Vol.(9) Issue. (1) April 2026,

Faculty of Economics, Sirte University (Vol (9), No (1)
Economic Studies Journal (ESJ), مجلة الدراسات الاقتصادية
Faculty of Economics, Sirte University كلية الاقتصاد - جامعة سرت
https://journal.su.edu.ly/index.php/esj/ar
https://doi.org/10.37375/esj.v9i1.4002

Environmental Management Accounting and its impact on the quality of disclosed information: An applied study for the Ras Lanuf Oil and Gas Processing Company (RASCO) in Libya

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Received: 04.03.2026 – *Accepted:* 25.03.2026 – *Published:* 01.04.2026

Abstract

This study aimed at investigating the environmental management accounting (EMA), and the quality of disclosed information, as well as to exploring the impact of EMA on the quality of disclosed information. In this study, a survey questionnaire was extracted in order to collect the data from the respondents totaled (77) employed in the (RASCO) in Libya. After obtaining the data, it was inserted in the statistical package for social sciences (SPSS) program for analyzing and examining the hypothesis. As a result of the analysis, several results were obtained, they include that the EMA is highly applied in the (RASCO). In addition, the EMA has a significant impact on the quality of disclosed information as well as there is a positive relationship between the EMA and the quality of information in (RASCO).

Keywords

Environmental Management Accounting (EMA).
The information quality.
The quality of disclosed information.
The Environmental Accounting information (EAI).

المحاسبة الإدارية البيئية وتأثيرها على جودة المعلومات المُفصَح عنها: دراسة تطبيقية لشركة رأس لانوف لمعالجة النفط والغاز (راسكو) في ليبيا

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الملخّص

هدفت هذه الدراسة إلى التعرف على كلا من المحاسبة الإدارية البيئية وجودة المعلومات المفصح عنها، وكذلك استكشاف أثر المحاسبة الإدارية البيئية على جودة المعلومات المفصح عنها. في هذه الدراسة تم صميم استبانة مسحية بهدف جمع البيانات من أفراد العينة البالغ عددهم (77) موظفاً في شركة رأس لانوف لتصنيع النفط والغاز (راسكو) في ليبيا. وبعد جمع البيانات تم إدخالها في برنامج الحزمة الإحصائية للعلوم الاجتماعية للتحليل واختبار الفرضيات. تم الحصول على العديد من النتائج، من بينها أن المحاسبة الإدارية البيئية مطبق بشكل كبير في راسكو بالإضافة إلى ذلك فإن المحاسبة الإدارية البيئية لها تأثير كبير على جودة المعلومات المفصح عنها وكذلك هناك علاقة إيجابية بين هيئة الأدوية الأوروبية وجودة المعلومات في (راسكو).

الكلمات المفتاحية

المحاسبة الإدارية البيئية،
جودة المعلومات،
جودة المعلومات المُفصَح عنها،
معلومات المحاسبة البيئية.

Introduction

globally, environment and environmental matters have become a key social attention and a cause of growing public concern regarding the environment issues (Beck Campbell, & Shrives, 2010; Elsayih, Datt, & Abdalmajeed 2024; Gray & Bebbington, 2001; Lu & Taylor, 2018; Lamberton, 2005; Milne & Gray, 2007; Athma & Rajyalaxmi 2017; Singh, Panackal, & Shankar, 2017). The public concern brought a pressure on organizations to disclose a sufficient information about their activities (Guthrie & Farneti, 2008; Lamberton, 2005; Hu Qiu, She, & Wang, 2021; Bugshan & Elsayih, 2023; Ge & Zhang, 2025). Deloitte and Van Staden (2011) stated that the main motivations for disclosing information related to the environment are the public concern and the stakeholder rights. Constantly, Deegan (2000) stated that all different stakeholders have the right to access to information of organization's activities including information related to its influence on the employment, environment and community sponsorship.

Providing valuable information for decision makers is one of the main organization's responsibilities (Cho, Chen, & Roberts, 2008; Hu et al. 2021; Bugshan & Elsayih, 2023; Elsayih et al. 2024). The information disclosed by any organization, is usually used by internal users for controlling overhead and decision making; as well as external users such as government and financial communities (Eltaib, 2012; Bugshan & Elsayih, 2023; Ge & Zhang, 2025). According to (Kent & Chan, 2003) in the past, organizations focus was on the quantity of information instead of information quality. Furthermore, Eltaib (2012) stated that organization frequently try to improve its social as well as environmental information.

