Angresano Criteria as One of the Evaluation Possibilities of the Economic Level: Case of the North Africa Countries

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Abstract: - North Africa is a very interesting region, not only from a historical or political point of view, but also in terms of economics. There are seven economies in this area: Algeria, Egypt, Libya, Morocco, Sudan, South Sudan and Tunisia. These countries are linked not only by a common religion (with the exception of South Sudan), and common history as well, the question is if the common link is economic level as well. This article deals with the comparison of the economic level of the six North African countries on the basis of macroeconomic indicators set by James Angresano, in the years 2007 to 2011. Given the scale of Angresano criteria, only some of states in this region were selected; South Sudan was excluded from the comparison, since it was only founded in 2011. The aim of the article is based on above criteria by comparison to determine whether the economic level of the economies is fundamentally different or not. Hypothesis about the level of economic diversity was formulated, which was confirmed on the basis of the examined criteria. In addition to the comparative method, the article also used the methods of description and analysis.

Key-Words: - Angresano criteria, economic level, economic growth, economic stability, income distribution, trade balance, quality of life

1 Introduction

North Africa is the area with the oldest settlement in the world [1].]. It is naturally divided into three cultural regions: Maghreb (northwest Africa), Sahara and the Nile Valley. Egypt with very favorable conditions for agriculture has contributed to the emergence of a mature civilization, one of the oldest in the world. Positive effect on the development of the area had also very convenient location in close proximity to the Europe and Asia. Many cities arose in antiquity and the early Middle Ages on the trading routes in this region.

The region currently consists of seven countries: Algeria, Egypt, Libya, Morocco, Sudan, South Sudan and Tunisia. The Western Sahara or Sahrawi Arab Democratic Republic is a territorial unit with a controversial international positioning, and the UN has placed it into the category of Non-Self-Governing Territories, which is not included in the North African region in this paper.

The listed countries are connected primarily with Islam, and most of their inhabitants identify as Arabs (with the exception of South Sudan, where Arabs and Muslims are not a majority of the population). In contrast, the main distinguishing factor of these countries is the nature of the economy and level of development of the country, for example according GDP per capita (see later).

North Africa is one of the richest regions of Africa as a result of ownership of natural resources and proximity to European markets. There are states of different size, economic levels, with different political systems and religious issues in this area. Large variety of wealth puts Libya to the forefront of the region and the entire African continent as well. Libya traditionally achieves, as a result of oil revenues, higher GDP per capita than other states. The outbreak of the "Arab Spring" interrupts oil production in Libya when its per capita GDP dropped to 6.017 USD in 2011 from 14.460 USD in 2010. By contrast South Sudan has the lowest GDP per capita of the region, and with Sudan belongs to the one of the world's least developed countries, partly due to long-term political instability and civil wars.

The aim of this work is based on selected criteria to identify and compare the economic level of the selected countries in the period 2007-2011, including the factors having a different character and a different degree of influence on the economic situation. The analysis and comparison has excluded

South Sudan as a new country, which was established in 2011, due to the unavailability of data.

The hypothesis on which the article is based, assumes that there are major differences between the economic levels of the countries of North Africa measured by Angresano criteria as well as by them based on the common measurement of development of the region (level of GDP or international trade).

When describing a characteristic of North Africa the descriptive-analytical method will be used, while the comparison of the specific economic levels will be evaluated by comparative method.

This article deals with the comparison of the economic level of six North African countries on the basis of macroeconomic indicators set by James Angresano, which are: economic growth, economic stability, income distribution, payment and balance of trade, exchange rate, quality of life and the criterion of static and dynamic performance. Given the scale of these criteria, only some variables of these groups of criteria were used for comparison, and static and dynamic performance were not analyzed at all (these two criteria were omitted due to the unavailability of data).

2 Problem Formulation

For the purpose of comparison of the economic level of the economic system, there are four schemes of comparison criteria. Three of these schemes are considered standard and applicable to most economic systems, and one system was designed exclusively for comparison between countries of Central and Eastern Europe during the transformation [2].

