The dimentions of sustainable performance in hamma bouziane cement institution of constantine (Empirical study)

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Abstract:

This study aims knowledge of the extent of adoption of Cement Corporation HAMMA BOUZIANE on dimensions and indicators of sustainable performance which are: the economic dimension, the social dimension and the environmental dimension, to reach the the study results, surveys were distributed to a group of workers of the cement corporation, according to a random sample. After unloading data in SPSS system and processing appropriate statistical ways, we have reached the following conclusions: good attention and concentration of Cement Corporation HAMMA BOUZIANE on the sustainable performance in different dimentions: the rate of interest in the economic dimension is: 85.82%, while the rate of interest of the social dimension is: 77.74% and environmental dimension rate of interest is: 83.2%.

Keywords : sustainable performance, environment.

الملخص:

تهدف هذه الدراسة المعرفة مدى تبني مؤسسة الاسمنت حامة بوزيان لأبعاد ومؤشرات الأداء المستدام والتي هي: البعد الاقتصادي، البعد الاجتماعي والبعد البيئي، للوصول الى النتائج تم توزيع مجموعة من الاستبيانات على عمال المؤسسة وفق عينة عشوائية، بعد تفريغ البيانات في نظام spss ومعالجتها بالطرق الإحصائية المناسبة توصلنا الى النتائج التالية: اهتمام وتركيز مؤسسة الاسمنت حامة بوزيان بالأداء المستدام بنسب مختلفة: نسبة الاهتمام بالبعد الاقتصادي85.82%، اما نسبة التركيز على البعد الاجتماعي 77.74% والبعد البيئي فنسبة التركيز عليه هي: 83.2%.

الكلمات المفتاحية: الأداء المستدام، البيئة.

Introduction:

The beginning of 21st century ushered in a new era in corporate strategy and management towards sustainable thinking[1]. The key quest that business has now to embrace, is: how can industrial development be undertaken without damaging the environment or undermining the development opportunities of local communities – across generations as well as across geographies; and, can the benefits be distributed amongst stakeholders equitably while promoting economic growth?[2] The sustained performance focus of attention in any organization on growth and development and achieve and maintain good performance using a minimum of resources[3].

With the growing the interest in Algerian institutions on the concept of sustainable development, we highlight on cement institution and asking the following question: ***Does cement institution: HAMMA BOUZIANE focusing on sustainable performance****?*

This question is divided into the following sub-questions:

1. Does cement institution: HAMMA BOUZIANE focusing on the economic dimension?
2. Does cement institution: HAMMA BOUZIANE focusing on the social dimension?
3. Does cement institution: HAMMA BOUZIANE focusing on the environmental dimension?

We suggested the following hypotheses:

1. The cement institution: HAMMA BOUZIANE focusing on the economic dimension.
2. The cement institution: HAMMA BOUZIANE focusing on the social dimension.
3. The cement institution: HAMMA BOUZIANE focusing on the environmental dimension.

FIRST, THE THEORETICAL PART OF THE STUDY

1. Sustainability – the link between economic, social and environmental performances:

The term sustainable development or sustainability first appeared when the objective of public order recorded advances for a continual economic growth.

The UN report, known as Brundtland Report defined the sustainable development as ways of progress which should satisfy the needs and aspirations of the present generation without compromising the possibility for the future generations to satisfy their needs[4]. developed the concept of sustainable operations management, which is defined as integrating "the profit and efficiency orientation of traditional operations management with broader considerations of the company's internal and external stakeholders and its environmental impact[5].

What we understand by performance is different depending on the environment in which it is analyzed[6], Simon and (**1976**) Jensen & Meckling: "The concept is of performance is based upon the idea that an organization is a voluntary association of productive assets, including human, physical, and capital resources, for the purpose of achieving a shared purpose[7]. on the whole, the performance is, effectively linking between the productivity of resources, human and financial resources and equipment, in order to reach the appropriate outputs[8].

The concept of sustainable performance is promoted as a communication instrument between the main factors involved in the general social, economic and environmental balance on different complexity levels of the informational fields. As the need for sustainable practices in the business becomes clearer, sustainability reporting offers real values to those who have the responsibility of evaluating the current financial position of the companies and anticipating their future performances[9].

2. Dimensions of Sustainable performance

As environmental strategies of organizations are increasingly broadened to encompass sustainability, not only the environmental but also social and economic performance comes up for evaluation[10]. Sustainable performance is equal with the reunion of the three dimensions of performance: the economic, the social and the environmental[11]:

2.1.The environmental performance refers to the impact of the organizations over the natural resources, including the ecosystems, earth, air and water.

