

AN ASSESSMENT OF THE ALGERIAN ECONOMY ON THE SUSTAINABLE COMPETITIVENESS INDEX DURING THE PERIOD OF 2014-2023

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ABSTRACT

This study aimed to offer a thorough exploration of the concept of sustainable competitiveness, bridging national productivity and sustainable development. In addition, on the concepts that have a relationship with this study. Based on the Global Sustainable Competitiveness Index (GSCI), this study presents effective metrics that comprehensively measure the sustainable competitiveness rank and score for Algeria during the period of 2014-2023. Also measuring the score of the country on the six sub-indexes (GSCI) during the period of study. The result shows that Algerian performance has middle and needs more efforts and solutions by the government to enhance its performance.

Keywords: Competitiveness, Sustainable competitiveness, Global competitiveness index, Economic performance, Sustainable economic development, Algeria.

INTRODUCTION

Sustainable competitiveness is a crucial subject that link competitiveness of a nation to sustainability requirements, especially after the appearance of the concept of sustainable development, which was defined by the World Commission on Environment and Development (WCED) of the United Nations in 1987. In the report “Our Common Future”, sustainable development is defined as that which strives to meet the needs of present and future generations in full compliance with the environment. The essence of sustainable development consists in integrating the economic, social, and environmental dimensions in such a way as to ensure development for future generations.

The Global Sustainable Competitiveness Index assesses countries by using some sub-indexes or components that are important for any country to enhance its performance generally, but the important thing is to include sustainability requirements in their development strategies under sustainable development goals and other new challenges and issues. Algeria, as a developing country that depends relatively on fuel or fossil energy incomes, will be required to follow specific measures that can be clearly seen when analyzing its ranks and scores in this index for the recent decade, under sustainable development goals and other new challenges and issues.

The rank and the score on the previous index of each country, particularly Algeria, are more useful when knowing their real level, this is why the problem of study appears clearly.

The Problem of the Study and its Sub-Questions

The current environment of the Algerian economy, and the necessity of competitiveness to enhance its performance, especially when taking sustainability challenges into consideration. So the problem of the study crystallizes around the following question.

Does Algeria’s economy have a statistically significant middle score at a significant level ($\alpha=0.05$) on the Global Sustainable Competitiveness Index?

Based on the previous main problem, a set of sub-problems can be formulated as follows:

- Is that there a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the natural capital sub-index?
- Is that there a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the resource efficiency and intensity sub-index?
- Is that there a statistically significant middle score for Algeria's economy on the social capital sub-index?
- Is that there a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the intellectual capital and innovation sub-index?
- Is that there a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the economic sustainability sub-index?
- Is that there a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the governance efficiency sub-index?

Study Hypotheses

In order to address the problem research topic and its associated sub-questions, the following hypothesis were formulated:

1. The main hypotheses: Algeria's economy has a statistically significant middle score at a significant level ($\alpha \leq 0.05$) on the global sustainable competitiveness index.
2. The first sub-hypotheses: There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the natural capital sub-index.
3. The second sub-hypotheses: There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the resource efficiency and intensity sub-index.
4. The third sub-hypotheses: There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the social capital sub-index.
5. The fourth sub-hypotheses: There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the intellectual capital and innovation sub-index.
6. The fifth sub-hypotheses: There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the economic sustainability sub-index.
7. The sixth sub-hypotheses: There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the governance efficiency sub-index.

Study Objectives

The study's objectives are based on the challenges that impede the process of sustainable competitiveness in Algeria, and its important components which are: Natural capital, Resource Intensity, Social capital, Intellectual capital, Economic Sustainability and Governance.

So, this study aims particularly to:

- Identify the concept of sustainable competitiveness and its components.
- Make an assessment of Algeria in the global sustainable competitiveness index.

Study Methodology and Tools:

In this study, we utilized an analytical-descriptive methodology to explore the varied facets of the study variables, clarifying and understanding the relationships among their components. We also utilized the case study method, which facilitates the application of theoretical concepts to real-world situations by collecting data through reports of the Global Sustainable Competitiveness Index and conducting statistical analysis using the Excel and SPSS statistical programs. This approach enabled us to address the study's questions, test its hypotheses, and draw upon various references and sources to construct the theoretical foundation for this research.

Some Previous Studies:

- A study (CHEBA, 2020), Entitled "Sustainable Competitiveness as a New Economic Category – Definition and Measurement Assessment", it is an article published by Technological and Economic Development of Economy Review. The study aimed to assess the level of European Union countries' ability to compete in a sustainable manner and to compare these results with achievements in the area of sustainable competitive position. The research results confirmed the existence of a relationship

between the various areas that consist of the holistic concept of sustainable competitiveness. these relationships are not always strong, though and this is a crucial fact for further research in this area.