The standard comparative criteria include the Bornstein system, the Koopmans-Montias system and a set of comparison criteria by Angresano [3].

2.1 Bornstein Criteria

Morris Bornstein argued that the aim of comparing economic systems is to find ways to improve the level of the state [4]. For this purpose, the results of different systems are compared, which operate in similar or different environments. He determined the nine measures of economic levels in his work [5]:

1. an output level defined by real income per capita as the idea of the material standard of living in a given society
2. the growth rate of output - a criterion that is associated with the ability of the economic system to invest
3. composition of output - it is important to distinguish between investment, military expenditures and private and public consumption
4. static efficiency, which can be understood as a state, which in formal terms corresponds to Pareto optimal redistribution
5. dynamic efficiency refers to the increase in potential output achievable from additional sources of labour, capital and land
6. macroeconomic stability is a condition where there is minimum volatility in output, employment and price levels around their equilibrium level
7. degree of freedom, understood in sense of individual political and civil liberties, in the narrower sense is economic freedom such as a career choice, consumption and property
8. individual economic security, including security income and/or employment or healthcare, where a key role within this criterion is played by a full social safety net in a given society
9. the degree of equity in the distribution of wealth and income in society.

Other criteria may be derived. Bornstein proposed the combination of output level (1st criterion), composite output (3rd criterion) and population size for sustainability index. Similarly, "economic justice" usually refers to the objectives in relation to the degree of freedom (7th criterion), the economic security of the individual (8th criterion) and the degree of fairness in the distribution of wealth and income in society (9th criterion).

Some of these targets are complementary, i.e., they reinforce each other: for example, the higher the velocity is, the higher is the output level in the next period. Other objectives could be competitive, it means that they compete with each other: for example, price stability may be inconsistent with the high level of performance and high-speed of economic growth.

2.2 Koopmans-Montias Criteria

Koopmans and Montias proposed a set of seven comparison criteria [6]:

1. the efficiency of resource use - or a criterion of strategic importance in the framework of economic analysis represents an "embracing" indicator, which is conceived in relation to the economic system in terms of allocative efficiency
2. composition of the final production - this criterion is considered a representative indicator of the gross domestic product, which can be compared with

individual economic entities, i.e. the share of consumption expenditures and gross investment to GDP on military programmes on the one hand and the level of private and public consumption, on the other
3. equality and economic security of the individual - a significant scale, commonly associated with the concept of economic freedom, which together form a comprehensive criterion, showing the quality of the analyzed economic system
4. employment, income and price stability
5. the ability of adaptation of the economic system
6. level of consumption of goods and services per capita, the criterion with limited information about the distribution of power among the various groups of the population, yet according to Koopmans and Montias considered a universal indicator for assessing the economic level
7. growth in consumption per capita through technological progress and the accumulation of physical and human capital are seen as a dynamic representation of the previous criteria and identified with the indicator growth rate of gross domestic product.

2.3 The System of Comparison Criteria by Angresano

James Angresano designed by one of the three standard system comparison criteria of economic level, distilled into six fundamental points [7]:
1. author connects economic growth especially with the availability of goods and services, which in the economic system strongly influence the changes in the output level. The level of real gross national product per capita, the total value of the normal production of goods and services, inflation and population growth rates are indicators of the criteria
2. economic stability is seen as a measure, duration and regularity with which there is a variation in the level of employment, prices, value of the national currency in foreign exchange markets, the level of output, etc. The unemployment rate, employment rate, inflation rate measured by changes in the consumer price index or the implicit price deflator and gross domestic product deviations from the long-term average represent in this case economic indicators
3. the distribution of income – standard indicators for this criterion are the Lorenz curve, Gini coefficient and the coefficient representing the percentage of income received by 40% of households with the lowest and 20% with the highest income;
4. balance of payment and the balance of trade and the exchange rate are indicators that collectively reflect the economic level criterion of a particular economic system at the international level
5. quality of life is a broad indicator that expresses a number of different indicators. The author ranks, for example, the degree of pollution of air and water resources, the level of crime and corruption in government, access to education and healthcare, the infant mortality rate and the average number of live births
6. static and dynamic performance means efficient use of resources in the economic system as at the relevant time (static performance) and over time (dynamic efficiency). The indicator of capital productivity, or the relative distance of the economy from the production possibility frontier determines the level of static performance. The dynamic performance quantifies the growth of output per worker or per unit of capital and the total factor of productivity

