
Niger	40	39	NA	528	614	NA
Nigeria	58	151	242	1398	2002	2134
Rwanda	45	52	63	595	991	1261
Senegal	210	243	NA	1193	1493	NA
Sierra Leone	15	15	13	366	727	790
South Africa	1421	1137	1094	6059	8340	8714
Tanzania	78	129	117	786	1158	1406
Togo	69	72	51	700	824	950
Tunisia	980	1456	1405	4464	7110	7425
Uganda	62	103	112	713	1039	1143
Zambia	113	126	138	916	1275	1412
Zimbabwe	441	70	71	2318	430	575

Source: Elaborated by Guisan(2018), in RGE, from World Bank statistics.

For 2000-2015, Manufacturing per capita was very low in most African countries. World average was close to 2000 and the developed countries usually have a value between 3000 and 6000, and in a few cases even higher, but in Africa in year 2010 only 2 countries, out of 38, had a value of QMH higher than 1000 (Tunisia and South Africa). The other 36 countries of table 5.2 had values lower than 1000 and in 17 countries lower than 100.

**5.2. Studies of 2021-2022: Education and Quality of Life in Africa**

Guisan(2021) present a comparison of several indicators of development and quality of life in year 2019 from the sources indicated in Figure 3.1:

PH = GDP per capita (at constant prices and purchasing power parities)

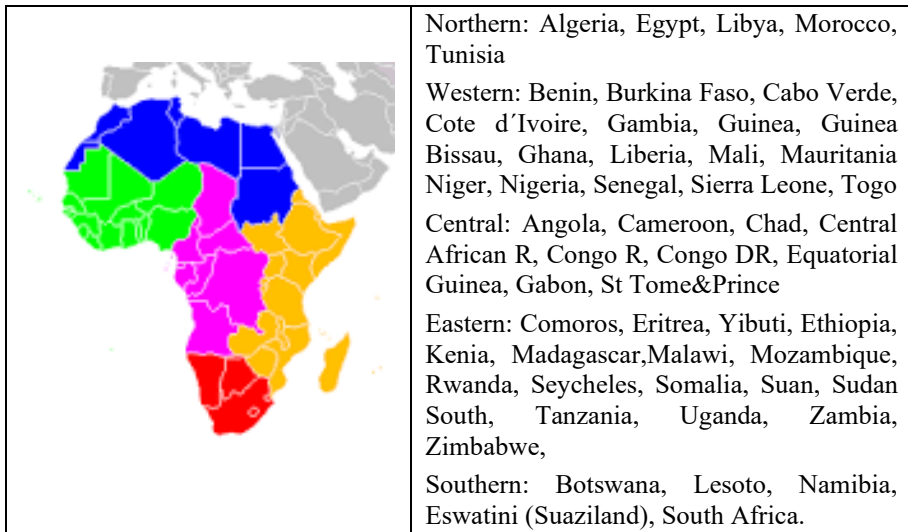
Tyr (average years of Schooling of population 25+).

Positive Indicators of Quality, in decimal scale: X1=Satisfaction with Life, X2=Voice of Citizens, X4=Peace, X5=Political Stability, X6=Indicator of Freedom.

Negative indicators of Quality of life: X7=PM2.5 (Pollution in microns per cubic meter of air), X8=Homicides Rate per 100 thousand inhabitants.

Figure 5.1 includes countries by geographical are. Table 5.4 presents data of countries of Northern, Western and Southern areas and table 5.5 of Central and Eastern areas.

Figure 5.1. Areas of Africa



Source: Elaborated from United Nations information and map. Note: Sudan in the NE: here it is included in Eastern Africa.

Tables 5.3 and 5.4 show the values of several indicators by country, in 5 areas of Africa and table 5.5 includes a comparison of non-weighted average of the indicator in each geographical area.