- **A study** (URBANIEC, 2016) Entitled “Sustainable Competitiveness. Opportunities and Challenges for Poland’s Economy”, it is an article published by the *Ekonomia I Środowisko Review*. The study aimed to make an analysis of the competitiveness of the Polish economy in the context of sustainable development based on the Global Sustainable Competitiveness Index. Based on this analysis, it will be possible to determine the competitiveness of the Polish economy, taking into account the criteria of sustainable development.
- **A study** (Rajnoha & Lesnikova , Sustainable Competitiveness: How Does Global Competitiveness Index Relate to Economic Performance Accompanied by the Sustainable Development? , 2022) Entitled “Sustainable Competitiveness: How Does Global Competitiveness Index Relate to Economic Performance Accompanied by the Sustainable Development?”, it is an article published by the *Journal of Competitiveness*. The objective of the paper is to provide the results of extensive research based on verified Eurostat data to explore this research challenge in the Visegard group 4 countries during the period of 2007-2019. The conclusion outlines the direction from improved competitiveness through higher economic performance reinforcing research and development expenditure and high-tech employment to better sustainability and well-being.

SUSTAINABLE COMPETITIVENESS CONCEPTUAL FRAMEWORK

Sustainable competitiveness is a complex concept that needs to address the following elements:

Competitiveness

Academic definitions of competitiveness encompass both general questions about strategic choices without specifying the unit of analysis as well as definitions at the national level. Scott and Lodge (1985) proposed the focus on competitiveness at the country level. According to them, competitiveness is a “country’s ability to create, produce, distribute, and/or service products in international trade while earning rising returns on its resources”. In a general sense, competitiveness is defined as the economy’s capability of long-term economic growth.

According to economists from the WEF, competitiveness is defined “as the set of institutions, policies, and factors that determine the level of productivity of a country” The WEF definition links micro- (company-level) to macro- (country-level) competitiveness, and reflects the complexity of the economic development process. This definition refers to productivity because growth models indicate that, in the long term, productivity is a key factor explaining the level of prosperity of a country and thus its citizens. Productivity also determines the rate of return obtained by investments in the economy, which in turn are the primary driver of its growth. Therefore, a more competitive economy is considered one that can grow faster over time. (URABANIC, 2016)

Sustainable Development

Public interest in sustainable development has also increased over the past few decades, driven by influential work such as the report “Our Common Future” which was published under the auspices of the United Nations by the Brundtland Commission in 1987. In this seminal report, sustainable development was defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” The breadth of the definition was meant to capture the several dimensions of development that go beyond the usual boundaries of economic growth in order to include both the tangible and intangible necessities of life. This initial concept mainly focused on environmental aspects of development. However, it has evolved significantly over time, and today it is widely accepted that sustainability also includes an economic and social dimension. (BEÑAT, et al., 2013-2014)

To move forward in the process of sustainable development, governments and international organizations have negotiated an ambitious post-2015 developed agenda.

Based on forgoing and expanding the core components of the MDGs, this follow-up agenda, known as the Sustainable Development Goals (SDGs), aims to improve people’s lives and to protect the planet for future generations. By including elements of economic development, social inclusion, and sustainable environmental

management, the SDGs have been defined according to the triple-bottom-line sustainability approach. The main objective is to deal with a set of problems that affect developed and developing countries. For this reason, a global perspective has been adopted in the definition of the goals and in the identification of the guiding principles for the policy framework.

The SDGs, adopted by UN Member States in September 2015, include a set of 17 goals and 169 targets to be achieved by 2030. Some of the core elements have been designed based on the principles included in the MDGs. (Andreoni & Miola, 2016)

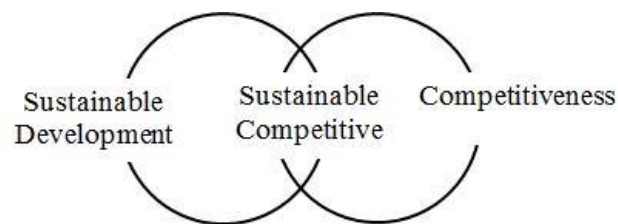
The transformation force of Agenda 2030 represents 17 sustainable development goals. In general, the mission of these goals is to stimulate actions in the next 15 years to achieve a set of important social and environmental priorities worldwide. (Rajnoha & Lesnikova, Sustainable Competitiveness: How Does Global Competitiveness Index Relate to Economic Performance Accompanied by the Sustainable Development?, 2022)

Sustainable Competitiveness:

According to “SolAbility Sustainable Intelligence”, an independent sustainable management advisory and think-tank founded in 2005, sustainable competitiveness is defined as “the ability of a country to meet the needs and basic requirements of current generations while sustaining or growing the national and individual wealth into the future without depleting its natural, intellectual, and social capital”. The sustainable competitiveness model developed by SolAbility includes all relevant factors of sustained growth and wealth creation of a nation – natural capital availability, resource intensity, innovation and business capabilities, and social cohesion. (URABANIC, 2016)

Competitiveness is not only about the economic performance of a nation, it is also about the environmental and social performance,Source spécifiée non valide. And sustainable growth means decoupling economic growth from the use of resources, building a resource-efficient, sustainable, and competitive economy.Source spécifiée non valide. Moreover, several researchers, politicians, and economists state a positive association between environmental and social performance and national competitiveness. (ZARGARTALEBI , 2021)

It should be noted, however, that the current proposals to define and measure this new term have been limited to include areas describing sustainable development in the definitions traditionally used to describe the competitiveness of countries in the world. The relationship between competitiveness, social conditions, and environmental responsibility is usually presented as follows this figure.



Source: (Katarzyna, BAŁ , & Katarzyna, 2020)

Figure 1

THE MAIN COMPONENTS OF SUSTAINABLE COMPETITIVENESS

To be able to formulate a suitable model or trend of “sustainable competitiveness development”, it is important to understand all its key components - economic, environmental, and social - and their interrelationships. However, several research studies have addressed only some parts of this integrated model, e.g., the link between sustainable development goals. (Rajnoha & Lesnikova , Sustainable Competitiveness: How Does Global Competitiveness Index Relate to Economic Performance Accompanied by the Sustainable Development? , 2022)

Therefore, sustainable competitiveness is the ability to generate and sustain inclusive wealth without diminishing the future capability of sustaining or increasing current wealth levels. (SolAbility, 2023)

THE GLOBAL SUSTAINABLE COMPETITIVENESS INDEX

first published in 2012, the Global Sustainable Competitiveness Index (GSCI) measures the competitiveness and sustainability of countries, is based on 190 quantitative indicators derived from international organizations (World Bank, IMF, UN). All indicators are evaluated as-is and analyzed for trends. The outcome is a comprehensive view of strengths and weaknesses for each country, as well as indication of the future direction and potential.

The GSCI serves as a comprehensive alternative to the GDP, to assess country-specific and issue-specific risks for operators and investors, and to verify progress for countries.

GSCI: Measuring Competitiveness beyond GDP

Published since 2012, the Global Sustainable Competitiveness Index (GSCI) is the most comprehensive ranking of countries currently available. The GSCI measures the competitiveness of countries based on 190 measurable, quantitative indicators derived from reliable sources, such as the World Bank, the IMF, and various UN agencies. The 190 indicators are grouped into six sub-indexes: natural capital, resource efficiency and intensity, social cohesion, intellectual capital, economic sustainability, and governance efficiency.

The Sustainable Competitiveness Model:

- **Intellectual capital and innovation:** the capability to generate wealth and jobs through innovation and value-added industries in the globalized markets.
- **Economic sustainability:** Economic Sustainability and competitiveness reflect the ability to generate wealth through sustainable economic development.
- **Governance efficiency:** Results of Core State Areas and Investments Infrastructure, Market and employment structure, the Provision of a Framework for Sustained and Sustainable Wealth Generation.
- **Natural capital:** the given natural environment, including the availability of resources, and the level of depletion of those resources.
- **Resource efficiency and intensity:** The efficiency of using available resources as a measurement of operational competitiveness in a resource-constraint World.
- **Social capital:** health, security, freedom, equality, and life satisfaction within a country.

The GSCI can be distinguished by the inclusion of many indicators as determinant variables. They are pragmatically selected based on theoretical aspects explaining prosperity. The factors are grouped hierarchically into categories depending on how they affect competitiveness. Regarding the issues to be considered when selecting indicators, two aspects are to be mentioned—namely, taxation policies and regulatory policies in the labor market because they have no simple linear relationship with prosperity. Thus, especially in developed countries, tax rates appear to be higher in countries with strong institutions, whose investments in social services are more rational. However, the case of the less-developed countries must be mentioned, because these also have important level of taxation, but their spending in the public system is less efficient. Thus, the econometric effect on competitiveness is harder to determine. The GCI requires the annual gathering of data from many countries, aiming to offer a framework to inform overall policy while establishing priorities at specific policy level. Thus, the GCI

model aims to determine a general classification of countries according to competitiveness, in order to build an overall predictor of productivity. (H. Popescu, Sima, Nica , & Gheorghe , 2017)



Source: (SolAbility, 2023)

Figure 2

THE SUSTAINABLE COMPETITIVENESS MODEL

Analyzing Algeria’s data in (GSCI) 2014-2023:

After collecting data from the GSCI during the period of study, Algeria’s rank and score on the Global Sustainable Competitiveness Index (GSCI).