Comparison of the economic level of countries of North Africa will be based on macroeconomic indicators set by James Angresano, which are: economic growth, economic stability, income distribution, payment and trade balance, and quality of life. Criterion static and dynamic performance is omitted due to unavailability of data.

2.4 Non-standard System of Comparison Criteria

This system has been proposed exclusively for the comparison of the countries in transition and includes six criteria:

1. Economic growth, which covers indicators such as GDP per capita, growth in industrial production, construction and agricultural production.
2. Adaptation of the economic system in relation to the aim where changes of ownership forms, forms of privatization, the structure of business entities, participation of foreign capital, the transformation of governing institutions, territorial and commodity structure of foreign trade are included.
3. Economic stability, where the unemployment, rising cost of living, consumer price index, inflation and debt are classified.
4. Income distribution, through the dynamics of poverty and the Lorenz curve.
5. Economic efficiency, which includes share of each sector on GDP and employment.
6. Quality of life, to which belong the criminality, the corruption and child mortality.

Bornstein criteria (output level, growth of output, composition of output, staticefficiency, dynamic efficiency, macroeconomic stability, degrese of freedom, individual economic security and the degree of equity in the distribution of wealth and income in society), nor Koopmans-Montias criteria (efficiency of resource using, the composition of the final production, equality and economic security of the individuals, employment, income and prices stability, the ability of adaptation of the economic system, the level of consumption of goods and services per capita, consumption growth per capita through technological progress and the accumulation of physical and human capital) can not be used due to the lack of necessary data. The last mentioned comparison system does not match the political and economic situation of the compared economies.

3 Problem Solution

Now the first five Angresano criteria in six different economies will be analyzed and compared. From each group only certain variables to best display the situation of each country in the economic field will be selected.

3.1 The Criterion of Economic Growth

The criterion of economic growth formulates, according Angresano, four indicators: GNP per capita, GDP, rate of inflation and population growth. The indicator of per capita GNP and created GDP was chosen for the purposes of our comparison.

Development of GNP per capita for individual countries in North Africa from 2007 to 2011 is shown in Table 1, according to which the highest value was achieved by Libya (except for the crisis year of 2011), as well as Algeria and Tunisia, while the citizens of Sudan produce domestically and abroad the lowest total monetary value of goods and services [8].

Table 1 Development of GNI per Capita in 2007-2011 (in USD)

Country	2007	2008	2009	2010	2011
Algeria	3,620	4,260	4,470	4,370	4,470
Egypt	1,560	1,880	2,160	2,420	2,600
Libya	11,180	16,285	12,320	11,473	6,610
Morocco	2,240	2,540	2,770	2,850	2,970
Sudan	900	1,080	1,190	1,280	1,310
Tunisia	3,560	3,900	4,100	4,140	4,070

Comparing the performance of North African economies by GDP (see Table 2), we find that the highest total monetary value of goods and services in 2007-2011 was created on their territory by Egypt, Algeria and Morocco. In contrast, South Sudan, Libya and Tunisia reached the lowest values. Libya and Sudan experienced due to the internal situation a decrease of production in the last reporting year [9].

One of the problems related to GDP growth, in addition to the political situation, it may be also a lack of support for small and medium business. As [10] point out, SME account for nearly 80 % of the employment and nearly 80% of all value addition within the economy, directly and indirectly. Similar numbers can be expected for GDP and exports.

