Effects of Corporate Sustainability Practices on Performance: the Case of the MENA Region

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Abstract

Purpose – Sustainability focuses on the effects of present actions on societies, environments, and ecosystems of the future. The purpose of this study is to discover the extent to which MENA (the Middle East and North Africa) region corporations pursue various aspects of corporate sustainability. This paper studies corporate sustainability practices, examining their association with performance in the MENA region.

Design/methodology/approach – A thorough literature review was conducted. The findings indicate six key categories/constructs that can be used as indicators for measuring corporate sustainability and performance. Based on the literature review, a theoretical framework was constructed and tested. Data for this quantitative and explanatory study was obtained through a self-administered survey distributed to senior managers at corporations in the MENA region.

Findings – The study's findings show that corporations operating in the MENA region are underachieving in all aspects of sustainability except for energy management. Larger-sized companies tend to be more involved in corporate sustainability practices in the categories of internal and external education, external health, and resources and energy management. This study finds the existence of a strong positive relationship between each sustainability category and each performance category.

Originality/value – Most studies on sustainability focus on North America, Europe, and East Asia, not the MENA region. The findings will raise awareness among MENA-region corporations of the importance of increasing engagement in presently deficient sustainability practices, which will boost their overall performance.

Introduction

Nowadays, it is very common to peruse a corporation's website or official reports and find references to "sustainability" or "sustainable development." Some companies tend to hire employees to perform specific sustainability roles. Various business schools also seek to employ professors in Corporate Sustainability (Montiel and Delgado-Ceballos, 2014). Parallel to this, scholars and researchers are increasingly interested in corporate sustainability subjects within their academic work.

As a mounting number of corporations are willingly incorporating environmental and social issues into their business strategies, a few matters are arising. One may wonder how the governance structure of a company that espouses environmental and social policies differs from a company that does not consider such policies. One may also wonder if a company that adopts the sustainability concept considers different time horizons in its decision making. Additionally, it can be questioned how the measurement, reporting systems, and performance of such a firm differ from those of other companies.

The United Nations' (UN) 2016 Global Sustainable Development Report indicates that countries and corporations in the US, Germany, United Kingdom, France, and others have been incorporating sustainability into their strategic planning since the late 20th century. However, MENA countries and their corporations have fallen far behind in addressing sustainability as part of their strategic plans.

This study elucidates the impacts of integrating social and environmental issues into a company's strategy on the overall performance of the organization. The research investigates the outcome of adopting sustainability, at dissimilar levels, on the different organizational processes.

The countries considered in this research are some of the MENA nations where the concept of sustainability is still relatively new compared to the developed countries.

Based on the preceding discussion, this study aims to examine to what extent MENA region corporations practice corporate sustainability, the differences in applying sustainability practices according to the characteristics of the company (size, change in sales, debt to equity ratio, etc.), and the relationship between corporate sustainability practices and performance.

To assess the extent of corporate sustainability practiced by MENA region corporations, several hypotheses were formulated and tested by applying suitable statistical techniques to the collected data.

Literature Review

Several management theories support the stance of neoclassical economics that every corporation's objective is the maximization of profit (Dagman, A. et al., 2015). However, there is considerable disparity in the ways that companies actually pursue profit maximization (Eccles and Ioannis, 2012). Different enterprises place unequal emphasis on the long-term versus the short-term minimization; corporations "care more or less" about the external effects of their operations on other stakeholders and the environment (Brochet *et al.*, 2011; Paine, 2004); allocate diverse levels of attention and importance to the ethical grounds of their choices (Paine, 2004); and place relatively different importance on shareholders compared to other stakeholders (Ecccles and Krzus, 2010).

According to Epstein (2009), sustainability has been defined as engagement in corporate social responsibility and citizenship. The concept of sustainability first surfaced in the early 1970s but spread globally in 1987 with the Brundtland Report, in which sustainable development was defined as "the development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Fricker, 1998).

If one listens to speeches of politicians, policy-makers, economists, or scientists, the word "sustainable" is found with notable repetition (Bell and Morse, 2013). Some scholars have boldly

ventured that every person agrees that sustainability is critical for competitiveness and economic development (Nuta *et al*., 2015; Kumar and Singh, 2013; Allen and Hoekstra, 1992). A few, however, have long questioned the reason behind this subject's popularity and significance (Bawden, 1997).