Algeria’s Rank on the Global Sustainable Competitiveness Index and its Components

By collecting the results of the main variable, which is Algeria’s rank on sustainable competitiveness and its components, the following table shows the results obtained.

Table 1 ALGERIA’S RANK ON GLOBAL SUSTAINABLE COMPETITIVENESS INDEX AND ITS COMPONENTS							
Sustainable Competitiveness		Natural capital	Resource Intensity	Social capital	Intellectual capital	Economic Sustainability	Governance
Year	RANK	RANK	RANK	RANK	RANK	RANK	RANK
2014	85	98	136	72	89	0	37
2015	74	112	119	30	87	0	57
2016	112	119	140	63	108	0	98
2017	115	120	116	75	116	0	103
2018	115	110	116	75	116	0	103
2019	85	133	94	57	73	0	92
2020	147	136	157	105	102	0	114

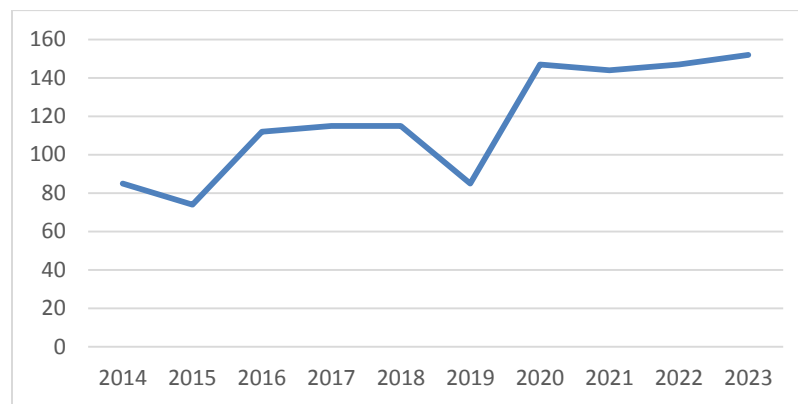
2021	144	138	166	99	80	0	113
2022	147	142	164	84	70	171	153
2023	152	135	173	81	75	176	143

Source: Prepared by the researcher in light of the annual reports of global sustainable competitiveness (2014-2023)

It is noted from the above that Algeria's rank of sustainable competitiveness on the Global Sustainable Competitiveness Index every year belongs to its score, and the rank of its components depends on the score of each one of them, which are natural capital, resource Intensity, social capital, economic sustainability and governance.

Evolution Algeria's rank on the Global Sustainable Competitiveness Index

In order to describe Algeria's rank on the Global Sustainable Competitiveness Index during the period of study from 2014 to 2023, the following chart shows the evolution of the rank in terms of sustainable competitiveness.



Source: Prepared by the researcher in light of the results of Excel

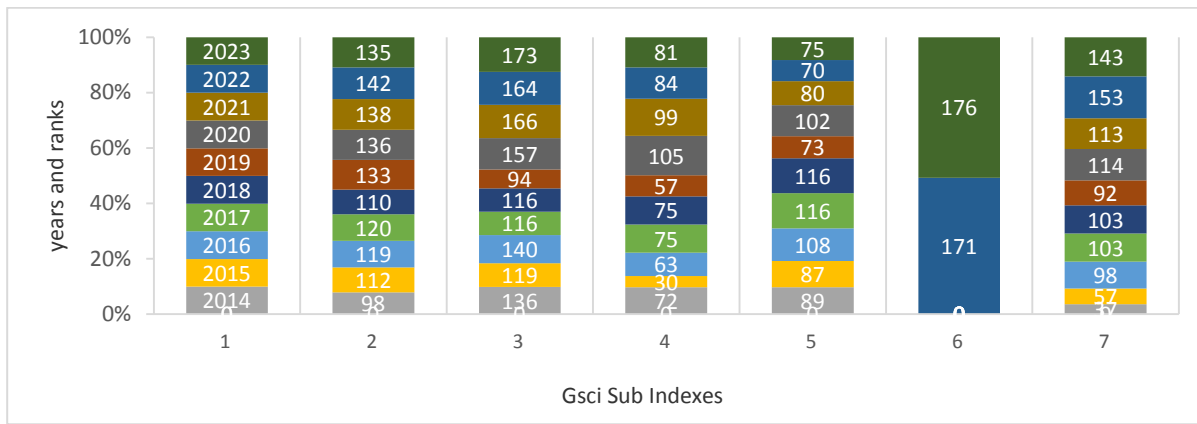
Figure 3

EVOLUTION ALGERIA'S SCORE ON THE GLOBAL SUSTAINABLE COMPETITIVENESS INDEX.