Table 2 Production of GDP in 2007-2011 (in bil. USD)

Country	2007	2008	2009	2010	2011
Algeria	135,803	70,989	138,120	161,979	188,681
Egypt	130,478	162,818	188,984	218,894	229,531
Libya	71,803	93,168	62,360	73,599	35,699
Morocco	75,226	88,883	90,909	90,803	100,221
Sudan	45,456	53,621	52,646	64,792	64,053
Tunisia	38,934	44,879	43,522	44,239	45,864

Table 3 shows the evolution of population growth in different economies [11]. The highest population growth recorded Sudan, where, however, population growth does not correspond with the growth of GDP and it is causing serious economic problems related to hunger and poverty in this economy. A significant decrease in population growth recorded Libya in recent monitored years, which is caused by the political situation. Other economies are showing stable growth of population, economic growth does not correspond to it in Libya and Tunisia in the last reporting year as well.

Table 3 Population Growth in 2007-2011 (in %)

Population Growth					
Country	2007	2008	2009	2010	2011
Algeria	1.7	1.8	1.8	1.9	1.9
Egypt	1.7	1.7	1.7	1.7	1.7
Libya	1.7	1.6	1.5	1.3	1.0
Morocco	0.9	0.9	1.0	1.2	1.3
Sudan	2.5	2.4	2.4	2.3	2.2
Tunisia	1.0	1.0	1.1	1.0	1.2
Economic Growth					
Country	2007	2008	2009	2010	2011
Algeria	3.0	2.4	3.3	3.3	2.4
Egypt	7.1	7.2	4.7	5.1	1.8
Libya	6.4	2.4	-1.4	3.7	-59.7
Morocco	2.7	5.6	4.9	3.7	4.9
Sudan	12.2	2.3	4.6	2.2	-4.5

Tunisia	6.3	4.5	3.1	3.1	-1.8

3.2 The Criterion of Economic Stability

The unemployment rate, employment rate and inflation rate determine the economic stability criterion measured by changes in the consumer price index or the implicit price deflator and deviations of GDP from the long-term average. For the purposes of our analysis, unemployment and inflation measured by the consumer price index were chosen.

The highest unemployment rates, as shown in Table 4, were reached in 2011 by Libya (19.5%), Tunisia (18.9%) and Egypt (12.1%), which was also one of the main causes of revolutions and rebellions since the end of the year 2010 [12]. In Sudan, high unemployment can be attributed to conflict.

Table 4 Unemployment Rate in 2007-2011(%)

Country	2007	2008	2009	2010	2011
Algeria	13.8	11.3	10.2	10.0	10.0
Egypt	9.2	8.7	9.4	9.2	12.1
Libya	13.5	17.7	20.7	20.4	19.5
Morocco	9.8	9.6	9.1	9.1	8.9
Sudan	16.8	16.0	14.9	13.7	12.0
Tunisia	12.4	12.4	13.3	13.0	18.9

The problem of North Africa is the population growth and unsustainable urban settlements due to adverse geographical conditions, which do not keep the tempo with the growth of employment. The main point of the region is the elimination of unemployment among young people (over 30% for persons aged 15-24) and a lack of skilled labour through reforms in education, public investment into infrastructure and quality of professional trainee.

Table 5 shows the price level in CPI in 2007-2011 [13]. CPI reflects the price level as the average price level set of goods and services consumed by the average household. It compares the costs for the purchase of a certain unchanging set of goods.

Table 5 Inflation Rate in 2007-2011 (%)

Country	2007	2008	2009	2010	2011
Algeria	3.6	4.9	5.7	3.9	4.5
Egypt	11.0	11.7	16.2	11.7	11.1
Libya	6.2	10.4	2.4	2.5	15.9
Morocco	2.0	3.9	1.0	1.0	0.9
Sudan	8.0	14.3	11.3	13.0	18.3
Tunisia	3.4	4.9	3.5	4.4	3.5

High and volatile inflation as a result of the Arab Spring has brought increased uncertainty and risk in the region. Nevertheless, the highest inflation rate for 2011 has not been measured either in Libya (15.9%) or in Egypt (11.1%), but in Sudan (18.3%). The reason for such a high price level is still unresolved disputes over borders with South Sudan, in particular the right to extract oil, which is located there. Due to the quiet during the uprising, unlike the other countries of North Africa, and the promised political changes of King Mohammed VI., Morocco recorded in 2011 as in the previous four years the smallest decline in purchasing power of money.

