

-RESEARCH ARTICLE-

SUSTAINABILITY OF THE FIRM ALONG WITH EARNINGS MANAGEMENT, EVIDENCE FROM MIDDLE EAST

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—Abstract—

The objective of this study is to examine the influence of sustainability involvement on profit management practices within the Jordanian context for the year 2018. This aligns with the United Nations Sustainable Development Goals (SDGs), particularly Goal 12 and its sub-target 12.6, which highlight the importance of integrating sustainable practices and sustainability-related information into corporate disclosures. The research sample comprises forty-seven firms listed on the Amman Stock Exchange's first market. The analysis incorporates multiple control variables including board size, firm age, firm size, financial performance, financial leverage, and the presence of financial losses. The findings reveal a negative though statistically insignificant relationship between sustainability involvement and earnings management, suggesting that firms demonstrating higher ESG engagement tend to exhibit lower levels of earnings manipulation. This study represents the first attempt to explore the impact of sustainability involvement on earnings management behaviour using a sample of

Citation (APA): Shahwan, Y., Abuhusein, A., Binsaddig, R. (2025). Sustainability of the Firm Along with Earnings Management, Evidence from Middle East. *International Journal of eBusiness and eGovernment Studies*, 17(1), 233-254. doi:10.34109/ijepeg.2025170111

shareholding firms listed in the first market in Jordan. These results contribute to the emerging body of literature examining corporate governance mechanisms within the Middle Eastern context and provide insights into the role of sustainability reporting in constraining earnings management behavior among Jordanian corporations.

Keywords: Earnings Management; Non-Financial Information; Financial Information; ESG Score; Sustainable Development; Jordan

INTRODUCTION

Recently, there has been growing focus on firms' and investors' strategic decisions with significant environmental and social impact (Eccles et al., 2014). The concept of sustainable development (SD) has predominantly been examined from a macroeconomic perspective (Hanley, 2000), with its foundation built upon three key pillars: economic growth, social equity, and environmental protection (Barbier, 1987; Elliott, 2005). To ensure progress towards SD across all levels, enterprises must actively lead the transition process, as they serve as primary contributors to economic productivity and resource generation (Bansal, 2002).

Initially, sustainability was closely associated with environmental preservation, as highlighted in numerous United Nations conferences throughout the 1970s and 1980s. The World Commission for Development and the Environment (1987) underscored that the essence of SD lies in addressing the needs of current generations without compromising those of future ones. In this regard, the Triple Bottom Line framework provides an approach for assessing corporate strategies and performance along three dimensions—economic, social, and environmental—thereby demonstrating overall corporate success (Dyllick & Hockerts, 2002; Goel, 2010; Schaltegger & Burritt). Consequently, this model supports the integration of environmental considerations into broader business strategies (Elkington, 1997). The SDGs provide measurable steps for addressing global challenges linked to sustainability (Gupta & Vegelin, 2016; Sachs, 2012). The 2030 Agenda is an actionable framework focused on eradicating poverty in all its forms, fostering international collaboration, and establishing lasting global peace. Its objectives and associated targets, which address key issues such as economic growth, climate change, environmental conservation, and equality, are designed to guide global actions over a fifteen-year period (Lee et al., 2016).

Within this framework, Sustainable Development Goal 12—responsible consumption and production—is particularly significant. Its objective is to decouple economic growth from environmental degradation and excessive resource exploitation. Therefore, integrating sustainability-oriented practices within corporate operations is vital for achieving enduring development (Chan et al., 2018). Specifically, target 12.6 encourages corporations, particularly large and transnational entities, to adopt sustainable strategies and incorporate sustainability data into their reporting frameworks

(Simnett & Huggins, 2015). This study examines the link between financial and non-financial disclosures, emphasising the effect of sustainability involvement on earnings management (EM). This relationship is assessed through firms' adoption of sustainable practices and their reporting via non-financial disclosures. Due to potential stakeholder conflicts and information asymmetry, management may be motivated to engage in EM to mask true performance (Cimini, 2015).