Algeria's rank of sustainable competitiveness has a little increased from 85 in 2014 to the maximum with a rank of 74 in 2015, and then it has decreased to 115 until 2017 and 2018, after which it has increased another time to the rank of 85 in 2019, and finally it has decreased to the minimum with a rank of 152 in 2023.

Evolution Algeria's rank on the Global Sustainable Competitiveness Index

In order to describe Algeria's rank on the Global Sustainable Competitiveness sub-indexes (components) during the period of study from 2014 to 2023, the following chart shows the evolution of the rank as shown in the figure below in terms of its components in order in terms of number: natural capital (1), resource intensity (2), social capital (3), intellectual capital (4), economic sustainability (5), and governance (6).



Source: Prepared by the researcher in light of the results of Excel

Figure 4:

EVOLUTION ALGERIA’S SCORE ON THE GLOBAL SUSTAINABLE COMPETITIVENESS SUB-INDEXES.

It is noted from the above that Algeria’s rank on the Global Sustainable Competitiveness sub-indexes has changed during the period of study, like the following:

- Natural Capital sub-index**
 Algeria’s rank has decreased evolution from the maximum of 98 in 2014 to the rank of 120 in 2017, and then it has increased to 110 in 2018, after which it has a decreasing trend from year to year until the minimum with a rank of 142 in 2022, and finally it has decreased to the rank of 135 in 2023.
- Resource Efficiency and Intensity sub-index**
 Algeria’s rank has an increased from year to year, with a rank of 72 in 2014 to a maximum rank of 30 in 2015; after that, it has a decreasing trend from year to year until the minimum, with a rank of 173 in 2023.
- Social Capital sub-index**
 Algeria’s rank has an increased from year to year, from a rank of 136 in 2014 to a maximum rank of 110 in 2015, and then it has a decreasing trend until 75 in 2017 and 2018, after which it has increased one time to the rank of 57 in 2019, and the other time decreased to the rank of 105 in 2020, and finally it has an increasing trend until the rank of 81 in 2023.
- Intellectual Capital and Innovation sub-index**
 Algeria’s rank has a decreasing evolution from 89 in 2014 from year to year until the minimum rank with the value of 116 in 2017 and 2018, and then it has increased to 73 in 2019, after that it has decreased one time to the rank of 102 in 2020, and finally it has an increasing trend until the rank of 75 in 2022 and 2023.
- Economic Sustainability sub-index**
 Algeria’s rank has no value from 2014 to 2021 since this sub-index has not been included yet, and finally, the rank has decreased from 171 in 2022 to 176 in 2023.
- Governance Efficiency sub-index**
 Algeria’s rank has a decreasing evolution from a maximum of 37 in 2014 until the rank of 103 in 2017 and 2018, and then it has increased to 92 in 2019. After that, it has decreased one time to the rank of 114 in 2020 and another time increased to 113 in 2021. Finally, it has a decreasing trend until the minimum value of 143 in 2023.

Algeria’s Score on the Global Sustainable Competitiveness Index and its Components

By collecting the results of the main variable, which is Algeria’s score on sustainable competitiveness and its components, the following table shows the results obtained.

	Sustainable Competitiveness	Natural capital	Resource Intensity	Social capital	Intellectual capital	Economic Sustainability	Governance
Year	Score	Score	Score	Score	Score	Score	Score
2014	42,1	45,0	33,3	43,4	37,2	0,0	51,6

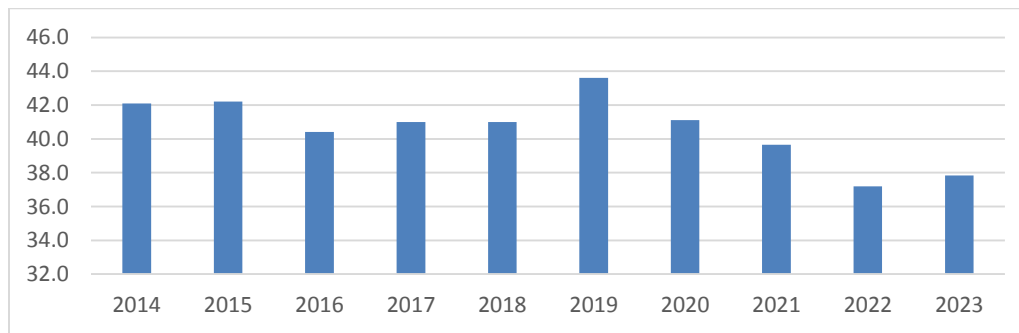
2015	42,2	43,4	34,3	46,0	35,0	0,0	52,1
2016	40,4	39,8	37,4	45,1	35,2	0,0	44,7
2017	41,0	38,8	44,1	42,1	32,9	0,0	46,9
2018	41,0	39,6	44,1	42,1	32,9	0,0	46,9
2019	43,6	35,9	48,7	46,7	38,4	0,0	48,4
2020	41,1	41,0	39,8	41,6	35,7	0,0	47,5
2021	39,6	37,1	29,7	42,1	40,3	0,0	49,0
2022	37,2	33,4	36,4	45,6	40,0	32,2	35,6
2023	37,8	38,9	26,9	43,9	41,5	32,1	43,5

Source: Prepared by the researcher in light of the annual reports of global sustainable competitiveness (2014-2023)

It is noted from the above that Algeria's score of sustainable competitiveness on the Global Sustainable Competitiveness Index every year belongs to the score of its components, which are natural capital, resource intensity, social capital, intellectual capital, economic sustainability and governance.