3.3 Criterion of Income Distribution

Distribution of income in this case is seen as the final redistribution of income between households so as to comply with the principle of justice. Redistribution is normally provided by the state in the form of transfer payments to households with low income, and resources for the payment are obtained by the state with the taxes from the household.

Income inequality in society is most often measured by the Gini coefficient (index). The index is derived from the Lorenz curve and takes values from 0 to 1 (resp. 0-100%), the smaller the value, the more even distribution of income is: 0 would imply a perfectly uniform distribution, where all have the same income, while 1 means perfect inequality, where one person has all the income and the other people do not have any. The coefficient does not take into account the absolute values of income and therefore does not reflect the wealth or poverty, but only the uniformity of distribution.

The World Bank [14] evaluated the North African economies by the Gini coefficient as the average (around 40%), located between the top income countries (19-28%, Europe) and countries with extreme values (50-60%, Southern Africa, Central and part of South America). The best results for a given category were received by Egypt (34.4%), followed by Algeria and Lybia (35.3 and 36%), while Morocco, Tunisia and Sudan (40.9, 41.5 and 51%) were on the opposite end; see Figure 1.

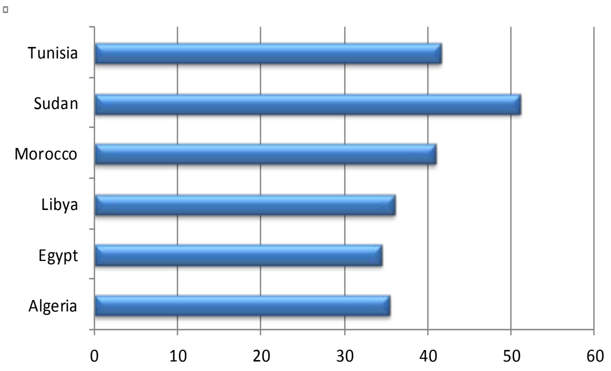

Figure 1 Gini Index in Countries of North Africa

3.4 The Criterion of Balance of Payments and Trade Balance

For the purpose of this article, the comparison of current account and trade balance was chosen, in the case of the current account as a share of GDP, in the case of the balance of trade in billions of USD.

The cause of the current account surplus of Algeria in 2011 is the high price of exported crude oil and natural gas. The risks to the sustainability of such success, however, are high, and economic policy is not resulting in fast enough adaptation for the event of a significant decline in these prices. However, certain results in Algeria are still being reached through austerity measures and economic restructuring supported by the IMF.

The remaining countries in the region continued the negative trend in recent years. The worst current account deficit was in Egypt (-9.4 billion), followed by Morocco (-6.9 billion USD). Weakening the position of the current account balance of payments, the North African economies caused restricted access to foreign financial assets, resulting in negative trends especially of countries' foreign trade. Libya underwent very drastic development of it and during this period lost almost half the share of GDP (see Table 6) [15].

Table 6 The Current Account Balance in 2007-2011 (in % of GDP)

Country	2007	2008	2009	2010	2011
Algeria	22.5	19.8	0.3	7.6	9.3
Egypt	1.7	0.5	-2.4	-2.0	-4.1
Libya	41.7	45.2	10.5	11.4	-6.0
Morocco	-0.1	-5.4	-5.1	-4.2	-4.5
Sudan	-12.5	-9.4	-13.9	-6.4	-7.5
Tunisia	-2.4	-3.8	-2.8	-4.8	-7.4

Algeria due to the high prices of oil and natural gas has had a consistently positive trade balance since 2007 [16], repays debts on time and increases foreign exchange reserves. In the leadership it deposed Libya, which ended in an active trade balance in 2011, but compared to 2010 decreased by 10.1 billion USD. In Egypt, Morocco and Tunisia, the import of goods prevails over exports in the long term, which is mainly due to unfavourable geographical conditions and the uncontrollably increasing pace of population in the case of Egypt. These facts are further compounded by the "Arab Spring". Countries have a lack of export earnings, which are crucial for the ability to repay foreign debt, and for the amortization of the trade deficits they have to borrow money from abroad.