2.2. The social performance can be measured through analyzing the impact of the organizations on the stakeholders on a local, national and global level. Social performance indicators can influence the intangible assets of the organization, such as human capital and reputation .

The activity of most of the organizations that present social and environmental reporting is certified by the environment management standards, such ISO 14001

2.3.The economic performance contains all the aspects of the economic interactions of the organization, including the traditional indicators used in financial accounting, but also intangible elements which do not usually show up in financial situations.

Economic performance in sustainability reports is frequently confused with the financial performance in accounting reports. The financial performance measures a company's profitability and future prosperity. On the other hand, economic performance in sustainability reports measures a company's influences on its stakeholders' economic circumstances and on the economic systems at local, national, and/or international levels[12].

3. The aim of sustainable performance:it aims to**:**[13]

- to promote continuous improvement within sustainability performance of the enterprises.

- to control over its impacts on the environment and society by systematically identifying priorities for action, planning strategies to address those priorities, monitoring strategies to ensure implementation and determine any areas for improvement.

- includes the policies, programmes and practices designed to integrate social, environmental, and economic principles into existing business processes, including any interactions with stakeholders.

4. Indicators of sustainable performance:

indicators have been defined in a number of different ways: the Dictionary of Environment and Sustainable Development (Gilpin, 1996) defines an indicator as: a substance or organism used as a measure of air or water quality, or biological or ecological well-being[14]. Sustainable performance indicators divided to the qualitative indicators and quantitative indicators.

4.1. the qualitative indicators:

Table01: Examples of qualitative sustainability performance indicators

Indicator	High sustainability performance, points	Medium sustainability performance, points	Low sustainability performance, points
Economic indicators			
Use of preventive measures/ innovations) to reduce costs	Identification and implementation of preventive measures/ innovations are accomplished systematically	Obvious preventive measures/ innovations implemented on regular basis	Preventive measures/ innovations are not used
Economic input to local infrastructure development	Enterprise on regular basis financially contributes to development of local infrastructure	Enterprise participates in a limited number of local infrastructure development projects	Enterprise is not involved in development of local infrastructure
Environmental indicators			
Reduction in energy and water consumption	Everyday search for options to reduce energy and water consumption, technical and organizational energy and water	Analysis of options for reduction in energy and water consumption use is carried out periodically, good housekeeping measures are used	Energy and water saving measures are not used or only obvious saving measures used

	saving measures are used		
Treatment of recyclable wast	Waste is treated on thesite of enterprise	Part of generated waste is treated in enterprise	Generated waste is transferred to other companies
Improvement of product characteristics	Improvement of product characteristics is part of the enterprise's policy	Improvement of product characteristics is done in specific cases	Improvement of product characteristics is not considered
Social indicators			
Involvement of employees in decisionmaking	Employees are promoted to make suggestions	Employee opinions are considered	Employee opinions are not considered
Training of employees	Active search for employee training options and support	Employees have opportunities to participate in training programmes	Employee participation in training activities is not desirable
Communication indicators			
Publication of sustainability report	Annual sustainability report published	Annual environmental report published	Report not published
Information to consumers concerning an environmentally friendlier way to use products and to dispose of waste properly	Clear instructions concerning product and product waste given to consumers	Recommendations concerning proper waste disposal made to consumers	No environmental information is provided to consumers

Source: Jurgis K. Staniškis, Valdas Arbačiauskas, Sustainability Performance Indicators for Industrial Enterprise Management. *Environmental Research, Engineering and Management, 2009. No. 2(48), P. 42-50 p:46.*

4.2. quantitative indicators

Table 02:Examples of quantitative sustainability performance indicators

Indicator	Calculation method	Measurement units
Economic indicators		
Investments in research and development	Investments in research and development, LTL	%
	Total sales, LTL	
Investments in preventive environmental measures	Investments in preventive measures, LTL	%
	total environmental investments, LTL	
Environmental indicators		
Costs of air emission treatment	costs of air emission treatment, LTL	%
	total production costs, LTL	
Energy consumption	total energy consumption, kWh	kWh/product unit or ton

	Production, units or tons. or tons	
Use of recycled material	use of recycled material, t total	%
	material use, t	
Hazardous waste amount reduction due to material substitution	Absolute number	t
Social indicators		
Number of working days lost due to accidents	Absolute number	units
Percentage of employees that participated in training programmes, related to sustainable development	Number of employees that participated in training programmes	%
	All employees that have to be trained	

Source: Jurgis K. Staniškis, Valdas Arbačiauskas, Sustainability Performance Indicators for Industrial Enterprise Management. *Environmental Research, Engineering and Management, 2009. No. 2(48), P. 42-50 p:47*

SECOND: APPLIED PART OF THE STUDY

1. Identification cement institution: HAMMA BOUZIANE:

Cement institution: HAMMA BOUZIANE SCHB is a shareholding company with a social capital of: 17.510.000.000 AD, with production capacity of: 1,000,000 tons of cement annually.