Nowadays, all kinds of pollution, human and workers' rights, child labor, political disruption, and global climate change are some examples of factors that corporate executives ought to consider daily. According to (Epstein, 2009), these issues have become an essential part of shareholder value creation and the management of an enterprise. The matter of whether a corporation should be concerned with its social responsibility and the effect of its activities on the environment and stakeholders is no longer a subject of discussion, as this topic has moved from "whether" to "how" to be sustainable in managers' daily decisions, under competing pressure to increase short-term earnings (Garcia, S. *et al*., 2016). Managers are expected to concurrently improve both corporate financial and social performance. Evolving sustainability plans is often an imperative task for senior executives, but the larger challenge lies in the implementation of sustainable practices (Epstein, 2009).

Identifying the important features of sustainable development allows the provision of good models of the management and evaluation thereof. Therefore, when one analyzes the management of sustainable development, the most important question that arises is: "what does sustainability really mean?" (Ciegis *et al.,* 2009). Even though the essence of sustainable development is clear enough, its precise definition and interpretation are not universally agreed: in different subjects, sustainable development is defined differently.

In economics, sustainability is the development guaranteeing that per capita income of future generations is not less than that of the present generation. In sociology, it means preserving the community and maintaining social relationships, while, in ecology, it is the development that conserves the diversity of species and ecological processes (Ciegis *et al.,* 2008).

According to Eccles and Ionnis (2012), firms that place high importance on sustainability are more likely to hire managers with environmental and social perception performance metrics,

rather than solely financial metrics, and who have a long-term vision for the company. These companies are more willing to sacrifice some short-term results. Moreover, a high sustainability firm is more likely to attract investors who are dedicated rather than transient.

According to the 2015 World Bank Group's report on sustainability investment, which measures total sustainability-related assets under management (AUM) as part of GDP (International Finance Corporation, 2015), countries such as EU, USA, Brazil, and China have been increasing their percentage of total AUM since the early 21st century (Morioka, S. *et al.*, 2016). For example, the current percentages of total AUM in the EU, USA, and Brazil are 16.97%, 12.00%, and 11.20% respectively (International Finance Corporation, 2015). This World Bank report also indicates that while sustainability investment in some countries is increasing, investment as part of GDP in the MENA region is 0.67% and decreasing. Sustainability investment in the MENA region requires governance reform: to support sustainability investment, MENA region governments need to create new and innovative initiatives (incentives) to push capital market stockholders to integrate social, environmental, and governance factors into capital allocation (Upham, P.J; Mills, J,N., 2005).

Investors who desire to hold a specific stock for a long period are attracted to companies that are optimizing financial performance over a longer period of time. A study by Kiron *et al.* (2012) proposes that the movement of sustainability is nearing a tipping point, at which a considerably large proportion of corporations not only see the need for sustainable business practices but are also generating financial benefits from these activities. The development of green scorecards, sustainability rankings, and corporate social responsibility metrics during the last decade has provoked many firms to begin openly measuring and tracking their outcomes (Kiron *et al.,* 2012). Fricker (1998) indicates that even though the external dimensions of sustainability are especially important, the internal manifestations are usually neglected. Slaper and Hall (2015) affirm that measuring the degree to which a company is being both externally and internally sustainable can be difficult.

The triple bottom line is an accounting framework that includes three facets of performance: financial, social, and environmental. This diverges from the traditional reporting frameworks as

it embraces social and ecological measures to which it can be difficult and complex to assign suitable means of measurement. Profits are measured in dollars whereas social capital and environmental health are not. Finding one common unit of measurement remains a significant challenge (Slaper & Hall, 2015). According to Hong *et al.* (2012) and El-Khalil and Kassar (2016), drivers for sustainability practices are linked to outcomes (performance measures) through corporate strategy and/or operational practices, as illustrated in Figure 1.

