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# Is earnings management associated with corporate environmental disclosure? Evidence from Kuwaiti listed firms

(Short title: Corporate environmental disclosure and earnings management in Kuwait)

**Ali M. Gerged<sup>\*a&b</sup>**  
(Corresponding author)

**a:** Leicester Castle Business School  
De Montfort University  
The Gateway, Leicester, LE1 9BH, UK  
[ali.gerged@dmu.ac.uk](mailto:ali.gerged@dmu.ac.uk)  
0044 116 250 6713

**b:** Faculty of Economics  
Misurata University  
Misurata City  
PO Box 2478, Libya

**Lara M. Al-Haddad<sup>c</sup>**

Faculty of Economics and Administrative Sciences  
Yarmouk University  
P.O Box: 21163  
Jordan, Irbid  
[lara.haddad@yu.edu.jo](mailto:lara.haddad@yu.edu.jo)

**Meshari O. Al-Hajri<sup>d</sup>**

College of Business Administration  
Kuwait University  
Jamal Abdul Nasser St  
P.O. Box 5969  
Kuwait  
[meshari@cba.edu.kw](mailto:meshari@cba.edu.kw)

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# **Is earnings management associated with corporate environmental disclosure? Evidence from Kuwaiti listed firms**

## **Abstract**

**Purpose:** This study investigates the association between corporate environmental disclosure (CED) and earnings management (EM) in a Gulf Cooperation Council (GCC) emerging market, namely Kuwait.

**Design/methodology/approach:** Using panel data from firms listed on the Kuwaiti stock exchange from 2010 to 2014, this paper applies a fixed-effects model to examine the CED-EM nexus. This analysis was supplemented with estimating a two-stage least squares (2SLS) model and a generalised method of moment (GMM) model to address any concerns regarding endogeneity problems.

**Findings:** The results are suggestive of a significant and negative relationship between CED and EM in Kuwait. This implies that the environmentally responsible managers are less likely to be engaged in EM practices in Kuwait.

**Research limitations/implications:** The theoretical implication of the results of this study is that managers in Kuwait seem to employ CED as a method to decrease the possibility of any formal or informal actions that could be imposed upon their activities.

**Originality/value:** So far, a limited number of studies focused on examining the CED-EM nexus internationally. Furthermore, research carried out to examine the CED-EM link within a GCC market is virtually non-existent. This study, therefore, presents the first empirical analysis of this relationship in Kuwait. Also, this research is of a significant value stemming from the environmental challenges that are facing Kuwait as an oil-reliant economy coupled together with the crucial economic development in Kuwait and its critical contribution to the GCC economy.

**Keywords:** Corporate Environmental Disclosure (CED), Earnings Management (EM), Gulf Cooperation Council (GCC), Kuwait, Panel Data.

**Paper type:** Research paper.

## **Introduction:**

Corporate attitudes toward corporate environmental disclosure (CED) activities have increased dramatically during the recent years as a result of the increased interest of, and demand from, stakeholders for environmentally responsible behaviours by firms (Kim et al., 2012; Al Jarah, and Emeagwali, 2017). A firm's engagement in CED practices is expected to be beneficial in establishing a positive reputation, improving its negotiation power, and reducing its cost of capital (Fombrun et al., 2000; Park, 2017), and it is considered to be a crucial tool for enhancing a firm's competitiveness in the market (Sen and Bhattacharya, 2001; Sarumpaet et al., 2017).

Moreover, environmental activities are expected to stimulate corporate ethical behaviours (Kang and Moon, 2011). Although investors' interests are focused mainly on corporate financial information, prior research (e.g., Anderson and Frankle, 1980; Dhaliwal et al., 2014) suggests that they are also concerned about corporate social and environmental information.