Environmental Management Accounting (EMA) is the main tool to analyze and generate high quality environmental information for the process of making decision (Barman & Saikia, 2016; Yakhou & Dorweiler, 2004). The quality of revealed information related to environment is considered as a key value for organization as there are several benefits might be reached if the organization disclosed high quality information about the environment (Ge & Zhang, 2025; Rattanaphaphtham & Kunsrison, 2011; Bugshan & Elsayih, 2023; Elsayih et al. 2024; Kent & Chan (2003) and Meek, Roberts & Gray (1995) identified the competitive advantage as a benefit of revealing high quality environmental information.

The Study Problem

As it has been highlighted in the introduction, organizations have been attempted to develop the quality of disclosed information (Eltaib, 2012; Bugshan & Elsayih, 2023; Ge & Zhang, 2025). Providing information with high quality is one of all stakeholders rights (Deegan, 2000; Deloitte & Van Staden,2011). Organizations, by EMA, could provide stakeholders with high quality information, which in return can support decision makers and also support the competitiveness of the organization (Shuaibu Muhammad, A. & Isah, 2019). In Libya, there is a lack of research related to EMA and also to environmental accounting in general (Eltaib, 2012; Ahmed, 2004; Elgobbi & Elghannai, 2018; Ahmed & Mousa, 2010).

The researchers conducted exploratory study on a sample of this study (RASCO). The exploratory study revealed several issues related to the information quality and EMA. These issues could be summarized in: (A) EMA is not fully realized and clarified to the staff of the company. (B) the information quality is not among the priorities of the company. (C the disclosed information does not consistent with the requirements of stakeholders. (D) difficulties are appeared in the company associated to the accessibility and visibility of the information.

As a result, this study is conducted to investigate the EMA and its influence on the quality of information in Libya in (RASCO). Therefore, the problem in this study is

designed to find an answer to the next question:

Are there impacts of the EMA on the quality of disclosed information in (RASCO) in Libya?

The hypothesis of the study

Based on the above problem. The hypothesis of this study is:

There are significant impacts of EMA on the quality of disclosed information in (RASCO).

This hypothesis is divided into four sub hypothesis as following:

1-There are significant impacts of EMA on the clarity and the understandability of disclosed information in (RASCO).

2-There are significant impacts of EMA on the reliability and transparency of disclosed information in (RASCO).

3-There are significant impacts of EMA on the convenience (relevance)and effectiveness of disclosed information in (RASCO).

4-There are significant impacts of EMA on the comprehensiveness and comparability of disclosed information in (RASCO).

The Study Objectives

The vital objectives of this study could be highlighted as follows:

1-Identify the level of EMA application in (RASCO).

2-Investigate of the relationship between EMA and the quality of information.

3-Analyze the impact of EMA on different dimensions of information quality in (RASCO).

4-To find out some recommendations that can be provided to develop the EMA and information quality in (RASCO).

The Study Significance

As it has been mentioned by previous researchers, quality of disclosed information has become major topic of companies, that are seeking to increase quality of their disclosed information. Therefore, the significance of the current study is brought from the large significance of quality of disclosed information. In addition, the EMA became an essential motivated area of research as it is related to the environment, which recently has become an important societal concern. The main significance this study can be mentioned as follows:

1-This study is considered to be among early work in the Libyan context. Therefore, it provides some recommendations for (RASCO) in relation to the EMA and information quality.

2-This study can improve the knowledge of the researchers by giving some indications regarding the current reality of the EMA and the quality of disclosed information.

3-This study gives contributions to the academic literature as such literature is poor in the Libyan context.

4-This study, through its results, provides several areas of future research that can help in improving the strategies and policies related to the implementation of EMA.

Conceptual Framework

1-Environmental Management accounting (EMA)

The mid of nineteens witnessed the start of attempting to develop the EMA as one of the sub-fields of environmental accounting (Todea, Stanciu, & Joldos, 2010). Recently, EMA practices a separate improvement in different terms, this improvement is reflected in the quantity of studies, which were published as well as the quality and variety of concepts and theories, which were discussed (Todea et al, 2010). Different definitions of EMA have been developed since the mid of nineteens. The International Federation of Accountants defines the EMA as " the management of environmental and economic performance through the development and implementation of appropriate environment-related accounting systems and practices. While this may include reporting and auditing in some companies, the EMA typically involves life-cycle costing, full-cost accounting, benefits assessment, and

strategic planning for environmental management". (IFAC, 1998).