Figure 1. Linking Sustainability Drivers to Outcomes
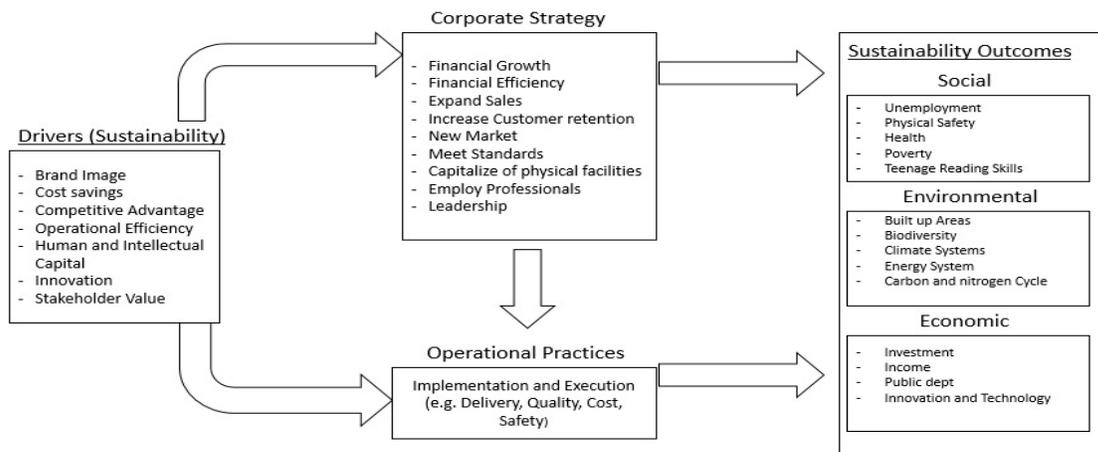
Based on the literature review, six main categories for measuring sustainability were determined: education, health, compensation, employee-wellbeing, resource management, and energy management. In addition, four main performance outputs were utilized: productivity, efficiency, quality, and employee wellbeing. The authors presented in Table I have indicated a strong positive association between sustainability practices and performance measures. The literature review identified an overwhelming amount of research (conceptual, case study, and empirical) conducted in different regions, but very few had focused on the MENA region, as also presented in Table I. The UN's (2016) report on sustainability indicates a lack of attention upon issues related to sustainability theory or practices in the MENA region by governments, intellectuals, and organizations.

Table I. Sustainability literature identifying measures, regions and output performance

Author	Year	Purpose with respect to Sustainability	Sustainability is measured in terms of	Region	Output Performance
Nunes, B. and Bennett, D.	2010	Investigating green operations initiatives with in automotive industry	Resource, Employee well being, Health, Education	South East Asia, USA, and Europe	Quality, Efficiency, Productivity
Bjorklund, M.	1999	Benchmarking Tools to improve Corporate social responsibility-Literature review	Education, Health, Compensation, Employee well being, Resource, Energy	Europe, USA, and South East Asia	Productivity, Efficiency, Quality, Employee Commitment, Moral, Delivery
Singh, M., et al.	2011	Benchmarking framework that encompasses criteria of sustainable water supply	Resource, Energy, compensation	South East Asia	Productivity, Quality, Delivery
Lau, K. H.	2011	Developing agree logistics index to measure performance	Resources, Energy, compensation	South East Asia	productivity, Employee performance
Green, D. and McCann, J.	2011	Building a new leadership model for green economy	Energy, Leadership, Resource, social values	USA	Efficiency, Productivity, Cost, Employee Performance
Tingey-Holyoak, J., et al.	2011	Explore policy issues related to safety for farm dam	Energy, leadership, policy, resource	Australia	Efficiency, productivity, safety, government
Presley, A. and Meade, L.	2010	Present a methodology and framework for organizations incorporating sustainability measures	Energy, Resource, Health, Education, Employee well being	USA	Efficiency, productivity, Quality, Employee and corporate commitment
Schneider, J., et al	2010	Benchmarking the evolution of sustainability in pharmaceutical sector	Energy, Resource, Health, Employee	USA	Efficiency, productivity, Quality, Corporate policy
Hong, P., et al.	2012	A review for research perspectives (Literature benchmarking/ review)	Compensation, Resource, Energy	Europe, North and South America, and	Efficiency, Productivity
Hong, P., et al.	2012	Review of practices Utilized by manufacturing firms	Compensation, Resource, Energy, Employee well being,	USA	Quality, Efficiency, Productivity, Employee Commitment
Singh, H. and Kumar, R.	2013	Methodology for measuring the utilization manufacturing technology	Resources, Energy, compensation, employee well being, Health, Education	South East Asia	Cost, Productivity, Efficiency, Quality, Employee Commitment, Delivery
Schrettle, S., et al.	2014	Explaining organizational sustainability and its impact on performance	Energy, Resource, Health, Education	Europe	Efficiency, Quality, Productivity, Employee Moral
Akhtar, P., et al.	2016	Data-driven and Adaptive leadership contribution to sustainability	Education, Leadership commitment, Resource	Emerging Market (Brazil, China, Russia, and India)	Productivity, Quality, Cost
Gualandris, J., et al.	2015	Sustainability Evolution and verification in Supply Chain-Literature review	Education, Health, Compensation, Employee well being, Resource, Energy	Europe, North and South America, and Asian Pacific	Productivity, Efficiency, Quality, Employee Commitment, Moral, Delivery
Giannakis and Papadopoulos	2016	Develop an operational perspective of sustainable supply chain	Resource, Energy, Compensation, employee well being, Health	Europe and USA	Productivity, Quality
Jitmaneeroj, B.	2016	Reform priorities for corporate sustainability Environmental, social, governance, and economic performance	Energy, leadership, policy, resource, well being, environmental	USA	Efficiency, productivity, safety, government commitment, Environmental