Empirical studies examining the relationship between Corporate Social Responsibility (CSR) and EM have reported inconsistent outcomes due to variations in theoretical perspectives, measurement approaches, and bidirectional causality. Moreover, earlier investigations have predominantly focused on firms in Middle Eastern or common law contexts, leaving a gap in understanding within the Jordanian setting. The current research addresses this gap by analysing the Jordanian corporate environment. Jordan provides a unique context characterised by limited investor protection, governance structures that widen the gap between control and ownership, reliance on shareholder agreements, concentrated ownership—often by families or the state—and a relatively small number of listed entities (Magli & Nobolo, 2013; Tiscini & Di Donato, 2008; Zattoni, 2019). To the best of the author's knowledge, this is the first study to empirically evaluate the association between sustainability involvement and EM among publicly listed Jordanian companies, employing appropriate proxy measures.

Using a sample of forty-seven firms listed on the Amman Stock Exchange's first market and applying an OLS regression analysis, the results reveal a weak negative association between sustainability involvement and EM. Specifically, higher engagement in sustainability initiatives appears to slightly constrain managerial tendencies to pursue EM practices. These findings contribute to the ongoing academic discourse concerning sustainability and EM, particularly within Middle Eastern and civil law contexts. By focusing on Jordanian listed firms, this study offers a novel empirical perspective that enriches understanding of the relationship between sustainability involvement and EM practices.

Despite the intuitive appeal of sustainability involvement as a governance constraint, empirical evidence remains mixed and inconclusive. Some research suggests that corporate social responsibility activities can serve as costly signaling mechanisms that discourage financial opportunism (Choi & Pae, 2011), while other studies question whether sustainability disclosures represent genuine commitments or mere window dressing (Marquis & Toffel, 2012). This ambiguity underscores the importance of context-specific research that examines these relationships within particular institutional and economic settings. Furthermore, the majority of existing studies focus on traditional governance mechanisms, leaving a notable gap regarding how modern sustainability frameworks interact with earnings management behavior (Campa & Donnelly, 2014).

The period 2013–2023 provides a particularly relevant timeframe for examining these relationships in Jordan. This decade witnessed significant developments in corporate governance standards following the adoption of revised corporate governance codes, increased investor demand for sustainability disclosures, and evolving regulatory frameworks governing financial reporting and corporate responsibility. Analyzing this period enables researchers to capture how Jordanian firms adapted to changing governance expectations and sustainability demands while managing financial reporting practices.

This study addresses these gaps by conducting a comprehensive regression analysis of Jordanian listed firms covering 2013–2023, specifically investigating whether sustainability involvement, measured through ESG disclosure scores (SESG), constrains earnings management practices (EMP). The research employs a rigorous methodology incorporating anomalous accruals as a proxy for earnings management (DeFond & Park, 2001) and controls for multiple firm-level variables including board size, firm age, firm size, financial performance, financial leverage, and loss-making status. By testing this relationship empirically within an emerging market context, the study contributes to both the corporate governance and sustainability literature while providing practical insights for policymakers, regulators, and investors concerned with financial reporting quality in Jordan and similar emerging economies.

REVIEW OF LITERATURE AND DEVELOPMENT OF HYPOTHESIS

Growth of Sustainable Development

In recent years, increasing scholarly and policy interest has been directed towards understanding how corporate leaders, managers, and policymakers can facilitate transformations that enable societies to adopt more responsible approaches towards both the community and the environment (Jackson, 2009; Porritt, 2007). Part of this growing focus involves identifying and defining specific sustainability approaches, particularly those that highlight either internal or external orientations of sustainability commitment. Such approaches encompass social, environmental, and economic concerns that must be assessed and addressed cohesively (Wang et al., 2023). Given the interconnected nature of these three dimensions, it is necessary not only to analyse each element individually but also to examine how they influence one another (Ebner & Baumgartner, 2006). Strategic decisions related to environmental sustainability and social responsibility thus represent vital milestones in developing coherent business approaches that reinforce sustainable outcomes. In this respect, firms may adopt diverse sustainability measures that align with their industrial, geographical, and local contexts (Mancini et al., 2016).

As noted by Lee et al. (2016), the United Nations' document outlining the seventeen SDGs presents profound challenges for global communities. The report emphasises key

phrases such as “inclusive and sustainable economic growth”, “inclusive societies”, and “sustainable development”, all of which underscore the collective objective of ensuring long-term human progress (Gupta & Vegelin, 2016). The SDGs are widely regarded as the most comprehensive articulation of developmental aspirations that safeguard the welfare of future generations. For organisations in developed economies, engaging with the creation of sustainable value offers multiple advantages, including the identification of emerging markets, stimulation of innovation, and promotion of business growth and entrepreneurial initiatives (Europe, 2017).