Enterprise raw materials used in the production process is extracted from two mines: mine material lime Calcaire an area of 129 hectares, and the last of the material clay Argile an area of 138 hectares, and is supplied with electric power necessary institution through two lines electricians capacity of 60 kilowatts, and consumes a large amount of gas that It holds, through a direct gas pipeline[15].

2. sample of the study:

on the properties of the sample in the table (03).

Table (03): the sample description according to personal factors.

Personal and functional variables		Repetition
Gender	Mal	25
	Female	05
Age	Less than 25 years	10
	From 25 to 40 years	15
	Greater than 40 years	05
Degree	secondary	17
	Bachelor or Engineer	12
	Postgraduate	01
Years of Experience	From 1 to 5 years	07
	From 6 to 10 years	12
	From 11 to 15 years	06
	Old than16 years	05

Source: depending on the statistical results of spss

Men category is overcome on study sample the reason return to the difficulty of working in the cement, as youth category is the largest for the same reason, either the academic level is based on the secondary, and the experience is based in the medium Experience

3. tool for the study: The study survey consisted of personal feature of the transponder, such as: sex, educational qualification, years of experience, and,the sustainable performance dimensions consists of (15) indicators are divided into three key dimensions:

- economic dimension.
- social dimension.
- environmental dimension.

4. Dimensions and indicators analysis:

To comment on the relative importance of indicators and dimensions we have identified five levels as follows:

- Very Low: 0 to less than 20%
- Low: 20 to less than 40%
- Moderate: 40 to less than 60%
- High: 60 to less than 80%
- Very high: from 80 to 100%

4.1. Economic dimension analysis:

Table shows (04) replies sample about economic dimension, and these answers are in order of importance according to the mean and standard deviation.

Table (04): analysis of the economic dimension

Paragraphs		Arithmetic mean	Standard deviation	Relative importance
1	Quality products and services improved in the organization.	4,23	0.480	%84.6
2	Increase the financial profitability of the institution	4,40	0.672	%88
3	Improve the competitive ability of the institution.	4,25	0.670	%85
economic dimension		4,291	**0.454**	**85.8%**

Source: depending on the statistical results of spss

It is clear from the table (03) that indicator: "increase the financial profitability of the institution," reached relative importance of 88%, degree of interest is very high, and the first in the standings, for the rest of indicators of this dimension, which indicates that there is a clear improvement in profitability in HAMMA BOUZIAN enterprise.

The indicator: "improve the competitive ability of the enterprise," the degree of attention to this indicator by the study sample was too high, and the relative interest is 85%, came in second place in terms of ranking, indicating a more competitivity in their markets.

The indicator: "improve the quality of products and services in the enterprise," came in third place in the standings, and have high degree of interest, with an estimated relative interest has 84.6%, where there is no difference of importance between the relative attention to this and the preceding indicator, which indicates that the cement Corporation has been studied improvements in the quality of their products and services.

The degree of attention for the economic dimension is very high, the importance is 85.82%, which indicates that the Cement Corporation: HAMMA BOUZIANE has achieved high improvements with regard to ensuring continuity.

4.2. Social dimension analysis:

Table shows (05) replies sample about social dimension, and these answers are in order of importance according to the mean and standard deviation.

Table (05): analysis of the social dimension

Paragraphs		Arithmetic mean	Standard deviation	Relative importance
1	Increase the commitment of employees,	4,23	0.577	%84.6
2	Work characterized by positive.	3,73	0.960	%74.6
3	Performance excellence of workers,	3,70	0.823	%74
4	The development of competence and experience of the human element in the organization.	3,90	0.810	%78
social dimension		3,887	0.610	**%77.7**

Source: depending on the statistical results of spss

It is clear from the table (05) that indicator: "Increasing the commitment of workers," reached relative importance of 84.6%, degree of interest is very high, and the first in the standings, for the rest of the indicators in this dimension, indicating Satisfaction of the human element in the organization.

The indicator: "the development of competence and experience of the human element in the organization," came in second place in terms of ranking, high degree of interest, and the relative interest of 78%, as the human race evolved when adopting efficient systems for quality and environmental management.

The indicator: " performance excellence of workers," came in third place in the standings, and the high degree of attention, as estimated by the relative interest of 74.6%, and this shows that the organization has studied working atmosphere prevails cooperation.