Hypothesis Development and Theoretical Framework

Sustainability has become the strategic imperative of the new millennium. The terms sustainability, corporate social responsibility, and corporate social performance (Elkington, 1998; Saufi, N. et al., 2016) all refer to organizations enhancing their long-term economic, social, and environmental performance. Both industry leaders and academics recognize that sustainability is important to the long-term success of firms and the communities in which they operate (Timothy, *et al*., 2015). Today's firms need systemic approaches to sustainability if they are to be competitive in the long term (Timothy, *et al*., 2015). Diligent endeavor is required to create an organizational infrastructure that supports the development of a sustainability strategy, failing which a firm's efforts to successfully implement such a strategy will be severely hindered. According to the World Bank (2016), sustainability development should be both environmentally sound and inclusive, focusing on reducing poverty and building shared prosperity that meets the needs of the current and future populations. Its report stresses efficient use of resources and the importance of delivering short- and long-term benefits for the planet, people, and prosperity. The World Bank Report (2016) indicates that this can be achieved by managing organizational resources throughout the resource-based view (RBV).

According to the RBV, a firm's endowment of resources is what makes its competitive advantage sustainable in time (Barney, 1996; Rumelt, 1984; Wernerfelt, 1984). RBV stresses the importance of intangible resources as the key to sustainability, highlighting that they are the main drivers of performance-sustainability across firms. Intangible resources provide sustainable competitive advantage to the firm if it has the properties of value, rarity, and inimitability (Singh *et al.,* 2011; Barney, 1991). These resources are distributed between health, human, energy, environmental, and economic resources, with indicators such as health, income, physical safety, development assistance, equality, public debt, investment, and energy and material consumption. According to Neuchatel (2013), investing in sustainability will support competition and improvement of business performance and operational metrics. Resource indicators such as education, health, employee compensation, wellbeing, energy management, and resources management (Villalonga, 2003; Schrettle *et al.,* 2014) were considered as the most significant indicators of business operational performance.

The MENA region faces a range of challenges to its long-term security and prosperity in the 21st century. Although many of the region's economic challenges have been widely analyzed, environmental challenges are rarely taken into consideration in the process of formulating economic policies therein (Sakmar *et al.,* 2011). This indicates that corporations in the MENA region should take the lead in implementing sustainability practices.

To assess the extent of corporate sustainability practiced by MENA region corporations, the following hypothesis was developed:

H1: On average, the corporate sustainability practices by MENA corporations is not acceptable.

The above hypothesis will be tested based on each performance category, resulting in six sub-hypothesis (H1a-H1f) related to different corporate sustainability categories: education, health, employee compensation, wellbeing, and resources and energy management (Camilleri, 2016; Simona *et al.,* 2014; Crowther and Seifi, 2016; Stritith, *et al.,* 2015). The statement for each H1 sub-hypothesis will be presented in the Sample & Questionnaire section below.

To determine whether sustainability practices differ according to company characteristics, such as size, change in sales, and debt to equity ratio, the following hypothesis is tested for each characteristic:

H2: Within each sustainability category, there is a difference in the average practices of MENA corporations across the different classes of each company characteristic.

Finally, to examine the relationships between corporate sustainability practices and performance, the following hypothesis is tested for each pair of sustainability and performance categories:

H3: There is a positive association between each sustainability category and each performance category.