Similarly, a number of studies have explored how sustainability reporting facilitates the implementation and communication of sustainable business practices, thereby demonstrating firms’ commitment to sustainability to both stakeholders and the public sector (Kaur & Lodhia, 2019; Rosati & Faria, 2019; Tsalis et al., 2020). Rosati and Faria (2019) identified specific characteristics of firms more likely to engage in sustainability disclosure, such as possessing greater intangible assets, larger firm size, and external assurance mechanisms; they also observed that such firms tend to have younger boards and a higher proportion of female directors. Furthermore, the literature increasingly regards sustainability frameworks as essential governance tools for addressing environmental and social challenges. From this standpoint, managers are urged to embed sustainability principles into their strategic and operational decision-making processes (Christensen et al., 2017).

Disclosure of Non-Financial Information

To achieve the objectives outlined in the 2030 Agenda, it is imperative that organisations, governments, and corporations first acknowledge the importance of its underlying principles and subsequently initiate actions that align with its goals (Fiandrino, 2019). As highlighted by (Bebbington & Unerman, 2018), the SDGs provide a comprehensive framework for re-evaluating the role of accounting in addressing the challenges generated by policies promoting SD. This includes the application of innovative accounting approaches to assess progress toward the SDGs, revisiting relevant subject areas, and reconsidering conceptual responsibilities within the accounting discipline. In the contemporary context, the demand for non-financial disclosure has become more pressing than ever. Such disclosures need to be embedded within corporate reporting systems that, until the early twenty-first century, predominantly prioritised financial and quantitative data. Within this setting, the extent of disclosure assumes a pivotal role in reducing, or potentially resolving, the conflicting informational needs of various stakeholders (Venturelli et al., 2018).

Despite its broad adoption in earlier research, this theoretical approach has notable limitations. It primarily centres on investors and financial variables, neglecting the growing stakeholder demand for environmental and social information. Some scholars have criticised this perspective for its individualistic and self-serving orientation, which

contradicts the foundational principles of modern social accounting (Gray et al., 2014; Gray et al., 2009). Consequently, the integration of additional theoretical frameworks—specifically institutional, legitimacy, and stakeholder theories—provides a more comprehensive foundation for understanding the rationale behind non-financial disclosure. Institutional theory suggests that many post-industrial organisations design formal structures that reflect institutional expectations rather than operational necessities (Meyer & Rowan, 1977). These institutional pressures shape corporate behaviour, influencing how firms respond to societal expectations (Scott, 2013). Within this framework, non-financial reporting can be interpreted as the development of standards or practices intended to satisfy social demands. Multiple actors may either facilitate or hinder such disclosures, driven by both ethical considerations and pragmatic motives.

Legitimacy theory further clarifies the growing importance of non-financial reporting. A firm attains legitimacy when its actions conform to the value systems and norms of the broader social environment (Suchman, 1995). (Lindblom, 1994) posited that organisational legitimacy reflects stakeholder expectations; when corporate practices fail to align with these expectations, legitimacy gaps emerge. To address these gaps, firms often employ diverse mechanisms aimed at enhancing their perceived legitimacy (Deegan, 2002; Dowling & Pfeffer, 1975; Lindblom, 1994; Venturelli et al., 2018). The dissemination of non-financial information is one such mechanism, serving to reduce legitimacy gaps and mitigate associated risks

Similarly, stakeholder theory provides insight into the rationale for disclosing non-financial information by viewing the organisation as a network of interconnected actors with diverse and sometimes conflicting interests. From this perspective, disclosure practices aim to reconcile these interests and fulfil stakeholder expectations. In particular, reporting on sustainability engagement represents a way to respond to information needs expressed by different stakeholder groups. Ultimately, a firm's capacity to achieve sustainable outcomes, both socially and environmentally, depends on its ability to balance stakeholder requirements while maintaining consistency between its short- and long-term strategic objectives (Deegan, 2002).

Implications and Definitions of Earnings Management

Since the global financial crisis, stakeholder participation in corporate affairs—particularly among large multinational enterprises—has increased substantially. This heightened engagement has resulted in a notable expansion of non-financial reporting and greater emphasis on evaluating ESG performance (Velte, 2019). Over the past decade, stakeholders' expectations regarding transparency and accountability have intensified. However, members of corporate boards possess the capacity to influence the content and quality of non-financial disclosures, at times contributing to practices such as greenwashing or information saturation (Darus et al., 2014; Mahoney et al.,

2013; Pizzi, 2018). Moreover, earnings management (EM) activities, together with both international and domestic regulatory initiatives related to non-financial reporting, may exert differing effects on financial reporting processes depending on their direction and intensity (Adegbe et al., 2022).