Evolution of Algeria's score on the Global Sustainable Competitiveness Index

In order to describe Algeria's score on Global Sustainable competitiveness during the period of study from 2014 to 2023, the following chart shows the evolution of the score in terms of sustainable competitiveness.



Source: Prepared by the researcher in light of the results of Excel

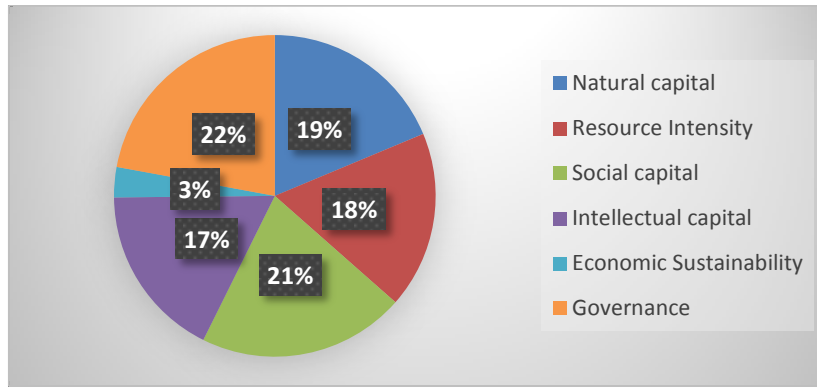
Figure 5

EVOLUTION ALGERIA'S SCORE ON THE GLOBAL SUSTAINABLE COMPETITIVENESS INDEX

Algeria's score of sustainable competitiveness has a little increased from 42.1 in 2014 to 42.2 in 2015, decreased to 40.4 in 2016, and then increased to the maximum until 2019 with a score of 43.6. After that, it has decreased to the minimum of 37.2 in 2022, and it has increased to 37.8 in 2023.

Percentage of Algeria's score in components of sustainable competitiveness

By calculating the mean of each of Algeria's scores in components of sustainable competitiveness during the period of study and calculating the percentage of each one of them, the following figure shows the participation of each one of them in Algeria's general score



Source: Prepared by the researcher in light of the results of Excel

Figure 6

PERCENTAGE OF ALGERIA’S SCORE IN COMPONENTS OF SUSTAINABLE COMPETITIVENESS

By noting that the mean of economic sustainability is calculated only in the two latest years, since it is not introduced until 2022, the highest percentage belongs to governance (22%), the second is for social capital (21%), then the third refers to natural capital (19%), after that there is intellectual capital equal to resource intensity (18%), and finally there is economic sustainability only (3%).

TEST THE HYPOTHESES OF THE STUDY

To test the hypotheses of the study, it is necessary to refer to the recent 2023 world global statistics, especially by showing the maximum, average, and average score values of all countries on the Global Sustainable Competitiveness Index and its sub-indexes, which are collected in the following table.

Country	Sustainable Competitiveness		Natural capital		Resource Intensity		Social capital		Intellectual capital		Economic Sustainability		Governance	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
Max		59,6		62,4		59,6		65,8		75,2		56,5		76,0
Average		43,7		44,0		41,2		43,5		40,5		41,6		51,3
Min		30,1		25,1		18,9		23,8		17,7		27,2		26,2

Source: (<https://solability.com/the-global-sustainable-competitiveness-index/the-index>, 2024)

Experimental evidence of the study hypotheses

The study hypotheses can be tested by comparing Algeria’s evident scores to the world recent values: Max, Average, and Min scores in 2023, as shown in the following table

Global sustainable competitiveness Index Algeria and sub-indexes	Abbreviations of indexes	Mean	Std. Deviation	Std. Error Mean
Global sustainable Competitiveness Index Algeria	GSCI ALG	4,06,000	1,96,695	0.622
Natural capital Index Algeria	NC ALG	3,92,900	3,40,178	1.07574

Ressource Intensity Index Algeria	RI ALG	3,74,700	6,83,245	2.16061
Social capital Index Algeria	SCI ALG	4,38,600	1,88,043	0.59464
Intellectual capital Index Algeria	ICI ALG	3,69,100	3,06,611	0.96959
Economic sustainability Index Algeria	ESI ALG	64,300	13,55,565	4.28667