Methodology

Research Design

This quantitative study is of an explanatory nature since it establishes a causal relationship between the adoption of sustainability within a company's strategy and the overall performance of the organization. The research is a cross-sectional study since it involved a one-time interaction with the sample. The results are measured numerically and analyzed using various statistical software packages (SPSS, Smart PLS, and Minitab)**.**

Sample & Questionnaire

The target population of the research is companies who operate in the MENA region. A questionnaire was sent to different firms in Lebanon, Egypt, UAE, Tunisia, and Morocco. Of the 140 questionnaires distributed via e-mail, 103 were returned, of which 96 were usable, yielding a valid response rate of 69%. The survey was given to middle and upper management within the selected organizations. The managers surveyed work in production, finance, HR, labor relations, and quality departments.

A four-page self-administered questionnaire was used to conduct this research. The questionnaire included 58 fixed-alternative questions of both a choice determinant and Likert scale type. It was divided into three parts. The first part consisted of five questions concerning corporate demographics. These comprised the size of the company, the nature of the firm, the average annual sales revenue change over the past five years, the company's debt as a percentage of equity, and whether sustainability is a main category of the firm's strategic plan. The second part of the questionnaire included 38 items measuring sustainability using a seven-point Likert scale (Strongly Disagree = 1, Disagree = 2, Somewhat Disagree = 3, Neutral = 4, Somewhat Agree =5, Agree = 6, and Strongly Agree = 7). These items were divided into six categories. The first category, measuring sustainability in terms of education, contains the following items:

Edc1. The company provides scholarships for university students
Edc2. The company provides scholarships for underprivileged (university) students
Edc3. The company provides/donates money for students with disabilities
Edc4. The company provides internship programs for students
Edc5. The company provides part-time jobs for students
Edc6. The company provides tuition help for employees (pay for higher college degree)
Edc7. The company considers level of education as one of the major issues in determining promotion
Edc8. The company links higher salary with higher education

The first four represent external educational sustainability activities. These items were used to construct a score based on average EduExtScr. Similarly, the remaining four questions related to internal educational sustainability activities were averaged to construct a score denoted by EduIntScr. Based on the above sub-hypothesis H1a, the average external educational sustainability (EduExtScr) level is lower than 5 (Camilleri, 2016).

The second category uses the seven items listed below to measure sustainability in terms of health, both internal and external (Cebrian *et al.,* 2013). Two scores, HthExtScr and HthIntScr, were constructed by averaging the first three items and the last four items respectively. Regarding H1b, the average internal educational sustainability (HthIntScr) level is lower than 5.

| Hth1.The company provides health assistance to underprivileged children |
| Hth2. The company offers health assistance to disabled children |
| Hth3. All the employees are given medical insurance |
| Hth4. Employees are provided with health care plan options |
| Hth5. Diversity is part of the company's culture |
| Hth6. The company hires disabled people |
| Hth7. Employees are granted all the sick days and maternal leave rights |

The third category measures sustainability in terms of compensation (Crowther and Seifi, 2016; Feng *et al.,* 2015). The five items below were used to obtain a single score denoted by CmpScr. Regarding H1c, the average compensation sustainability (CmpScr) level is lower than 5.

| Cmp1. Salaries of males and females in the same position are relatively equal |
| Cmp2. Salaries increase when the cost of living increases |
| Cmp3. Employees are paid for working overtime hours |
| Cmp4. Bonuses to employees increase when profits increase |
| Cmp5. The company pays average salaries compared to other companies in the same |

The below six items related to employee wellbeing constitute the fourth category (Huong *et al.,* 2016). The corresponding score is denoted by WbgScr. Regarding H1d, the average employee wellbeing sustainability (WbgScr) level is lower than 5 (Simona *et al*., 2014).

Wbg1. Promotion is based on performance rather than on seniority
Wbg2. Employee theft or other frauds have taken place in the firm
Wbg3. The company bears the cost of employee safety measures
Wbg4. Employees are provided with clear guidelines on the identification of physical hazards

The fifth category measuring sustainability in terms of resource management used the below eight items to construct its score, RscScr (Doherty and Terry, 2013). Regarding H1e, the average resource management sustainability (RscScr) level is lower than 5 (Crowther and Seifi, 2016).