Table 5.3. Development and Quality of Life in Africa, 2019:North, West, South

Country	PH	TYR	X1	X2	X4	X5	X6	X7	X8
Northern Africa									
Algeria	11511	8.0	4.89	3.94	4.22	2.9	4.6	38.9	1.36
Egypt. AR	11763	7.4	4.28	3.90	4.01	2.8	4.9	87.0	2.51
Libya	15174	7.6	5.41	0.98	2.09	0.0	0.2	54.3	2.50
Morocco	7537	5.6	4.92	4.94	4.96	4.3	5.9	32.6	1.24
Tunisia	10756	7.2	4.60	4.60	4.73	3.3	5.4	37.7	3.05
<i>Average 1</i>	11348	7.2	4.82	3.67	4.00	2.66	4.2	50.1	2.10
Western Africa									
Country	PH	TYR	X1	X2	X4	X5	X6	X7	X8
Benin	3287	3.8	5.05	4.48	4.77	4.2	6.1	39.0	6.18
Burkina Faso	2178	1.6	4.83	3.66	3.68	2.4	5.8	42.9	0.37
Cabo Verde	7172	6.3	5.50	5.50	5.75	6.7	6.7	34.8	11.5
Cote d'Ivoire	5213	5.3	5.31	4.04	4.69	2.9	6.2	25.9	11.6
Gambia	2223	3.9	5.05	3.66	5.37	5.4	5.8	34.0	9.13
Ghana	5411	7.3	5.09	4.70	5.71	5.3	6.0	34.7	1.68
Guinea	2567	2.8	4.98	3.22	4.83	3.3	5.4	26.1	8.82
Guinea-Bissau	1939	3.6	4.98	2.14	4.72	3.9	4.6	29.8	9.55
Liberia	1428	4.8	4.63	2.18	5.00	4.3	4.8	18.0	3.23
Mali	2322	2.4	4.72	2.70	2.97	0.6	5.6	38.5	10.9
Mauritania	5197	4.7	4.23	3.46	4.28	3.9	5.5	47.4	9.94
Niger	1225	2.1	5.07	3.76	3.53	2.2	5.5	94.1	4.44
Nigeria	5135	6.7	4.76	2.94	3.22	1.2	5.4	71.8	9.85
Senegal	3361	3.2	5.13	5.02	5.34	5.1	6.0	40.7	7.38
Sierra Leone	1720	3.7	3.85	2.96	5.47	4.9	5.2	21.6	1.71
Togo	1599	5.0	4.11	3.62	4.40	3.2	5.7	35.7	9.00
<i>Average 2</i>	3249	4.2	4.83	3.63	4.61	3.7	5.6	39.7	7.2
Southern Africa									
Country	PH	TYR	X1	X2	X4	X5	X6	X7	X8
Botswana	17777	9.6	3.47	5.52	5.62	7.2	6.5	23.1	15.0
Eswatini	8622	6.9	4.31	3.46	5.11	4.5	5.1	17.2	11.0
Lesotho	2695	6.5	3.51	3.18	4.50	4.2	4.8	28.0	41.2
Namibia	9728	7.0	4.57	5.10	5.18	6.1	5.9	25.4	17.1
South Africa	12482	10.2	4.96	5.60	4.14	4.5	5.6	25.1	33.9
<i>Average 3</i>	10261	8.0	4.16	4.57	4.91	5.3	5.6	23.8	23.6

Source: Guisan(2021) and (2022), elaborated from World Bank indicators and other sources indicated in the bibliography and in the footnote of table 1.1 of this book.