Bartolomeo, Bennett, Bouma, Heydkamp, James, and Wolters, (2000) define EMA as procedure of creating and examination of both financial or non-financial data and information (as instance: information about compliance with environmental regulations, information for strategic investment decisions as well as operational programs) that can support management. Yakhou and Dorweiler, (2004) argue that EMA analysis evaluates the information about environmental and financial costs as well as the benefits, then recognition of the high and increasing levels of capital and operational expenses that is related to the equipment of pollution control and environmental taxes. In addition, the United Nations Division for Sustainable Development provides another definition which is "the general use of EMA information is for internal organizational calculations and decision making. The EMA procedures for internal decision making include both physical procedures for material and energy consumption, flows and final disposal, and monitories procedures for costs, savings and revenues related to activities with a potential environmental impact". (UNDSD, 2001). To sum, the EMA provides management with a comprehensive range of information in both aspects financial and non-financial environmentally matters related to the organization's environmental performance.

2-The Quality of Disclosed Information:

The quality of disclosed information is one of the gates that helps an organization to reach its purposes such as competitive advantages and making valuable decisions (Anggadini, 2013; Ge & Zhang, 2025). Therefore, information users always want to get information with high quality, and to do so, they employ information professional (Elgobbi & Elghannai, 2018; Hu et al. 2021; Bugshan & Elsayih, 2023). Several definitions of quality of accounting information have been provided by scholars. According to Anggadini (2013) accounting information quality is a complex notion, which covers relevancy of accounting information value, organization profit and accounting conservatism. Furthermore, Gelinas Dull, & Wheeler, (2012) mention that information quality is information which is valuable for the decisions. Similarly, other scholars have stated that the information have high quality when information is appropriate for the information users and consumers (Kahn el al. 2002; Strong el al. 1997; Khlif et al, 2015; Susanto, 2017; Ge & Zhang, 2025). In addition, a definition provided by O'Brein and Maracas, (2010) state that accounting information will have quality when it has the features of quality essential for decision makers in order to reach the objectives of organization. To be considered as a high quality accounting information, the accounting information must be valuable to information users and have quality characteristics, which include: understandability, reliability, neutrality, relevance, timeliness and comparability (FASB, 1980; IASB, 1989). The accounting information has quality of understandability when it is displayed on the way that fits the abilities of users to understand the information, where accounting information will not be helpful to the users when it cannot be understood (Beest & Braam, 2006). For reliability, it means displaying neutrality without material error and bias (FASB, 1980). Accounting information will be reliable when it conveys events and underlying transactions to the users without bias, or undue error to misleading or fraudulent purposes (Bukenya, 2014). Regarding relevance, information will be considered relevant if it is able to influence decisions of internal users (organization and managers) or external users, and provide the information in the required time (timeliness). Therefore, accounting information is relevant if it is capable to make a difference in the decisions of users and helps users to evaluate both past and present events (Beest & Braam,

2006). Furthermore, the quality of comparability requires that transactions and events to be consistently measured, which make users capable to compare the results of the organization in different periods of time or compare it with the results of other organizations (IASB, 1989; Beest & Braam, 2006).

3-Stakeholder Theory

In the area of environmental accounting, stakeholder, institutional and legitimacy theories considered as the mutual theories conducted (Eltaib, 2012). Stakeholder theory states that all different stakeholders should have the access to all information about the company such as its emission and employment (Deegan, 2000). More specific, according to the managerial branch of stakeholder theory, company is realized as society's part (Deegan, 2000), from this perspective, "the different stakeholder groups within society and how they should best be managed if the organization is to survive" (Deegen, 2000, p. 272). Thus, the company will provide positive information to the more powerful stakeholders (Deegen, 2000). But according to the ethical branch of stakeholder theory, all stakeholders have the similar right to get company's information and its influence on society (Deegan, 2009).