Rsc33. The company ensures compliance with the related laws and regulation of water and air
Rsc34. The firm promotes the reuse of wastewater generated in the manufacturing processes
Rsc35. The company makes a concerted effort to reduce its CO_2 emissions
Rsc36. The company has a recycling program
Rsc37. The firm attempts to save money on raw material costs
Rsc38. Waste production is considered at each stage of the product lifecycle
Rsc39. Production is matched to demand in real time
Rsc40. Lean manufacturing is of high importance to the firm

The last sustainability category, energy management, consists of the five items listed below (Fellows, 2006). Its score is denoted by EngScr. H1f: The average energy management sustainability (EngScr) level is lower than 5 (Stritih , *et al*., 2015).

Eng41. Energy management is proactive in the company
Eng42. The company attempts to reduce energy consumption to reduce cost
Eng43. The firm supports saving energy to reduce damage to the planet
Eng44. Power is optimized in relation to load
Eng45. Energy-efficient components and machinery are used

The final part of the questionnaire included the 13 items listed below that measure the firm's performance in terms of productivity, efficiency, quality, and employee commitment (Montiel and Delgado-Ceballos, 2014; Hong *et al.*, 2012). Four performance scores representing the performance categories were constructed based on averaging the responses: PrdScr, EfcScr, EmpScr, and QltScr. In addition, a single item related to the reduction of toxic materials was included (Giannakis and Papadopoulos, 2016).

Prd1. The average labor productivity has increased
Prd2. The average capital productivity has increased
Prd3. The average time lost to issues affecting productivity has decreased
Prd4. Overall productivity ratings have increased
Efc1. The average employee efficiency has increased
Efc2. Capital efficiency has increased (the ratio of the average value of output in comparison to the amount of capital Efc3. Inventory turnover)
Emp1. Job engagement has increased
Emp2. The average absenteeism of employees has decreased
Emp3. Employee turnover has decreased
Qlt1. The proportion of services provided without error has decreased
Qlt2. The ratio of complaints to total services provided has decreased
Qlt3. Overall quality has increased
Prf5. The firm has witnessed a reduction in toxic materials and/or radioactive waste

The sustainability and performance scores, along with the demographic variables, were used to conduct the statistical analysis.

Statistical Analysis

Reliability: Reliability analysis was performed on each sustainability and each performance category, as well as on the corresponding entire part of the survey. The analysis resulted in the following Cronbach's alpha values: 0.849 (external education), 0.837 (internal education), 0.875 (external health), 0.852 (internal health), 0.789 (employee compensation), 0.920 (employee wellbeing), 0.948 (resources management), and 0.956 (energy management). The Cronbach's

alpha value for the combined part related to sustainability was 0.971. Regarding the performance categories, the Cronbach's alpha values were 0.904 (productivity), 0.924 (efficiency), 0.892 (quality), and 0.931 (employee commitment).

The Cronbach's alpha value for the combined part related to sustainability was 0.956.

Demographics: The majority of the surveyed companies (45.8%) have between 201 and 1,000 employees, 29.5% have more than 1,000 employees, while 16.7% have between 50 and 200 employees, and only 8.3% of the companies employ fewer than 50 people. Concerning the type of firm, most of the companies (33.3%) are in manufacturing. Moreover, pertaining to the average annual sales revenue change over the past 5 years, 75.0% of the companies reported a slight increase, 14.6% reported a decrease or no change, and 10.4% of the firms claimed a significant increase. Regarding the company's debt, the majority of the firms (87.5%) stated a debt of 1-25% of equity, and 12.5% of the companies stated a debt of 26-50% of equity. Additionally, 50.0% of companies asserted that sustainability is a main category in their strategic plan.

Descriptive Analysis: The descriptive statistics for the sustainability and performance scores are summarized in Table II.

Table II. Descriptive Statistics

Category	Score	Min	Max	Mean	Std. Deviation
External Education	EduExtScr	2.00	6.00	3.91	1.17
Internal Education	EduIntScr	2.00	6.67	4.01	1.34
External Health	HlthExtScr	1.00	6.33	3.74	1.35
Internal Health	HlthIntScr	1.00	7.00	3.69	1.32
Employee Compensation	CmpScr	2.00	7.00	4.00	1.18
Employee Wellbeing	WbgScr	1.83	6.67	3.90	1.45
Resource Management	RscScr	2.00	6.75	4.55	1.37
Energy Management	EngScr	2.40	7.00	5.44	1.35

Productivity	PrdScr	3.00	7.00	5.16	1.11
Efficiency	EfcScr	2.33	6.67	5.33	1.07
Quality	QltScr	3.00	7.00	5.44	1.14
Employee Commitment	EmpScr	1.67	7.00	3.92	1.62

From Table II, it is apparent that, on average, MENA corporations are underachieving in all sustainability categories except for resources and energy management, in which the average practice levels are acceptable. This shows that, on average, companies in this region are more involved in managing their various resources and energy effectively.