Table 7 Balance of Trade in 2007-2011(in bil. USD)

Country	2007	2008	2009	2010	2011
Algeria	34.1	40.0	7.8	18.2	26.4
Egypt	-16.3	-23.4	-25.2	-25.1	-23.1
Libya	25.2	33.7	12.0	14.0	3.9
Morocco	-14.1	-19.2	-16.3	-15.1	-20.4
Sudan	1.2	3.4	-0.7	2.4	-0.6
Tunisia	-2.9	-4.0	-3.7	-4.6	-7.3

Exchange rates of North African economies remained relatively stable with occasional deflecting during the years 2007-2011, which was mainly caused by the global crisis and the crisis in the region. Table 8 shows a direct exchange records when courses are expressed as a certain number of units of the North African currencies per unit of foreign currency - one USD [17]. The weakest currency of the analyzed countries is the Algerian dinar, thanks to which the Algeria keeps the excellent export capacity and support of foreign direct investment.

Table 8 The Development of Exchange Rates in 2007-2011 (National Currency to USD)

Country	Cod	2007	2008	2009	2010	2011
Algeria	DZD	69.29	64.58	72.65	74.39	72.94
Egypt	EGP	5.64	5.43	5.54	5.62	5.93
Libya	LYD	1.26	1.22	1.25	1.27	1.22
Morocco	MAD	8.19	7.75	8.06	8.42	8.09
Sudan	SDG	2.02	2.09	2.30	2.31	2.67
Tunisia	TNG	1.28	1.23	1.35	1.43	1.41

3.5 The Criterion of Quality of Life

Quality of life is the last Angresano indicator comparing the achieved level of economic countries. At present, the quality of life is understood as a broad concept involving physical health, mental health, education, the poverty rate, the level of independence, economic, political, social, cultural and ethnic relationships, faith, and relationships of the main features of the environment. In terms of this criterion, the article analyzed the Human Development Index, education level and the Corruption Perceptions Index.

The Human Development Index (HDI) has been used by the United Nations since 1993 to express the quality of human life, with the help of a comparison of data on poverty, literacy, education, life expectancy, fertility and other factors. The HDI takes values between 0-1 (value 1 is affiliated to the best state). Since 2010, the index has measured the average life expectancy and levels of health care, access to education and the standard of living (GDP per capita in USD, in PPP).

Libya, Algeria and Tunisia have the highest HDI among the countries of North Africa. Other countries in the region are also classified as the economies with medium level of human development, except Sudan [18]. All countries achieve progression in the reporting period, except for Libya, which has worsened in the results of HDI due to the political situation (see Figure 2).

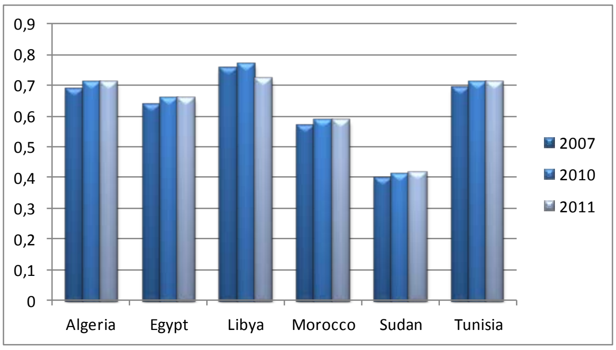

Figure 2 Index HDI in the Year 2007, 2010 and 2011

Quality of life depends on the degree of of poverty. Poverty is one of the most serious social problems that mankind has been facing for a long period of time [19]. This phenomenon affects both developing and developed countries (in European Union is poverty rate between 11% to 28%, see [20]). Therefore, the Human Poverty Index, HPI has been determined to complete the HDI. This index was replaced by the Multidimensional Poverty Index (MPI - for our compared economies is not available) in 2010. HPI was distinguished for developing economies (HPI-1) and developed economies (HPI-2) and took on values of 1-100. The basic data for calculation are the percentage of the population with inadequate access to drinking water, the percentage of malnourished children, the literacy rate and the boundaries of probable expectancy age of 40.