The Literature Review

Recently, the quality of information has become one of main needs of the organizations and customers, because it leads to gain competitive advantage and high quality of organization's performance (Salaun & Flores, 2001; Lee Strong, D. M., Kahn, B. K. & Wang, 2002; Bugshan & Elsayih, 2023; Ge & Zhang, 2025). According to Redman (1998), any problem in quality of information could affect the operations and leads to increase costs. Therefore, the quality of information has become an important requirement for any organization that to succeed in its operations (Bovee 2004; Redman 1998; Wongsim & Gao, 2011; Hu et al. 2021). Here, the need to adopt appropriate accounting information systems raising up (Wongsim & Gao, 2011), as accounting is essential in making decisions by providing information with high quality. EMA, as Christ and Burritt, (2013) indicate, it provides both financial and physical information regarding the organization's environmental impacts and its performance.However, there are several challenges to adopt of EMA (Ferenhof, Vignochi, & Selig, Lezana, & Campos, 2014; Garbharran & Doorasamy, 2015). These challenges include that, the implementation of EMA has no motivation to the organization at the beginning, and some organizations consider the disclosure of accounting information has some risk. An additional challenge is that accountants in some cases are unaware of the role of EMA in information quality improvements (Garbharran & Doorasamy, 2015).

Considerable work has been done regarding the environmental accounting, which included EMA and environmental information. According to Lee (2005, p 8) "managerial accounting can help organizational managers determine how to approach environmental reporting". This means that management accounting is valuable in classification and controlling the environmental costs, also in producing a high-quality information, which in return leads to right decisions. Lee (2005) concludes that managerial accounting considered to be the best tool to achieve the peak of organization performance. Later on, Lee (2007) concluded that, in the extractive industry (include oil and gas), capturing all environmental related information and conveying it to the users is challenging task. In addition, Rikhardsson, Bennett, Bouma, and Schaltegger, (2005) explore the implementing of EMA, they conclude that, the EMA has a significant influence in assisting decision makers by providing information with a high quality. According to Jonall (2008), EMA can help management commitment by improving managers' awareness of actual environmental costs and

information consistency, that can lead to high environmental and economic performance. Jonall (2008) concluded that EMA can improve the information about the environmental cost and support decision making.

According to Rattanaphaphtham and Kunsrison (2011), by disclosing high quality environmental information, the organization can achieve numerous benefits. Therefore, the environmental information disclosure quality is significantly vital to the company as it impacts the interpretation of information users, enhance the confidence of investor and gain competitiveness advantage. In this regard, Hyrslova (2011) stated that EMA provides users with important information regarding the materials such as purchase value and trace the purchase lines. This helps management, by using this information, to make decisions about the efficiency of material and improve the economic performance of the organization.

In Libya, the early work has been done by Ahmed (2004), in his research, environmental disclosure was examined between1998 - 2001. His outcomes indicated that no evidence could be found to say companies are disclosing environmental information. In addition, Ahmed and Mousa (2010) examine environmental disclosure of the 18 major industrial corporations quoted by the Industrial and Mineralisation Secretary (IMS) in Libya. They concluded that there is a little improvement of the corporate environmental disclosure practice in Libya. More recently, there is a study done by Elgobbi and Elghannai (2018) which discovered the influence of information quality on the environmental accounting disclosure in the Arabian Gulf Oil Company in Libya, they found that information quality has a significant influence on the details level, type and nature of disclosure of environmental information. Furthermore, Abdalmajeed (2021), in his study, explored the environmental accounting application in the Iron and Steel sector in Libya, the study revealed that, despite of some challenges, the (LISC) highly applies the environmental accounting.

The Study Methodology

The researchers adapted the descriptive approach in this study in order to explore the relationship between the EMA and the quality of disclosed information. Moreover, the case study approach used because it helps overall and depth analysis of the data (Elgobbi & Elghannai, 2018). Researchers designed a questionnaire as a technique to gather the data of the current study. After that the researchers reviewed and analyzed the data by the (SPSS) to be transferred to numerical, whereas (5) levels of practice score used to define each answer of the participants as presented in the (Table .1).

Table 1: Levels of practice scale

Practice Scale	Very low	Low	Medium	High	Very high
Levels	Less than1.80	1.80 - 2.60	2.60 - 3.40	3.40 - 4.20	4.20 - 5

The Reliability of the Questionnaire

This study used a Cronbach's Alpha Coefficient to investigate the reliability of the questionnaire. The results were very high (97.6 %) as it viewed in table (2). Therefore, it is considered appropriate measurement instrument.