Testing of Means: To test hypothesis H1 (H1a-H1f), a lower-tailed test was conducted to determine whether the average score for a sustainability category is significantly larger than 5, as illustrated in Table III. The value 5 was selected since the Likert scale used is between 1 and 7, with 4 being "neutral" and 5 "somewhat agree."

Table III. Testing of Means for the Sustainability Categories

Category	Score	Mean	Std. Deviation	t-value (df=95)	p-value
External Education	EduExtScr	3.91	1.17	-9.13	6.0E-15 **
Internal Education	EduIntScr	4.01	1.34	-7.24	5.8E-11 **
External Health	HlthExtScr	3.74	1.35	-9.14	5.5E-15 **
Internal Health	HlthIntScr	3.69	1.32	-9.72	3.3E-16 **
Employee Compensation	CmpScr	4.00	1.18	-8.30	3.4E-13 **
Employee Wellbeing	WbgScr	3.90	1.45	-7.43	2.3E-11 **
Resource Management	RscScr	4.55	1.37	-3.22	0.0009 **
Energy Management	EngScr	5.44	1.35	3.19	0.999

The results show that the test is only significant for the energy management category: it provides strong evidence to support sub-hypotheses H1a-H1e and reject sub-hypothesis H1f, as illustrated in Table III. This indicates that MENA corporations are involved in sustainable practices in terms of energy management.

ANOVA Tests: Analysis of variance tests were conducted to test hypothesis H2. For each category of sustainability, an ANOVA test was employed to determine if there is a significant difference in the average sustainability practices across the different classes of each company characteristic. The test results are summarized in Tables IVa, IVb, and IVc.

Table IVa. ANOVA Tests Sustainability vs. Company Size

Category	Less than 50		50 - 200		201 - 1000		Above 1000		Total		F-value	P-value
	Size	Mean	Size	Mean	Size	Mean	Size	Mean	Size	Mean		
External Education	8.00	3.10	16	2.70	44	4.0400	28	4.63	96	3.91	15.793	0.000
Internal Education	8.00	4.08	16	2.88	44	4.2000	28	4.33	96	4.01	5.333	0.002
External Health	8.00	2.83	16	2.75	44	3.6800	28	4.64	96	3.74	10.867	0.000
Internal Health	8.00	3.81	16	2.97	44	3.7500	28	3.96	96	3.69	2.120	0.103
Employee Compensation	8.00	4.45	16	4.00	44	3.9300	28	3.99	96	4	0.438	0.726
Employee Well-Being	8.00	3.83	16	3.65	44	4.0800	28	3.79	96	3.9	0.451	0.717
Resource Management	8.00	4.94	16	3.56	44	4.4700	28	5.13	96	4.55	5.284	0.002
Energy Management	8.00	4.85	16	4.40	44	5.5400	28	6.06	96	5.44	6.732	0.000

Table IVa shows that the average sustainability score is the same across the various company sizes for the categories of internal health, employee compensation, and employee commitment. The test is significant for the other categories. In almost all cases, the mean score is higher for larger-size companies. Hence, we can conclude that larger-size companies tend to be more involved in corporate sustainability practices in the categories of internal and external education, external health, as well as resources and energy management.