Although numerous studies have attempted to define EM, its conceptual breadth makes it difficult to provide a precise and universally accepted definition (Paton, 1922). Consequently, there is no single authoritative interpretation of EM. Due to its inherent complexity and varied implications, scholars have proposed multiple definitions reflecting different perspectives and underlying assumptions (Beneish, 2001; Scott & Scott, 2003). Broadly speaking, EM can be described as a set of managerial decisions through which executives deliberately alter the presentation of earnings to achieve outcomes that would otherwise be unattainable or less desirable (Ronen, 2008). This description allows for the identification and expansion of different EM practice techniques (Dechow et al., 1995). In essence, EM may influence annual reporting both directly and indirectly. In the direct form, firms manipulate operational decisions to achieve real EM outcomes. In the indirect form, adjustments are made within financial statements through accrual-based or classificatory methods that affect reported earnings figures.

Development of Research Hypothesis

Over the past three decades, numerous studies have examined both the nature and the extent of the relationship between different factors and EM strategies, often identifying this relationship as bidirectional, with a particular focus on the precision of accounting outcomes. Specifically, four major determinants have been recognised as influencing EM practices: the control system (Hirst, 1994), corporate governance (Klein, 2002), the financial system and the regulatory framework (Beatty & Harris, 1999). In addition, an expanding body of research has explored the interconnection between financial and non-financial information through diverse theoretical frameworks and analytical methods (Velte, 2019), reflecting the growing awareness of ESG issues among investors and corporations (Rezaee, 2016). Although CSR appears, by definition, to be distinct from financial performance (Scholtens & Kang, 2013), a significant amount of scholarly attention over the past three decades has been directed towards understanding how CSR-related activities interact with corporate financial outcomes (Griffin & Mahon, 1997; Martínez-Ferrero & Frias-Aceituno, 2015; Pozzoli, 2018; Romano & Onesti, 2016; Velayutham, 2018).

During the same period, comparatively fewer studies Carroll (1979) have explored the connection between CSR and EM, yielding mixed results. From a theoretical standpoint, stakeholder theory has been the predominant framework used to investigate this association, although other theoretical approaches have also been employed. Within the stakeholder theory perspective (Carroll, 1979; Freeman, 2010), two key implications

arise. First, by disclosing ESG-related information, corporations can better satisfy stakeholder expectations. Second, stakeholders can assist organisations in adopting a long-term orientation for performance and strategic sustainability, which in turn supports their continued existence.

Most empirical findings report a negative correlation between CSR and EM (Bozzolan et al., 2015; Cho & Chun, 2016; Choi & Pae, 2011; Dhaliwal et al., 2012; Gras-Gil et al., 2016; Scholtens & Kang, 2013). Nonetheless, some research (Gargouri et al., 2010; Muttakin et al., 2015) has identified positive relationships, while other investigations have reported inconsistent (Chih et al., 2008; Riahi-Belkaoui, 2003) or statistically insignificant results (Liu et al., 2017), often accompanied by differing causal interpretations (Velayutham, 2018). These inconsistencies may stem from the diversity of theoretical standpoints, the bidirectional nature of the CSR–EM relationship, the variety of EM measurement approaches, and the differing proxies used for ESG variables (Bozzolan et al., 2015; Dowling & Pfeffer, 1975; Lock & Seele, 2015; Oh et al., 2020; Velayutham, 2018; Velte, 2020). Drawing upon stakeholder theory and the evidence of prior empirical findings, the following hypothesis is therefore proposed:

H1: *The sustainability involvement negatively impacts the earnings management practices of the shareholding listed firms.*

RESEARCH METHODOLOGY

Research Sample

To explore the notion of sustainability alongside earnings management practices (EMP) among firms listed on the Amman Stock Exchange (ASE) and to examine the research hypotheses, the study collected ESG information based on the GRI-G4 framework. The process began with a comprehensive review of the ESG scores (SESG) and Global Reporting Initiative (GRI) indicators for all shareholding companies. Firms were subsequently excluded if they were not listed on the ASE's first market between 2013 and 2023, or if ESG data were unavailable for any fiscal year during that period. Based on criteria such as capitalisation, performance, compliance with national laws, and adherence to corporate governance principles, the final sample comprised 47 firms out of the 51 listed entities recognised as leading shareholding companies within the Jordanian financial market. The first market encompasses organisations from three primary sectors—financial, services, and industrial—covering the 2013–2023 period and producing a total of 470 firm-year observations.