Table 2:Cronbach's Alpha Coefficient

Cronbach's Alpha	N of Items
0.976	25

The population and sample of the study

The study conducted on the (RASCO), In specific, the attention was on 3 departments, which considered to be the most related to the study problem, including: financial, environmental and administrative affairs, that have nearly (150) workforces. Hence, according to Krejcie and Morgan (1970), the researchers Randomly distributed (108)

copies of the questionnaire, then after revising (83) returned, just (77) copies were valid to analysis.

The Empirical Analysis:
EMA Application

This section discussed the elements of the independent variable and also the statistical distribution of the responses of the participants are highlighted. The table (3) showed that, the phrase " EMA in a company provides information related to the level of environmental performance" is the most significant phrase, as it came with a very high importance leveland a mean of approximately (4.26) and a standard deviation of almost (0.818). On the contrary, the phrase " The company's EMA provides information on costs and their analysis " is the least important phrase as it came with a mean of about (4.03) and a standard deviation of almost (0.794). This provides indication that the environmental expenses and its analysis should get extra attention. In concluding, the entire independent variable (EMA application) has a weighted mean of approximately (4.1542) with a standard deviation of almost (0.70387). Moreover, the T-test of the entire independent variable is statistically significant as the T value is (51.790) with a significance level of (0.000). This value is smaller than the level of significance of (5%). Consequently, this means that, the EMA is highly applied in the (RASCO).

Table 3: EMA application

Statements	Mean	Std. Deviation	Level of application	T- Value	Sig.
EMA in a company provides information related to the level of environmental performance.	4.26	0.818	Very high	45.717	0.000
The company's EMA provides information on costs and their analysis.	4.03	0.794	high	44.477	0.000
A company's EMA provides information on products that have high environmental costs.	4.06	0.767	high	46.523	0.000
EMA provides information in the company about the efficiency with which its natural resources can be used.	4.16	0.762	High	47.857	0.000
EMA provides information in the company to ensure that risks are minimized and future opportunities are exploited.	4.18	0.807	High	45.490	0.000
EMA in a company provides information on its compliance with environmental legislation.	4.19	0.795	High	46.280	0.000
EMA in the company provides the information needed to make decisions related to operational programs.	4.06	0.713	High	50.002	0.000
EMA in the company provides the information needed to make decisions related to strategic investment decisions.	4.03	0.811	High	43.578	0.000
Sum	4.1542	0.70387	High	51.790	0.000

The Information Quality:

1- The Clarity and Comprehensibility of Information:

In this part, the fundamentals of the dependent variable "the clarity and comprehensibility of information" were discussed. As it is viewed in the table (4) it is clear that the phrase " the EAI in the company has clarity and consistency in the narration" is the most essential phrase, as it came with the highest level of application and a mean of almost (4.05) and a standard deviation of about (0.872). In contrast, the phrase " The EAI in the company is easy to understand for all its users, regardless of their

degree of knowledge" is the minimum vital phrase as it came with a weighted mean of almost (3.66) and a standard deviation of almost (0.940). This indicates that the company should focus more toward simplify the disclosed information in order to be completely understandable. Regarding to the entire dependent variable "The clarity and comprehensibility of information", it has a mean of almost (3.8604) and a standard deviation of almost (0.76250) with a high level of application. Furthermore, the T value if the entire dependent variable was (44.426) with a level of significant (0.000), this value is smaller than (5%) which supports the existence of the clarity and comprehensibility of information.

Table 4: the clarity and the understandability of information.

Statements	Mean	Std. Deviation	Level of application	T-Value	Sig.
The environmental accounting information in the company has clarity and consistency in the narration.	4.05	0.872	High	40.774	0.000
The environmental accounting information in the company is disclosed in a quantitative and descriptive manner.	3.83	0.818	High	41.118	0.000
The environmental accounting information in the company is easy to understand for all its users, regardless of their degree of knowledge.	3.66	0.940	High	34.171	0.000
The environmental accounting information in the company is clear and not shrouded in ambiguity.	3.90	0.804	High	42.505	0.000
Sum	3.8604	0.76250	High	44.426	0.000

2-The Reliability and Transparency of Information:

This part discussed the components of the dependent variable " the reliability and transparency of information". Table (5) showed that the statement of " the EAI in the company expresses the events truthfully" is the most vital statement, as it has the highest level of application and a mean of almost (3.92) and a standard deviation of about (0.774). On the other hand, the statement " EAI is published on the company's website for all users to see" is considered as the least important statement, as it has a mean of about (3.52) and a standard deviation of almost (1.108). this gives insight that the company should disclose the information in all possible channels. Overall, the whole dependent variable of " the reliability and transparency of information" has a high level of application and a mean of nearly (3.6948), and the standard deviation of about (0.76156). In addition, the T-test of the entire variable is statistically significant, as it valued almost (42.573) with a level of significance (0.000).