Table IVb. ANOVA Tests Sustainability vs. Change in Sales Revenue

	No increase		Increased Slightly		Increased Significantly		Total		F-value	P-value
Category	Size	Mean	Size	Mean	Size	Mean	Size	Mean		
External Education	14	2.57	72	3.99	10	5.16	96	3.91	21.850	0.000
Internal Education	14	2.81	72	4.15	10	4.67	96	4.01	8.369	0.000
External Health	14	2.62	72	3.88	10	4.27	96	3.74	6.699	0.002
Internal Health	14	3.18	72	3.69	10	4.35	96	3.96	2.366	0.100
Employee Compensation	14	3.83	72	3.92	10	4.80	96	4.00	2.701	0.072
Employee Well-Being	14	3.05	72	3.91	10	5.07	96	3.90	6.242	0.003
Resource Management	14	3.34	72	4.72	10	5.00	96	4.55	7.387	0.001
Energy Management	14	4.03	72	5.67	10	5.80	96	5.44	10.905	0.000

Table IVb shows that, across the various levels of change in sales revenues over the past five years, the average sustainability score differs for all sustainable categories except internal health and, to some extent, employee compensation. In all cases, the mean score increases as performance in terms of change in sales revenues improves.

Table IVc. ANOVA Tests Sustainability vs. Debt to Equity Ratio

	1%-25%		25%-50%		Total		F-value	P-value
Category	Size	Mean	Size	Mean	Size	Mean		
External Education	82	3.79	12	4.73	96	3.91	7.335	0.008
Internal Education	82	3.87	12	5.00	96	4.01	8.148	0.005
External Health	82	3.74	12	3.72	96	3.74	0.001	0.970
Internal Health	82	3.58	12	4.42	96	3.96	4.329	0.040
Employee Compensation	82	3.8	12	5.40	96	4.00	24.037	0.000
Employee Well- Being	82	3.75	12	5.00	96	3.90	8.413	0.005
Resource Management	82	4.5	12	4.85	96	4.55	0.683	0.411
Energy Management	82	5.46	12	5.33	96	5.44	0.087	0.768

Table IVc shows that the average sustainability score is the same across the debt to equity levels for all sustainable categories of external health and resources and energy management, but differs for the other categories. It is noteworthy that companies with a higher debt ratio tend to have higher scores for almost all sustainable categories. This may be attributed to the same small sample size of companies with a large debt ratio.

Correlation Analysis: The relationships among the sustainability categories and performance categories can be examined via correlation analysis. Hypothesis H3 was tested by calculating the correlation matrix and identifying the significant correlation coefficients. Part of the correlation matrix showing the correlation coefficients between the various sustainability and performance categories is given in Table V.

Table V. Correlation Matrix Sustainability Categories vs. Performance Categories

		EduExtScr	EdyInttScr	HlthExtScr	hlthIntScr	CmpScr	WbgScr	RsctScr	EngScr
PrDScr	Correlation	.694**	.609**	.568**	.542**	.363**	.516**	0.853**	.897**
	p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
EfcScr	Correlation	.588**	.546**	.365**	.351**	.413**	.546**	.724**	.722**
	p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QltScr	Correlation	.672**	.608**	.606**	.529**	.304**	.397**	.810**	.895**
	p-value	0.000	0.000	0.000	0.000	0.003	0.000	0.000	0.000
EmpScr	Correlation	.675**	.808**	.643**	.714**	.587**	.754**	.767**	.647**
	p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

The correlation matrix reveals that all the correlation coefficients are significant at the 0.01 level, indicating the existence of a strong positive relationship between each sustainability category and each performance category. However, the strength of the association varies from moderate (employee compensation and quality) to very strong (energy management and productivity) and identifying the significant correlation coefficients. These results can be used as guidelines to improve productivity, for instance by engaging more in sustainable activities related to resources and energy management. Conversely, when employee engagement and commitment is to be

improved, the company should focus more on sustainable activities related to internal education, employee wellbeing, and internal health. It is noteworthy that the activities related to employee compensation are ranked lowest among the sustainability categories when the strength of the association with employee commitment is considered.

Conclusion

The subject of sustainability has developed into an increasingly popular phase. It has become indispensable for the proper management of a business and shareholder value creation. Managers are expected to concomitantly enhance both corporate social and financial performance. Recognition of the importance of sustainability, however, varies between nations. The findings of this study show that the corporations operating in the MENA region are underachieving in all aspects of sustainability except for energy management. Larger-sized companies tend to be more involved in corporate sustainability practices in the categories of internal and external education, external health, and resources and energy management. Additionally, the results reveal the existence of a strong positive relationship between each sustainability category and each performance category. These findings will help MENA corporations to address the aspects of sustainability in which they are presently very deficient and, thus, work towards enhancing them. By increasing their engagement in these other facets of sustainability, they would increase their productivity, efficiency, quality, and, therefore, their overall performance.

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