The indicator: "characterize the performance of employees", ranked fourth in the order of importance, with a high degree importance, relative interest of 74%. This is the last indicator of the terms of order, because in addition to the concentration of human element also rely dramatically on modern technology of production.

The degree of attention of social dimension in the enterprise is high, the importance is 77.74%, indicating that the cement corporation: hamma Bouziane give management the importance of a good human element.

4.3. Environmental dimension analysis:

Table shows (04) replies sample about environmental dimension, and these answers are in order of importance, according to the mean and standard deviation.

Table (06): environmental dimension analysis

Paragraphs		Arithmetic mean	Standard deviation	Relative importance
4	Enterprise compliance with laws and regulations improved.	4,30	0.608	%86
5	Increase the institution's commitment to social responsibility.	3,90	0.744	%78
6	Protect and preserve the environment.	**4.30**	0.671	%86
environmental dimension		4,162	0.488	**%83.2**

Source: depending on the statistical results of spss

The indicator: "improve the institution's commitment to laws and regulations," is the first in the standings, interest is very high, relative interest of 86%, was due to the institution attention to building good relations with its surroundings, from which the legal and legislative bodies.

The indicator: "protection of the environment and conservation, and adopt the concept of eco-friendly institution," also is the first in the standings, and the high degree of interest, with relative interest of 86%, but the standard deviation is greater than the preceding indicator; therefore was then in the order, the arrival of the institution to adopt the concept of enterprise-friendly environment due to its focus on the environmental dimension in the routers.

And ranked sixth paragraph: "to increase the institution's commitment to social responsibility," the relative importance of 78%, and a high degree of importance, indicating that the cement institution under study, paying adequate attention to their role in society, for example: the provision of jobs.

The degree of attention on environmental dimension is very high, the importance of 83.2%, which indicates that the cement Foundation: HAMMA BOUZIANE achieve sufficient commitment towards the environment.

5. Hypotheses testing:

5.1. Test of the first hypothesis: cement institution: HAMMA BOUZIANE focusing on the economic dimension.

Table (07): test of the first hypothesis

The dimension	Arithmetic mean	Standard deviation	T-value	Level of significance
economic dimension	4.291	0.454	17.99	0.000

Source: depending on the statistical results of spss

Note from the table (07) that the level of significance of economic dimension is 0.000, which is less than $\alpha = 0.05$, meaning that there are statistically significant differences at the level of significance 0.05, this is proof that cement institution: HAMMA BOUZIANE concerned with the economic dimension.

5.2. Test of the second hypothesis: The cement institution: HAMMA BOUZIANE focusing on the social dimension.

Table (08): test of the second hypothesis

The dimension	Arithmetic mean	Standard deviation	T-value	significance level
social dimension	3.887	0.609	9.20	0.000

Source: depending on the statistical results of spss

Note from the table (08) that the level of significance of social dimension is 0.000, which is less than $\alpha = 0.05$, meaning that there are statistically significant differences at the level of significance 0.05, this is proof that cement institution: HAMMA BOUZIANE concerned with the social dimension.

5.3. Test of the third hypothesis: The cement institution: HAMMA BOUZIANE focusing on the environmental dimension.

Table (09): test of the third hypothesis

The dimension	Arithmetic mean	Standard deviation	T-value	significance level
environmental dimension	4.162	0.488	15.05	0.000

Source: depending on the statistical results of spss

Note from the table (08) that the level of significance of environmental dimension is 0.000, which is less than $\alpha = 0.05$, meaning that there are statistically significant differences at the level of significance 0.05, this is proof that cement institution: HAMMA BOUZIANE concerned with the environmental dimension.

Results:

Through the study we have reached the following conclusions:

- The degree of attention for the economic dimension is very high: is 85.82%, which indicates that the Cement Corporation: HAMMA BOUZIANE has achieved high improvements with regard to ensuring continuity.
- The degree of attention of social dimension in the enterprise is high : 77.74%, indicating that the cement corporation: hamma Bouziane give importance of the human element.
- The degree of attention on environmental dimension is very high: 83.2%, which indicates that the cement corporation: HAMMA BOUZIANE achieve sufficient commitment towards the environment.
- Cement institution: HAMMA BOUZIANE concerned on the economic dimension. Because the level of significance of economic dimension is 0.000, which is less than $\alpha = 0.05$.
- Cement institution: HAMMA BOUZIANE concerned on the social dimension. Because the level of significance of social dimension is 0.000, which is less than $\alpha = 0.05$.
- Cement institution: HAMMA BOUZIANE concerned on the environmental dimension. Because the level of significance of environmental dimension is 0.000, which is less than $\alpha = 0.05$.

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