Table 5: The reliability and transparency of information

Statements	Mean	Std. Deviation	Level of application	T-Value	Sig.
The environmental accounting information (EAI) in the company expresses the events truthfully.	3.92	0.774	High	44.464	0.000
The environmental accounting information (EAI) in the company is neutral and impartial.	3.68	0.979	High	32.933	0.000
The environmental accounting information (EAI) disclosed in the company is positive.	3.66	0.852	High	37.702	0.000

Environmental accounting information (EAI) is published on the company's website for all users to see.	3.52	1.108	High	27.885	0.000
Sum	3.6948	0.76156	High	42.573	0.000

3- The Convenience and Effectiveness of Information:

This section dealt with the elements of the variable of " the convenience and effectiveness of information". It is viewed in the table (6) that, the clause " the EAI in the company meets the requirements of decision makers" is the most important clause as it has a weighted mean of almost (3.99) and a standard deviation of about (0.803) with high level of application. In contrast, the least important clause is the clause of " the EAI in the company is characterized by a high degree of accuracy and is able to influence economic decisions" as it came with a mean of almost (3.86) and a standard deviation of about (0.823). Regarding the entire dependent variable of " the convenience and effectiveness of information", comes with a high level of application and it has a weighted mean of about (3.9351), and the standard deviation of about (0.73873). In addition, the T-test of the entire variable is statistically significant, as it valued almost (46.742) with a level of significance (0.000).

Table 6: The convenience and effectiveness of information

Statements	Mean	Std. Deviation	Level of application	T-Value	Sig.
The environmental accounting information (EAI) in the company meets the requirements of decision makers.	3.99	0.803	High	43.577	0.000
Ease of access to environmental accounting information (EAI) for decision makers and at the appropriate time.	3.97	0.873	High	39.936	0.000
The company's environmental accounting information(EAI) helps users predict future decisions and evaluate past decisions.	3.91	0.830	High	41.325	0.000
The disclosed environmental accounting information (EAI) is characterized by a high degree of accuracy and effectiveness.	3.95	0.793	High	43.687	0.000
The environmental accounting information (EAI) in the company is characterized by a high degree of accuracy and is able to influence economic decisions	3.86	0.823	High	41.145	0.000
Sum	3.9351	0.73873	High	46.742	0.000

4- The Comprehensiveness and Comparability of Information:

In this section, the components of the variable of " the comprehensiveness and comparability of information " were discussed. As it is viewed in the table (7), the phrase " the company's EAI reflects comparable accounting periods " is the most vital phrase as it has a mean of almost (3.97) and a standard deviation of about (0.811) with high level of application. In contrast, the clause of " the company clarifies the change in the basis and accounting methods used in extracting EAI " is the least essential clause as it came with a mean of almost (3.84) and a standard deviation of about (0.844). In conclusion, the entire dependent variable of " the comprehensiveness and comparability of information ", comes with a high level of application and it has a weighted mean of about (4.0682), and the standard deviation of about (1.67442). In addition, the T-test of the entire variable is statistically significant, as it

valued almost (21.320) with a level of significance (0.000).

Table 7: The comprehensiveness and comparability of information

Statements	Mean	Std. Deviation	Level of application	T-Value	Sig.
The company's environmental accounting information reflects comparable accounting periods.	3.97	0.811	High	43.015	0.000
The environmental accounting information in the company is considered interconnected and comprehensive in describing the events reported.	3.91	0.781	High	43.918	0.000
Environmental accounting information in the company is based on consistent accounting principles and methods that allow comparison between one period and another.	3.90	0.836	High	40.875	0.000
The company clarifies the change in the basis and accounting methods used in extracting environmental accounting information.	3.84	0.844	High	39.970	0.000
Sum	4.0682	1.67442	High	21.320	0.000

Study variables

1- The application of EMA (independent variable):

The results of questionnaire related to the entire referred variable indicated that has a mean of around (4.1542) with a standard deviation of nearly (0.70387). Therefore, the application of the EMA in the (RASCO) is highly applied.