According [21] and [22] watch the compared economies reached the following values in 2007 and 2009 – in the least poor economy, Barbados, index took on value 3:

- Algeria 21.5 and 17.5
- Egypt 20.0 and 23.4
- Morocco 33.4 and 31.1
- Tunisia 17.9 and 15.6
- Sudan 34.4 and 34.0
- Libya n/a and 13.4.

Regarding poverty, we can find big differences in the countries of North Africa - as Libya, Tunisia and Algeria achieved results below 20, Morocco and Sudan are on the opposite side with values More than 30.

The whole region of North Africa is placed in the top positions of the continent in the field of education. Basic education is very good in all analyzed countries, see Table 9 [23]. The situation is worse in secondary and higher education (at least in Morocco, 52% and 12% of the population, most in Libya 93% and 55% of the population). Libya has the highest literacy rates (88.9% of adults and 99.9% of youth), while the lowest literacy rate is shown by Morocco - 56% of adults and 79% of the youth.

Table 9 Adult and youth literacy rate in the years 2007-2011 (average)

Country	adult			youth		
	all	men	women	all	men	women
Algeria	72.6	81.3	63.9	91.8	94.4	89.1
Egypt	66.4	74.6	57.8	84.9	87.9	81.8
Libya	88.9	95.2	82.0	99.9	99.9	99.8
Morocco	56.1	68.9	43.9	79.5	86.7	72.1
Sudan	70.2	79.6	60.8	85.9	89.1	82.7
Tunisia	77.6	86.4	71.0	96.8	98.1	95.8

Regarding health issues, the average age of the population of North Africa is relatively high and, with one exception (Sudan), very similar (see Table 10). The infant mortality rate unfortunately is also higher, but compared to other countries in Africa the region achieved low values (again with the exception of Sudan). The best results regarding the deaths of young children are in Libya (about 16 against 95 deaths in Sudan) [24].

Table 10 Life Expectancy and Infant Mortality Rate in Years 2007-2011 (% of Inhabitants)

Country	2007	2008	2009	2010	2011
Life expectancy - men					
Algeria	70.8	71.0	71.2	71.4	71.6
Egypt	70.3	70.6	70.9	71.1	71.3
Libya	71.6	71.8	72.0	72.2	72.4
Morocco	68.8	69.1	69.4	69.7	69.9
Sudan	58.6	58.8	59.1	59.4	59.7
Tunisia	71.8	72.0	72.1	72.3	72.4
Life expectancy - women					
Algeria	73.6	73.9	74.1	74.4	74.6
Egypt	74.1	74.4	74.7	75.0	75.2
Libya	76.8	77.0	77.2	77.4	77.6
Morocco	73.3	73.6	73.9	74.2	74.5
Sudan	61.9	62.2	62.6	62.9	63.3
Tunisia	76.0	76.2	76.4	76.6	76.8
Infant Mortality per 1000 Inhabitants					
Algeria	32.5	31.4	30.4	29.4	28.5
Egypt	30.2	29.0	28.0	27.1	26.2
Libya	17.2	16.7	16.2	15.8	15.4
Morocco	38.8	37.3	35.8	34.4	33.1
Sudan	99.0	96.9	94.9	92.7	90.5
Tunisia	25.9	25.3	24.6	24.0	23.4

The quality of life quite is significantly affected by the security situation of countries and the risks, which include: corruption, organized crime and terrorism, trade with weapons and weapon technology, armed conflict and environmental safety (wars for natural resources).