To derive the required ESG and financial data for assessing both sustainability engagement and EM, the study analysed GRI-G4 information and ESG scores using the eXtensible Business Reporting Language (XBRL) system in conjunction with annual reports. Additionally, several firm-specific control variables were incorporated into the

analysis. Despite minor data omissions, the econometric models preserved approximately 470 firm-year observations across the ten-year study period. Firstly, much of the prior literature investigating the relationship between EM and CSR has concentrated on firms operating in common law jurisdictions or within European, Asian, and Gulf contexts such as the United Arab Emirates and Saudi Arabia. By contrast, Jordan represents a civil law system characterised by a relatively small number of listed companies, concentrated ownership structures involving families, the state, institutional investors, and foreign shareholders, as well as the use of control-enhancing mechanisms that widen the gap between ownership and control (Lekvall et al., 2014). Secondly, to the best of the author’s knowledge, this investigation is among the first to examine the link between EMP and sustainability participation within Jordanian public firms using appropriate proxy variables.

Factors Measurement

Given that the EM variable serves as the dependent factor and provides a more accurate representation of the reference sample and research context, it was first identified and measured to evaluate the study’s hypotheses. Following this, both the independent and control variables were defined and incorporated into the analytical framework.

Measurement of Earnings Management

Consistent with prior studies investigating the association between sustainability involvement and EM (Gargouri et al., 2010; Jordaan et al., 2018; Klein, 2002; Warfield et al., 1995), this study adopted an appropriate proxy to measure EM. Specifically, the DeFond & Park (2001) model was applied, employing discretionary accruals as a proxy for EM to provide a more robust analysis within the Jordanian context (Campa & Donnelly, 2014; Ianniello, 2015; Marra et al., 2011). The same variables from the DeFond and Park model were utilised; however, they were assessed on an annual basis to enhance the understanding of the observed phenomena. Using this model’s proxy, the EM variable configuration, represented as AIWCA (abnormal change in working capital accruals), is expressed as follows:

$$AIWCA_t = WCAP_t + \left[\frac{WC_{t-1}}{S_{t-1}} \right] \times SAL_t \dots \dots \dots (1)$$

In this formulation, WCAP represents net working capital, while SAL_t denotes the firm’s sales, where t refers to the current year and t–1 corresponds to the preceding year. Equation 1 specifies that AIWCA is calculated individually for each firm included in the analysis. To maintain a model with minimal restrictions, the study employed the absolute values of AIWCA, weighted by total assets, in the subsequent statistical analyses (Warfield et al., 1995).

Firms' Sustainability Involvement Measurement

This study utilises the ESG Score derived from the GRI-G4 framework as a proxy for evaluating sustainability involvement. Based on firms' disclosed data, this score captures their environmental and social responsibility performance. Using this information, three core indices were constructed, representing the environmental, social, and corporate governance (CG) dimensions. The composite SESG score, ranging from 0 to 100, measures a firm's overall environmental, social, and governance performance, with 0 indicating no sustainability profile and 100 representing the highest performance. To enhance the objectivity of the relationship between sustainability involvement and earnings management, the study employs the median value as a robust measure of central tendency, aligning with previous methodologies for assessing qualitative factors in each category. Finally, a dummy variable is introduced, assigned a value of 1 when a firm's score equals or exceeds the median and 0 otherwise.

Control Variables

To mitigate potential endogeneity concerns, the author incorporated several additional variables that could influence EMP (Boone et al., 2007; Hermalin & Weisbach, 1991; Merendino & Melville, 2019). Initially, two CG variables were included: firm age and board size. These variables were derived from each company's annual and CG reports for the period 2013–2023. Board size (BS) was measured as the total number of directors serving on the firm's board. Prior literature presents mixed evidence regarding the impact of this factor (Jensen, 1993). Consequently, the expected sign for BS in this study remains indeterminate. Firm age (FA) was calculated in years, following the methodology of previous research (Berger & Udell, 1995). Although older firms generally demonstrate higher disclosure and better earnings quality, the expected significance of this variable was considered uncertain, given that most firms in the sample were relatively young. Additionally, four control variables were included alongside these CG factors. The first was firm leverage (FLEV), computed as the ratio of total debt to market value of equity. Prior studies provide inconsistent findings on its association with EMP (Beatty & Harris, 1999), leading the author to treat the expected sign as inconclusive.