Table 5.4. Development and Quality of Life in Africa, 2019: Center and South

Country	PH	TYR	X1	X2	X4	X5	X6	X7	X8
Central Africa									
Angola	6670	5.2	3.79	2.64	4.96	4.3	5.3	32.4	4.85
Cameroon	3642	6.3	5.14	3.24	3.25	1.9	5.3	72.8	4.17
Central Afr. R	945	4.3	3.48	1.62	2.17	0.7	4.6	56.8	19.76
Chad	1580	2.5	4.36	2.08	3.78	2.3	5.0	66.0	9.04
Congo. DR	1098	6.8	4.42	1.62	2.01	1.8	4.8	45.0	13.55
Congo. Rep.	3872	6.5	5.35	2.14	4.27	3.2	4.8	46.6	9.32
Eq Guinea	18503	5.9	5.35	2.06	4.72	4.7	4.7	53.2	2.31
Gabon	14950	8.7	4.85	3.18	4.82	4.9	5.6	44.4	8.04
Sao Tome&P	4005	6.4	6.35	3.72	5.50	6.0	6.0	28.5	3.36
Average 4	6141	5.8	4.7	2.48	3.94	3.3	5.1	49.5	8.27
Eastern Africa									
Country	PH	TYR	X1	X2	X4	X5	X6	X7	X8
Burundi	752	3.3	3.78	2.48	3.91	1.8	3.9	38.9	6.02
Comoros	3059	5.1	4.29	1.82	NA	4.7	5.0	20.6	7.70
Djibouti	5535	4.1	4.37	3.64	4.64	4.3	5.5	45.6	6.48
Ethiopia	2221	2.9	4.28	3.90	3.47	2.4	4.9	39.0	7.56
Kenya	4330	6.6	4.61	4.30	4.37	2.8	5.3	28.6	4.87
Madagascar	1619	6.1	4.21	3.00	5.09	4.4	5.9	22.5	7.69
Malawi	1086	4.7	3.60	3.42	5.23	4.4	5.3	23.6	1.73
Mauritius	22870	9.5	6.05	6.74	6.02	6.6	7.1	14.5	1.82
Mozambique	1282	3.5	4.79	3.56	4.69	3.5	5.1	21.3	3.40
Rwanda	2228	4.4	3.42	5.68	4.93	5.1	5.7	43.2	2.52
Seychelles	27521	10	6.31	6.02	6.23	6.4	6.1	20.2	12.7
Sudan	4186	3.8	4.07	2.02	2.66	1.6	3.2	55.4	5.16
Tanzania	2660	6.1	3.62	3.46	5.27	4.3	5.9	29.1	6.95
Uganda	2187	6.2	4.64	3.84	4.45	3.6	5.4	50.5	11.5
Zambia	3470	7.2	4.07	3.46	5.09	4.8	4.9	27.4	5.30
Zimbabwe	2800	8.5	3.15	2.50	3.77	3.1	3.3	22.3	6.67
Average 5	5488	5.7	4.33	3.74	4.65	4.0	5.2	31.4	6.13

Source: Guisan(2021) and (2022), elaborated from World Bank indicators and other sources indicated in the bibliography and in the footnote of table 1.1 of this book.

The low average years of schooling of many African countries, for the periods 1950-2000 and 2000-2019 is one of the main factors explaining the low capacity to increase real production per capita, real savings per capita and real investment per capita. International cooperation should have a priority in this regard.

Policies addressed to increase Education and the positive indicators of development should be very useful to diminish many sources of suffering (poverty, lack of political stability, lack of freedom, etc.).

Table 5.5. Averages values of Indicators in 5 African Areas, 2019

Indicator	1. Northern	2. Western	3. Southern	4. Central	5. Eastern
Ph	11348	3249	10261	6141	5488
Tyr	7.2	4.2	8.0	5.8	5.7
X1=Happy	4.82	4.83	4.16	4.79	4.33
X2= Voice	3.67	3.63	4.57	2.48	3.74
X4=Peace	4.00	4.61	4.91	3.94	4.65
X5=Stability	2.7	3.7	5.3	3.3	4.0
X6= Free	4.2	5.6	5.6	5.1	5.2
X7= PM2.5	50.1	39.7	23.8	49.5	31.4
X8=Homic. R	2.10	7.2	23.6	8.3	6.1

Source: Elaborated by author from tables 5.3 and 5.4.

X1: Average Satisfaction with life is low in all the areas, below 5. The African countries with the highest values (higher than 5) around year 2019, were:

In Northern Africa: Lybia

In Western Africa: Benin, Cabo Verde, Côte d'Ivoire, Gambia, Ghana, Niger and Senegal

In Southern Africa: The highest value of table 5.3 corresponded to South Africa (4.96), slightly below 5.

In Central Africa: Cameroon, Congo R, Equatorial Guiean and St Tomé and Prince.

In Eastern Africa: Mauritius and Seychelles.

X2; Voice of citizens is low in all the areas. The highest areas is Southern.

X4: Peace. The indicator is below 5 in all the areas. The highest value corresponds to Southern area and the lower to Central and Northern areas.

X5: Political stability is higher than 5 only in Southern area.

X6: The indicator of Freedom is below 5 in the Northern area, and slightly higher than 5 in the other areas.

X7: Very high levels of Pollution in Northern and Central areas.

X8: Very high level of Homicides Rate in the Southern area, high in Western, Central and Easter and the lowest rate in the Northern area.

The countries with higher values of TYR (average years of schooling of population age 25+) were:

- 1) In Northern Africa: Algeria, Egypt, Libya and Tunisia.
- 2) In Western Africa: Ghana.
- 3) In Southern Africa: Botswana, Namibia and South Africa.
- 4) In Central Africa: Gabon.
- 5) In Eastern Africa: Mauritius, Seychelles Zambia and Zimbabwe

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