The extant accounting literature provides two alternative propositions for firms' involvement in environmentally-related practices. First, firms may engage in environmental disclosure activities in order to meet the expectations of ethical behaviours by different groups of stakeholders within a given society (Jones, 1995; Patten and Trompeter, 2003), and as a means of demonstrating the "*socially and environmentally responsible*" financial and non-financial reporting to the public (Atkins, 2006; Kim et al., 2012). The second alternative motivation for firms' involvement in CED actions is that managers try to "*opportunistically*" use these activities for self-interest purposes, such as covering up management misconduct (McWilliams et al., 2006). While the first proposition suggests a significant (negative) relationship between CED practices and earnings quality (earning manipulation), the second proposition suggests an opposite relationship (Kim et al., 2012).

Prior research suggests that the relation between CED and earnings management (EM) is a context-specific, mainly related to the political and regulatory environment (Yip et al., 2011). Given that, the outcomes of any investigation of the CED-EM nexus are attributed to variations in the regulatory environment across countries. So far, only a limited number of studies have been carried out worldwide to examine the relationship between corporate earnings management and firms' disclosure of environmental information in annual reports (e.g., Kim et al., 2012; Pye and Lee, 2013; Liu et al., 2017). Notwithstanding, a fewer amount of studies has been devoted to examining this association in the context of developing countries (Sun et al., 2010). Furthermore, to the best of our knowledge, research carried out to examine the CED-EM nexus within the context of a Gulf Co-operation Council (GCC) market is virtually non-existent. The current study, therefore, aims at closing this shortage in the accounting literature by providing empirical evidence about this significant issue from a small and emerging GCC market, namely the Kuwaiti market.

Kuwait is a very small country in the GCC region with a population of 4.1 million counting 65% non-Kuwaiti citizens in June 2015 (Kuwait Stock Exchange, 2015). Kuwait has gained its independence from the UK in 1961 and ruled by Al-Sabah royal family up to date (Al-Yaqout, 2006; Almujaed, 2011). After the discovery of oil in 1938, Kuwait has become a resource-

based economy which helped to achieve extraordinary economic growth in the country (Rieger, 2013). The Kuwait Stock Exchange (KSE) has been established in October 1962, and the number of listed companies exceeded 205 in February 2015, 142 are non-financial firms, and 63 are financial firms (Kuwait Stock Exchange, 2015). In 1991, the KSE required all listed firms to be compliant with International Accounting Standards (IAS) and International Financial Reporting Standards (IFRS) (Warf & Vincent, 2007). In this regard, Gerged et al. (2017) argue that the increasing trend of CED in the Arab MENA emerging markets, including Kuwait, is attributed to the implementation of IFRS that enforced by the stock exchanges in order to attract more inwards foreign investments, particularly after the global financial crisis and the fall of oil prices (Lyra et al., 2017). Therefore, the significance of this study stems from the environmental challenges that are facing Kuwait as an oil-reliant economy coupled together with the newly enacted environmental laws and regulations that have led to cost increases on companies which might have either stimulated managers to manipulate their earnings numbers to display a financial distress (See Patten and Trompeter, 2003), or motivated them to be ethical, honest, and trustworthy (See Kim et al., 2012).

In this regard, the regulatory role in Kuwait has been active in addressing environmental violations and enforcing environmental compliance. For instance, based on the Act No. 210 of 2001, the Public Authority for Environment (PAE) was established to preserve the environment from pollution that caused by companies' operations (Public Authority for Environment, 2017). Similarly, the Environmental Protection Law No 42/2014 provides a guideline for improving the environmental management and accounting procedures in Kuwait. Additionally, by the Environmental and Social Impact Assessment System (ESIA) in Kuwait, listed firms are voluntarily required to disclose the assessment of the impact of their economic activities on the environment and the society at large (Environment Public Authority Planning & EIA Department, 2016). These increased environmental-related regulations could impose substantial cost increases on environmentally-sensitive firms in Kuwait. Given this probability, corporate managers might have had a motivation to portray a financial vulnerability image by decreased disclosed earnings (Patten and Trompeter, 2003). On the other hand, Kim et al. (2012) argue that social and environmental regulations seemed to be motivating managers to be ethical, honest, and trustworthy where companies with higher social and environmental performance are categorised with more transparent financial reporting practices to serve the interests of their stakeholders as well as to legitimise their activities. However, due to expected variations in CED levels, the magnitude of earnings manipulation may be projected to vary

(Blacconiere and Patten, 1994). This study, therefore, explores the expected effects of environmentally-related disclosures on earnings quality in the context of Kuwait, specifically.