The Corruption Perception Index (CPI) is an index that focuses on the perception of the existence of corruption among public officials and politicians, and defines corruption as the abuse of public office for private gain. Since 1995, it has been produced jointly by the international non-governmental organization Transparency International and Göttingen University in Germany. The index is constructed as the unweighed average of the available public opinion surveys conducted by independent institutions among business people, country analysts and representatives of the professional community.

In the range of indices, 0 is the highest corruption rate and 10 is the lowest one. The index compared more than 178 countries in the period under review and among the countries of North Africa, Tunisia was ranked in the best place, followed by Morocco. Sudan finished worst, and Libya has worsened very much in the last year. Results from the reference years are shown in Table 11 [25].

Table 11 Corruption Perception Index in 2007-2011 (value and rank)

Country	2007 (179)	2008 (180)	2009 (180)	2010 (178)	2011 (182)
Algeria	3.0 (99)	3.2 (92)	2.8 (111)	2.9 (105)	2.9 (112)
Egypt	2.9 (105)	2.6 (115)	2.8 (111)	3.1 (98)	2.9 (112)
Libya	2.5 (131)	2.6 (126)	2.5 (130)	2.2 (146)	2.0 (168)
Morocco	3.5 (72)	3.5 (80)	3.3 (89)	3.4 (84)	3.4 (80)
Sudan	1.8 (172)	1.6 (173)	1.5 (176)	1.6 (172)	1.6 (177)
Tunisia	4.2 (61)	4.4 (62)	4.2 (65)	4.3 (59)	3.8 (73)

According Angresano the ecological and environmental approach is very important for the measurement of the quality of life and life in the favorable environment is one of the basic human rights. According [26] the high population densities and many other human activities result in pollution, including that by contaminated wastewater. In the area of petrochemical industry high levels of carcinogens have been determined from petroleum and chemical refinery air emissions and many of the chemical discharges were found sever to children [27]. The question remains, however, to what extent the people in regions such as North Africa have the opportunity to influence the unfavorable ecological situation.

4 Conclusion

The selected criteria were evaluated and the order of the selected countries of North Africa was determined based on a point score. Each criterion consists of a variable number of sub-criteria that covered each category. A country which is placed as a first in order achieves the best result in the given category. Results of the individual criteria were included in the in table 12.

Using the comparative method, it was found that the best results were achieved by Tunisia, Libya, followed by Egypt and Morocco. Tunisia took first place in two cases from five examined criteria, than Libya, that and Morocco in one case, and Egypt and Sudan achieved poor results in all the criteria.

In the area of economic growth (criterion C1), Tunisia received the best results for the period, despite the fact that the internal situation caused a slowdown in 2011. Morocco thanks to a quieter process of the Arab Spring has become the economically most stable country (criterion C2). Egypt only indicated the fairest distribution of income in the North African countries in measurement of the Gini coefficient (C3).

Libya achieved the best results in the criteria C4 in the reported period, due to high export prices of oil and natural gas. This improves the position of the current account balance of payments in cooperation with the undervalued exchange rate, which ensures for the country excellent export ability and direct foreign investment.

Quality of life was the last Angresano criterion for evaluating the economic level of countries of North Africa (Criterion C5). The first place was received by Tunisia, followed by Libya, Algeria, Egypt and Morocco. Sudan is placed in the last analysis places as a result of many years of struggles and wars, Egypt on the very last place.

Table 12 Results of Comparison of Criterions

Country	C1	C2	C3	C4	C5	Result
Algeria	5	3	2	2	3	5
Egypt	4	4	1	3	4	3-4
Libya	3	5	3	1	2	1-2
Morocco	2	1	4	4	5	3-4
Sudan	6	6	6	6	6	6
Tunisia	1	2	5	5	1	1-2

The above findings thus confirm the hypothesis and conclude that the economic level of the countries in the North Africa is different, despite the common features and integration collaboration, and is affected by various economic, political, security, social, ethnic, cultural and religious factors that have a different character and a different degree of influence on their position in the region and in the world economy.

Acknowledgements
This paper was supported by the Ministry of Education, Youth and Sports within the Institutional Support for Long-term Development of a Research Organization in 2014.

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