The second variable was firm profitability (FP), measured by return on assets (ROA), calculated as net income divided by total assets. The author anticipated a negative association for this variable. The third factor, firm size (FS), was assessed using the natural logarithm of total assets, following Eisenberg et al. (1998) and Ali et al. (2017), with an expected negative relationship, consistent with . Finally, the study included FLOSS, representing the existence of a financial loss during the examined period. This dummy variable equals 1 if the firm reported a loss in a given year and 0 otherwise (Ianniello, 2015).

Model of the Research

A regression analysis was conducted to examine the association between sustainability involvement and EMP using data from Jordanian listed firms covering the period 2013–2023. The measurement methods, expected signs, and variables are presented in Table 1.

$$EMP = B_0 + B_1SESG + B_2 BS + B_3FA + B_4 FS + B_5FP + B_6 FLEV + B_7 FLOSS + \varepsilon \quad (2)$$

Table 1: Factors, Anticipated Sign, and Measurement

Factors	Anticipated Sign	Measurement
SESG	-	Total score calculated according to each firm's stated ESG data.
EMP		A proxy for the DeFond and Park (2001), which computes each firm's anomalous accruals for business working capital.
BS	?	Total number of board members at the end of each year.
FLEV	?	Calculated by dividing total debt by equity market value.
FP	-	Measured by return on assets, calculated by dividing net income by total assets.
SIZE	-	Natural logarithm of total assets.
FA	?	Natural logarithm of firm age in years.
FLOSS	?	Dummy variable: 1 if there is a FLOSS in the year, 0 otherwise.

FINDINGS

Descriptive Analysis

Descriptive statistics for each variable examined in this study are presented in Table 2. Particular attention is given to the variables EM, BS, FS, FP, FLEV, and FLOSS, as they represent the central elements of Formula 2 and are compared with findings from prior research. The mean (median) value of EM is 0.059 (0.039), indicating lower levels compared to the results reported by Campa and Donnelly (2014), who employed similar proxies for EMP in a sample of Jordanian listed firms. The descriptive statistics for SESG, the independent variable, reveal a mean value of 0.488, also shown in Table 2. As this study represents the first to use SESG as a proxy for sustainability involvement within the Jordanian context, comparative analysis with prior investigations is not feasible.

Regarding board composition, particularly the BS variable, the results indicate an average of 9.668 members per board. This figure aligns with findings from earlier research on the Jordanian market (Di Pietra et al., 2008; Marra et al., 2011; Prencipe & Bar-Yosef, 2011). The study also reveals that both the mean and median values for FP and FS are notably higher than those documented in previous works. These differences can be attributed to the distinct timeframes analysed across related studies, such as Campa & Donnelly (2014), Ianniello (2015), (2013–2015), Campa & Donnelly (2014) (2005–2007), and Ianniello (2015) (2010). Finally, the findings indicate that the mean

and median values for FLEV and FLOSS correspond closely with those reported in earlier studies (DeFond & Park, 2001).

Table 2: Descriptive Analysis

Factors	Maximum	Minimum	Mean	Median
SESG	1.000	0.000	0.488	1.000
EMP	0.197	0.003	0.059	0.039
FLOSS	1.000	0.000	0.108	0.000
FLEV	5.191	0.000	0.601	0.416
FP	16.044	-12.242	6.895	8.554
SIZE	14.572	9.669	11.254	12.689
FA	5.755	0.711	2.998	2.993
BS	14.000	5.000	9.668	9.228

Correlation Test

The results of the correlation analysis are presented in Table 3. This matrix enables the author to evaluate the influence of ESG regulations, measured through the SESG variable, on EMP within the firms included in the study. The VIF values for all variables confirm the absence of multicollinearity issues (Hair et al., 2010), with the highest VIF recorded at 1.418 for FS. The results indicate a negative, though statistically insignificant, correlation between EMP and SESG (-0.135), consistent with expectations. This suggests that firms exhibiting higher sustainability involvement, as reflected by elevated SESG scores, are likely to engage less in EMP. Furthermore, EMP shows negative correlations with FP (-0.175) and FS (-0.201), whereas positive relationships are observed with BS (0.091), FA (0.071), FLEV (0.612), and FLOSS (0.151).