Using a set of dynamic panel data techniques, such as a fixed-effects model, a two stage-least squares (2SLS) model, and a generalised method of moment (GMM) model, the results of this study show that the environmentally responsible companies are less likely to be engaged in earnings management practices. In other words, our analysis suggests a significant negative association between CED and EM in the context of Kuwait. Our findings indicate that CED might have played a significant role in limiting earnings management practices in Kuwait. This implies that companies tend to be more conservative in accounting decisions by providing more transparent and accurate financial information along with better reported environmental information to be perceived as ethically responsible as a method to legitimise their activities and to decrease the possibility of any formal or informal actions that could be imposed upon their companies.

### **Literature Review and hypotheses formatting:**

As suggested by Healy and Wahlen (1999), earnings management occurs when “managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers” (p. 386). Several motives have been introduced in the literature for corporate earnings management practices such as equity offerings (Teoh et al., 1998), avoidance of possible regulatory interference (Adiel, 1996; Collins et al., 1995; Jones, 1991), meeting analysts’ forecasts (Kasznik, 1999; Robb, and Payne, 1997), and/or to achieve specific contract-related objectives (Abarbanell and Lehavy, 1998). Prior studies that examined the contract-based motives of earnings management practices have typically focused on investigating earnings management activities related to contracts specifying executive compensations, and firm’s debt covenants. Dechow and Sloan (1991); Healy (1985) and Holthausen et al. (1995), for example, have found evidence suggesting that managers do manage earnings in order to increase their overall executive compensation plans. Nevertheless, DeAngelo et al. (1994) DeFond and Jiambalvo (1994) Sweeney (1994) argue that a firm’s management may tend to manage the reported earnings to avoid the violation of its debt covenants.

Companies might use the disclosure of environmental information as a means for influencing the stakeholders’ perceptions regarding their corporate ethical behaviour, and for strengthening

their public image (Dowling and Pfeffer, 1975; Deegan, 2002; Hooghiemstra, 2000). In this sense, Gray (2005) suggests that companies disclose their environmental information in the annual reports mainly to signal the quality of their management to the different constituencies in the stock market. In particular, managers try to demonstrate their capability of dealing with the different kinds of social and environmental risks that associated with firms' economic operations. Although CED practices are meant to promote the firm's accountability to its stakeholders and to ensure the sustainability of business development, prior empirical evidence argues that firms may use CED practices as a tool to reduce conflicts of interest between firm's management and its shareholders (Jensen, 2001; Goss, and Roberts, 2011; Harjoto and Jo, 2011; Harjoto, 2017), and to divert public attention from their manipulation of reported earnings (Sun et al., 2010) and any other types of unethical practices (Chih et al., 2008).