Source: Prepared by the researcher in light of the results of SPSS

Country	Sustainable Competitiveness		Natural capital		Resource Intensity		Social capital		Intellectual capital		Economic Sustainability		Governance	
	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score	Rank	Score
World Max		59,6		62,4		59,6		65,8		75,2		56,5		76,0
World Average		43,7		44,0		41,2		43,5		40,5		41,6		51,3
World Min		30,1		25,1		18,9		23,8		17,7		27,2		26,2
Algeria's Score mean		40,6		39,3		37,5		43,9		36,9		6,4		46,6
Algeria's Score mean of economic sustainability (2022-2023)												32.15		

Source: Prepared by the researcher in light of the results of tables 3 and 4

Based on the above, the hypotheses can be tested with the following:

1-Test of the Main Hypothesis`

Algeria's economy has a statistically significant middle score at a significant level ($\alpha \leq 0.05$) on the global sustainable competitiveness index.

Index	T	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
GSCI ALG	65,273	,000	40, 60,000	39.1929	42.0071

Source: Prepared by the researcher in light of the results of SPSS

The comparison between Algeria's score of 40.6 and world middle values shows that Algeria's score of sustainable competitiveness is near the average of 43.7.

Therefore, the main hypothesis is true.

2-Test of the First Sub-Hypotheses

There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the

Natural Capital sub-index.

Index	t	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
NC ALG	36,524	,000	39, 29,000	36.8565	41.7235

Source: Prepared by the researcher in light of the results of SPSS

The comparison between Algeria's score of 39.3 and world middle values shows that Algeria's score of natural capital is near the average of 44.0.

Therefore, the first sub-hypothesis is true.

3-Test of the Second Sub-Hypothesis

There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the resource efficiency and intensity sub-index.

Index	t	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
RI ALG	17,342	,000	37,47,000	32.5824	42.3576

Source: Prepared by the researcher in light of the results of SPSS

The comparison between Algeria's score of 37.5 and world middle values shows that Algeria's score of natural capital is near the average of 41.2.

Therefore, the second sub-hypothesis is true.

4-Test of the Third Sub-Hypothesis

There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the Social Capital sub-index.

Index	t	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
SCI ALG	73,759	,000	43,86,000	42.5148	45.2052

Source: Prepared by the researcher in light of the results of SPSS

The comparison between Algeria's score of 43.9 and world middle values shows that Algeria's score of social capital is near the average of 43.5.

Therefore, the third sub-hypothesis is true.

5-Test of the Fourth Sub-Hypothesis

There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on intellectual capital and innovation sub-index

Table 10					
Test of the Fourth Sub-Hypothesis					
Index	t	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
ICI ALG	38,068	,000	36, 91,000	34.7166	39.1034

Source: Prepared by the Researcher in Light of the Results of SPSS

The comparison between Algeria's score of 36.9 and world middle values shows that Algeria's score on intellectual capital and innovation is near the average of 40.5.

Therefore, the fourth sub-hypothesis is true.

6-Test of the Fifth Sub-Hypothesis

There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on economic sustainability sub-index

Table 11					
Test of the Fifth Sub-Hypothesis					
Index	t	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
ESI ALG	1,500	,168	6, 43,000	-3.2671	16.1271

Source: Prepared by the researcher in light of the results of SPSS

There are empty values in this sub-index from 2014 to 2021. The comparison between Algeria's score during the period of study (6.4) and world middle values shows that Algeria's score on economic sustainability is near the low value (27.2) of other values.

There are values for this sub-index from 2022 to 2023. The comparison between Algeria's score during the period of study (32.15) and world middle values shows that Algeria's score on economic sustainability is still near the low value (27.2).

Therefore, the second sub-hypothesis is rejected.

And we accept the null hypothesis, which is:

(H0): There is no statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on economic sustainability sub-index.

7-Test of the Sixth Sub-Hypothesis

There is a statistically significant middle score at a significant level ($\alpha \leq 0.05$) for Algeria's economy on the governance and efficiency sub-index

Table 12					
Test of the Sixth Sub-Hypothesis					
Index	t	Sig. (2-tailed)	Mean	95% Confidence Interval of the Difference	
			Difference	Lower	Upper
GI ALG	31,316	,000	46, 62,000	39.1929	42.0071

Source: Prepared by the researcher in light of the results of SPSS

The comparison between Algeria's score of 46.6 and world middle values shows that Algeria's score of governance efficiency is near the average value of 51.3.