Table 3: Pearson Correlation Analysis

Factors	EMP	SESG	BS	FA	FS	FP	FLEV	FLOSS	VIF
EMP	1.000								
SESG	-0.135	1.000							1.201
BS	0.091	0.051	1.000						1.211
FA	0.156	0.090	0.301 *	1.000					1.135
FS	-0.201	0.410 **	0.313 *	0.219	1.000				1.418
FP	-0.175	-0.116	-0.059	-0.071	-0.212	1.000			1.151
FLEV	0.612**	-0.099	-0.071	0.086	-0.181	-0.177	1.000		1.158
FLOSS	0.151	0.052	0.091	0.033	0.124	-0.318 *	0.249	1.000	1.155

ESG is the represent the SCORE of ESG, PROF, and FLEV are the firm's variable FP and FLEV, respectively. Every significance level has two tails. At the 5% and 1% levels, respectively, there is a significant difference.

Findings of Regression Test

An OLS regression analysis was performed using the proxy for EMP as the dependent variable to evaluate the study hypothesis. The model incorporated BS, AGE, FS, FP, FLEV, and FLOSS as control variables, while SESG, representing sustainability involvement, was employed as the independent variable (Table 4). The SESG variable, used as an independent factor based on each firm's disclosed ESG information, exhibited a negative coefficient (-0.004).

Table 4: Findings of Testing the Regression

Factors	Coefficient	P-Value	Expected Sign
SESG	-0.004	0.817	(-)
FLOSS	-0.003	1.022	(?)
FLEV	0.039	0.001	(?)
FP	-0.002	0.318	(-)
FS	-0.007	0.306	(-)
FA	0.007	0.500	(?)
BS	0.004	0.335	(?)
CONSTANT	0.091	1.227	
R ²		0.405	

Specifically, the extent of a firm's disclosure of ESG policies appears to exert minimal influence on the board's capacity to monitor and regulate the implementation of EMP practices. Although this result is not statistically significant, it remains conceptually meaningful, as the core objective of the study is to ascertain whether sustainability participation affects EMP behaviour.

CONCLUSION

This study investigates the influence of sustainability engagement on EMP within the Jordanian context over the period 2013 to 2023. Focusing on firms listed on the Amman Stock Exchange, the research examines the interplay between financial and non-financial disclosures. The study is aligned with the United Nations Sustainable Development Goals, particularly Goal 12 and its sub-target 12.6, which advocate for the adoption of sustainable practices and the inclusion of sustainability information in corporate annual reports and financial statements (Lee et al., 2016).

Broadly, the results highlight the importance of integrating financial and non-financial information, underscoring that transparent disclosure is vital for ensuring long-term business sustainability and value creation for diverse stakeholder groups (Velte, 2019). To the best of the author's knowledge, this research represents the first empirical analysis of how sustainability involvement influences EMP among firms listed on the Amman Stock Exchange's first market in Jordan. In doing so, it contributes to closing a gap in the literature, which has largely focused on other contexts and produced mixed findings. Governments and related institutions should consider the sustainability initiatives undertaken by firms when evaluating their overall performance and

compliance with broader environmental and social objectives (Fiandrino, 2019). Likewise, investors and other market participants can benefit from incorporating sustainability performance data into their decision-making processes, as such information provides insights beyond conventional financial indicators (Rogers, 2015).

The findings further reveals that sustainability involvement demonstrates a directional relationship with earnings management, it does not emerge as a statistically significant constraint on earnings management among Jordanian firms. Future research should explore additional dimensions of sustainability engagement, investigate the role of regulatory enforcement mechanisms, and examine whether the effectiveness of ESG disclosures in constraining earnings management varies across different industry sectors or firm characteristics. Additionally, longitudinal studies examining whether the significance of sustainability involvement has changed post-2023 would provide valuable insights into the evolving relationship between corporate sustainability and financial reporting quality in emerging markets.

However, this study faces certain limitations. The most notable constraint relates to the availability of SESG data for Jordanian listed firms, which restricted the sample size (Doni et al., 2020). Future research could address these limitations by expanding the sample to include additional sectors, such as telecommunications or unlisted firms, thereby enabling broader comparative analyses. Furthermore, subsequent studies could employ separate measures for each SESG component to better capture their distinct impacts on EMP and to provide a more nuanced understanding of how different sustainability dimensions influence firms' earnings management practices.

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