The rationale for the relationship between earnings management and corporate environmental disclosure stems mainly from three theories; stakeholders' theory, agency theory, and legitimacy theory. Stakeholders theory, for instance, suggests that corporate management take stakeholders' goals into account in the decision-making process (Jensen, 2001), therefore, managers tend to refrain from engaging in any socially undesirable practices, such as earnings management, along with demonstrating an environmentally responsible image for their companies in order to avoid potential conflicts and disputes with stakeholders (Kim et al., 2012). This means that environmentally responsible companies are likely to be reporting more accurate earnings figures to manage the expectations of their stakeholders. Agency theory, on the other hand, proposes that the information asymmetries related to the principle-agent relationship provide an opportunity for managers (the agents) to engage in opportunistic behaviours to serve their private interests, not the principal (stakeholders) interests (Koch and Schmidt, 2010; Kruger, 2015). Prior research (e.g., Zahra et al., 2005; Desai et al., 2006) also suggests that corporate earnings manipulation may trigger some negative consequences to management, such as penalties that could be imposed by shareholders, employees, the market, and/or the public on those managers who are engaging in this kind of practices. In an effort, therefore, to mitigate such potential adverse penalties, managers tend to compensate these groups through increasing the quantity and the quality of the disclosed environmental information (Prior et al., 2008; Gargouri et al., 2010). In other words, companies characterised by less aggressive accounting practices such as EM are more likely to environmentally responsible. Additionally, legitimacy theory maintains that firms should conduct their operations in accordance with the norms and expectations of the surrounding society

(Lindblom, 1993). Notably, firms engage in a number of environmental activities and use several strategies in order to obtain legitimacy. Based on the perspective of legitimacy theory, a firm's engagement in social and environmental reporting practices can be associated with better-reported earnings as a strategy by which this firm can influence the perception of society towards a favourable image. Drawing on Sun et al. (2010), we adopt a similar multi-theoretical framework employing an agency theory, a stakeholder's theory, and a legitimacy theory to interpret the CED-EM nexus.

Prior et al. (2008), for example, is among the earliest studies that investigated whether social and environmental activities are used strategically by managers to hide their earnings management practices. Using a sample of 593 firms from 26 countries their results revealed a positive relationship between social and environmental activities and earnings management practices. They conclude, accordingly, that social demands for firms to devote more financial resources for social and environmental activities may lead to higher earnings management practices, and hence can be damaging to firms' long-term wealth. Chi et al. (2008), nevertheless, performed a similar investigation and found that social and environmental activities are associated with a fewer earnings smoothing, reduced earnings losses avoidance, and higher earnings aggressiveness. Likewise, Hong and Anderson (2011) used a sample of US non-financial firms to examine the relationship between CSR and earnings management. Their results showed a negative relationship between a firm's CSR activities and earnings management. Strikingly, Yip et al. (2011) report mixed results when they have investigated the CSR-EM nexus using a sample of US-listed companies from both the food industry and oil and gas industry. In particular, although they found a positive relationship between CSR and EM in the food industry, it was significantly negative in the oil and gas industry. They interpreted their result as a proof that the CSR-EM connection is affected by the political environment in which the firm operates. Kim et al. (2012) further investigated the CSR-EM nexus, and they found that firms that appeared to be engaged in earnings management practices have exhibited lower levels of CSR, including CED practices. Specifically, their results show that socially and environmentally responsible firms are less likely to engage in discretionary accruals-based earnings management, and are less likely to be a subject of investigations by the Securities and Exchange Commission (SEC). Relatedly, Pyo and Lee (2013) used a sample of companies listed on the Korean Stock Exchange to examine the relationship between the level of CSR disclosure and earnings quality. Their results show that firms with higher CSR activities (i.e., corporate donations) have less discretionary accruals and more accounting conservatism. More

recently, Liu et al. (2017) used a sample of 500 companies to examine the impact of family involvement in corporate ownership, management, and/or governance upon the association between the disclosure of CSR activities and earnings management. The results indicated an insignificant relationship between CSR disclosure and earnings management when family involvement is accounted for. Similarly, Jordaan et al. (2018) examine the CSR-EM nexus in South Africa. Their findings suggest that companies characterised with better CSR performance are highly likely to be engaged in EM. This implies that managers are over-investing in their social responsibility practices to cover up any misconduct, and to avoid any undesirable scrutiny from shareholders. Likewise, Shafai et al. (2018) conclude that corporate managers in Malaysia have employed CSR as an administrative entrenchment strategy against the managerial discretions cost, that is earnings management.