2- The quality of information (dependent variable):

In this study, quality of information is analyzed in four criteria as follows: Firstly, the clarity and comprehensibility of information, according to empirical analysis, it has a mean of almost (3.8604) and a standard deviation of nearly (0.76250) with a high level of application, which supports the highly existence of the clarity and comprehensibility of disclosed information. Secondly, the reliability and transparency of information, as empirical analysis highlighted, it has a mean of almost (3.6948), and the standard deviation of about (0.76156) with high level of application, which supports the highly existence of the reliability and transparency of disclosed information. Thirdly, the convenience and effectiveness of information, as shows in the empirical analysis, it comes with a great level of application and it has a mean of nearly (3.9351), and the standard deviation of around (0.73873), which supports the highly existence of the convenience and effectiveness of disclosed information. Finally, the comprehensiveness and comparability of information, which comes with a high level of application and it has a weighted mean of about (4.0682), and the standard deviation of approximately (1.67442), which supports the highly existence of the comprehensiveness and comparability of disclosed information.

Testing the Hypothesis

This study conducted to test one main hypothesis. To do so, four sub hypothesis were tested as following:

The sub hypothesis one:

The first hypothesis was tested in this study is "*There are significant impacts of EMA on the clarity and the understandability of disclosed information in (RASCO)*". Hence, the simple linear regression was applied to discover the impacts of EMA on the clarity and understandability of information. As table (8) shows that, the T value is almost (9.845) and the F value is approximately

(96.930) with a level of significance (0.000), which supports the hypothesis states that the EMA impacts the clarity and understandability of information in (RASCO). Moreover, the R value is nearly (0.751) which means that there is a positive relationship between the EMA and the clarity and the understandability of information, and the value of R^2 is (0.564) which indicate that any change in the EMA offsets as a result of a change in the clarity and understandability of information of about (56.4 %). Therefore, based on the above analysis the hypothesis is accepted.

Table 8: statistical results of Clarity and Understandability of information

Variable	T-Value	R	R^2	F	Sig.
Clarity and Understandability of information	9.845	0.751	0.564	96.930	0.000

The sub hypothesis two:

The second hypothesis was tested is "*There are significant impacts of EMA on the reliability and transparency of disclosed information in (RASCO)*". Consequently, the simple linear regression was used to determine the impact of EMA on the reliability and transparency of information. As table (9) views that, the T value is around (7.524) and the F value is about (56.606) with a significance level of (0.000) which smaller than the level of significance of (5 %), which supports the hypothesis states that, the EMA has an impact on the clarity and understandability of information in (RASCO). In addition, the R value is approximately (0.656), which indicates that there is a positive relationship between the EMA and the reliability and transparency of information, and the value of R^2 is (0.430) which means that any change in the EMA offsets as a result of a change in the reliability and transparency of information of almost (43 %). Therefore, based on the above analysis the hypothesis is accepted.

Table 9: statistical results of Reliability and Transparency of information

Variable	T-Value	R	R^2	F	Sig.
Reliability and Transparency of information	7.524	0.656	0.430	56.606	0.000

The sub hypothesis three:

The third hypothesis tested in this study is "*There are significant impacts of EMA on the convenience (relevance)and effectiveness of disclosed information in (RASCO)*". To do so, the simple linear regression was applied to study the impact of EMA on the convenience (relevance) and effectiveness of information. As table (10) views that, the T value is almost (10.097) and the F value is approximately (101.952) with a significance level of (0.000), this supports the hypothesis states that the EMA has an influence on the convenience (relevance) and effectiveness of information in (RASCO). Furthermore, the R value is nearly (0.759), which means that there is a positive relationship between the EMA and the convenience (relevance) and effectiveness of information, and the value of R^2 is about (0.576) which indicates that any change in the EMA offsets of as a result of a change in the convenience (relevance) and effectiveness of information of about (57.6 %). Therefore, based on the above analysis the hypothesis is accepted.