Therefore, the sixth sub-hypothesis is true

CONCLUSION

Sustainable competitiveness of a country is a complex concept that includes dimensions of sustainable development in competitiveness, and in this study, this concept concerns the national level, specifically Algeria, by collecting the statistics of its rank and score during the period of study on the Global Sustainable Competitiveness Index, which started in 2012 and changed relatively in 2014, and its sub-indexes where the last one, which is governance, was included in 2022.

The results of the study could be summarized as follows:

- Sustainable competitiveness is a result of linking competitiveness with sustainable development.
- The Global Sustainable Index is the appropriate framework to know the rank and score of each country in terms of sustainable competitiveness at the nation's level.
- Algeria's economy had a changing rank on the global sustainable competitiveness index and its sub-indexes during the period of study.
- Natural capital participates (19%) in the sustainable competitiveness of the Algerian economy during the period of study.
- Resource efficiency and intensity participates (18%) in the sustainable competitiveness of Algerian economy during the period of study.
- Social capital participated (21%) in the sustainable competitiveness of the Algerian economy during the period of study.
- Intellectual capital and innovation participates (17%) in the sustainable competitiveness of the Algerian economy during the period of study.
- Economic sustainability doesn't contribute to the sustainable competitiveness of the Algerian economy during the period of study, and (6%) belongs to other factors.
- Governance efficiency participates (22%) in the sustainable competitiveness of the Algerian economy during the period of study.
- Algeria's economy has a middle score on the global sustainable competitiveness index.
- There is a middle score for Algeria's economy on the natural capital sub-index.
- There is a middle score for Algeria's economy on the resource efficiency and intensity sub-index.
- There is a middle score for Algeria's economy on the social capital sub-index.
- There is a middle score for Algeria's economy on the intellectual capital and innovation sub-index.
- There is a low score for Algeria's economy on the economic sustainability sub-index, and that can be explained by the extraction and use of fuels or fossil energy.
- There is a middle score for Algeria's economy on the governance efficiency sub-index.

SUGGESTIONS AND RECOMMENDATIONS

This study has led to some conclusions and recommendations that can be useful:

- It is imperative to improve Algerian performance in terms of competitiveness in general, and sustainable competitiveness especially by seeking to enhance the global score and rank from year to year.
- It is important to endorse the Algerian performance in terms of the Global Sustainable Competitiveness five sub-indexes where the score is middle by trying to improve the components of each one of them, which are mentioned in the global reports.
- It is very important to activate the Algerian score in the sub-index of economic sustainability, where the score is low and there is no statistically significance, by enhancing the business environment, female participation, financial markets, and economic indicators. And link all of them to sustainable competitiveness.
- The Algerian government should look after clean energy and water, good materials, artificial intelligence and infrastructure.
- The Algerian government should take care of health, peace, equal opportunities, fertility, biodiversity, and sustainable resources.
- The Algerian government with citizens, and all partners should seek to enhance technology, education, and research and development strategies.
- The Algerian government should make an interior assessment of its performance in terms of sustainable competitiveness and its components.

REFERENCES

- Andreoni, V., & Miola, A. (2016). [Competitiveness and sustainable development goals](#). Luxembourg: Publications Office of the European Union, 88.
- BEÑAT, B.-O., BLANKE, J., CAMPANELLA, E., CROTTI, R., DRZENIEK-HANOUS, M., & SERIN, C. (2013-2014). Assessing the Sustainable Competitiveness of Nations. world Economic Forum .
- Cheba, K., Bąk, I., & Szopik-Depczyńska, K. (2020). [Sustainable competitiveness as a new economic category—definition and measurement assessment](#). *Technological and Economic Development of Economy*, 26(6), 1399-1421.
- Cheba, K., Bąk, I., & Szopik-Depczyńska, K. (2020). [Sustainable competitiveness as a new economic category—definition and measurement assessment](#). *Technological and Economic Development of Economy*, 26(6), 1399-1421.
- Popescu, G. H., Sima, V., Nica, E., & Gheorghe, I. G. (2017). [Measuring sustainable competitiveness in contemporary economies—Insights from European economy](#). *Sustainability*, 9(7), 1230.
- Rajnoha, R., & Lesnikova, P. (2022). [Sustainable competitiveness: How does global competitiveness index relate to economic performance accompanied by the sustainable development?](#). *Journal of Competitiveness*.
- SolAbility. (2023). the Sustainable Competitiveness Index.
- Urbaniec, M. (2016). [Sustainable competitiveness. Opportunities and challenges for Poland's economy](#). *Ekonomia i Środowisko*, (4 [59]).
- Urbaniec, M. (2016). [Sustainable competitiveness. Opportunities and challenges for Poland's economy](#). *Ekonomia i Środowisko*, (4 [59]).
- Zargartalebi, M. (2021). [Sustainability as a competitiveness factor: a quantitative cross-country analysis](#). *Economics and Environment*, 76(1), 21-21.

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