Table 10: statistical results of Convenience (relevance) and Effectiveness of information

Variable	T-Value	R	R^2	F	Sig.
Convenience (relevance) and Effectiveness of information	10.097	0.759	0.576	101.952	0.000

The sub hypothesis four:

The fourth hypothesis was tested in this study is " *There are significant impacts of EMA on the comprehensiveness and comparability of disclosed information in (RASCO)*". The simple linear regression was applied to discover the influence of EMA on the comprehensiveness and comparability of

information. As table (11) views that the T value is nearly (3.985) and the F value is almost (15.878) with level of significance (0.000) which supports the hypothesis states that the EMA impacts on the comprehensiveness and comparability of information in (RASCO). In addition, the R value is approximately (0.418), which indicates that the relationship between the EMA and the comprehensiveness and comparability of information is a positive relationship. Moreover, the value of R^2 is almost (0.175) which means that any change in the EMA offsets of as a result of a change in the comprehensiveness and comparability of information of about (17.5 %). Therefore, based on the above analysis the hypothesis is accepted.

Table 11: statistical results of Comprehensiveness and Comparability of information

Variable	T-Value	R	R^2	F	Sig.
Comprehensiveness and Comparability of information	3.985	0.418	0.175	15.878	0.000

Testing the main hypothesis:

This study comes to test the main hypothesis that stated " There are significant impacts of the EMA on the quality of disclosed information in (RASCO)". So, the simple linear regression applied to discover the effects of EMA on the quality of information. According to table (12), the T value is about (11.310) and the F value is almost (127.907) with a significance level of (0.000), which is smaller than the level of significance of (5 %). This supports the hypothesis states that the EMA impacts the quality of information in (RASCO). In addition, the R value is nearly (0.794), which means that the relationship between the EMA and the quality of information is a positive relationship. Furthermore, the value of R^2 is approximately (0.630) which indicates that any change in the EMA offsets as a result of a change in the quality of information of about (63 %). Therefore, based on the above analysis the hypothesis is accepted.

Table 12: statistical results of The quality of information.

Variable	T-Value	R	R^2	F	Sig.
The quality of information	11.310	0.794	0.630	127.907	0.000

Findings discussion

Current study keens to explore the influence and relations of the EMA on the quality of information in (RASCO). This study revealed that the EMA is highly applied in the (RASCO), which is consistent with the Rikhardsson et al. (2005), who stated that the EMA was being implemented with traditional management accounting. It also aligns with the study of Khalid, Rae Lord, B and Dixon, (2012) which revealed that some elements of EMA were existed in some studied firms. Furthermore, this finding aligns with Abdalmajeed (2021) who discover that, environmental accounting is highly applied the Libyan Iron and Steel Company, Misurata–Libya. However, this finding runs contrary to the study of Ahmed (2004) who showed that there were no signs about the existence of corporate environmental disclosure in Libya.

Another significant finding is that EMA significantly impacts the quality of information in (RASCO) and their relationship is a positive relationship. This finding is consistent with Jonall (2008) who concluded that environmental management accounting can improve the information. Furthermore, It aligns with the study of Hyrslova (2011) which stated that EMA provides stakeholders with high quality information.

Results of the study

According to the prior analysis, numerous results have been exposed, include:

1- This study showed that, the EMA is very highly applied in the (RASCO).

2- The results of this study indicated that, the EMA has a significant impact on the quality of disclosed information as well as there is a positive relationship between the EMA and the quality of information in (RASCO).
3- This study illustrated that, the EMA has a significant impact as well as it has a positive relationship with the clarity and the understandability of information in (RASCO).
4- This study revealed that, the EMA has a significant impact as well as it has a positive relationship with the reliability and transparency of information in (RASCO).
5- This study discovered that, the EMA has a significant impact as well as it has a positive relationship with the convenience (relevance) and effectiveness of information in (RASCO).
6- The results of this study revealed that, the EMA has a significant impact as well as it has a positive relationship with the comprehensiveness and comparability of information in (RASCO).
7- This study showed that, the clarity and the understandability of disclosed information in (RASCO) is highly applied.
8- This study revealed that, the reliability and transparency of disclosed information in (RASCO) is highly applied.
9- The finding of this study discovered that, the convenience (relevance) and effectiveness of disclosed information in (RASCO) is highly applied.
10-This study indicated that, the comprehensiveness and comparability of disclosed information in (RASCO) is highly applied.

Recommendations

Drawing from the results above, some valuable recommendations have been raised up as follows:

1- Based on the empirical analysis, more focus should be taken on different media channels to develop users access to the disclosed information.
2- RQSCO should use easy concepts to make sure that the information is understandable by all users.

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