Studies examining the relationship between CED, as one of the CSR activities, and earnings management are relatively few. For example, Patten and Trompeter (2003) were among the first to examine the CED-EM relationship. They used data related to a sample of 40 US chemical firms to examine the relationship between CED and earnings management. They found evidence that firms with higher levels of CED took less negative discretionary accruals, suggesting that managers believe that CED can be used as a tool for reducing firm's exposure to political and social pressures. In addition, using a sample of 245 non-financial firms from the UK market, Sun et al. (2010) have examined the relationship between CED and earnings management and found no significant evidence of such a relationship.

In brief, studies examining the relationship between earnings management and CSR disclosure are relatively few. Noticeably, the investigation of the relationship between EM and CED is rare. The review of previous related research shows that empirical results documented about this relationship are still mixed. On the basis of the perspectives of stakeholders theory and legitimacy theory, prior empirical evidence (e.g., Hong and Anderson, 2011; Kim et al., 2012; Cho and Chun, 2015) suggested a negative relationship between the level of firm's engagement in social and environmental reporting activities and earnings management. In other words, earnings manipulation might trigger some negative consequences for managers that could be enforced by stakeholders (Prior et al., 2008). So, managers attempt to mitigate these expected penalties and to compensate those powerful stakeholders by the disclosure of their environmental information along with accurate earnings numbers in corporate annual reports as a tactic to be seen as ethically responsible (Gargouri et al., 2010). Accordingly, the primary hypothesis to test in the present study is:

*Ha: Companies with higher levels of corporate environmental disclosure are more likely to be less engaged in earnings management practices in a sample of listed firms on the Kuwaiti stock exchange.*

Regarding the calculation of the quantity of CED practices, both un-weighted and weighted disclosure indices have been used. Previous experience suggested a substantial variation between the outcomes gained from constructing unweighted and weighted disclosure indices (Naser & Nuseibeh, 2003). In contrast, others argued that the use of un-weighted and weighted records for the reported environmental items in annual reports could create slight or even no differences to the finding (Robbins & Austin, 1986). Drawing on Cooke (1992); and Ahmed & Courtis (1999), we have constructed both weighted and un-weighted environmental disclosure indices. We argue, therefore, that the CED-EM nexus is less likely to be affected by the weighting process of the environmental categories that included in our study (see research design). Accordingly, the central hypothesis could be divided into two sub-hypotheses as follows:

*Ha-1: Companies with higher CED practices, i.e., proxied by an un-weighted environmental disclosure index, are having a lower tendency to manage their reported earnings in Kuwait.*

*Ha-2: Companies with higher CED practices, i.e., proxied by a weighted environmental disclosure index, are having a lower tendency to manage their reported earnings in Kuwait.*

The next section, i.e., research design, aims to achieve three goals. First, it discusses data collections issues and sampling criteria. This section, then, explains how the research variables have been measured. Finally, it presents and justifies the statistical techniques that have been employed to conduct the empirical investigation in our paper.

## **Research design**

### *Data and sample considerations*

The population of this research is based on all non-financial firms listed on the Kuwait stock exchange, with complete data for the years from 2010 to 2014. Crucially, the financial companies were excluded from our sample for many reasons. For example, the financial companies predominantly have an indirect impact on environmental issues (Thompson & Cowton, 2004). Similarly, the financial sector is heavily regulated, which might heterogeneously affect its financial performance and disclosure practices (Huang & Wang, 2015). Additionally, excluding such sector is consistent with prior literature which mainly

adopted a similar strategy (Haniffa & Hudaib, 2006). The focus of this study, therefore, will be upon industrial and services companies.

Given that size has been shown to be associated with CED in the past, the sample of our study was stratified into larger and smaller (listed) companies, using the same method as Ntim (2016) and Gerged et al. (2017). The final sample consisted of 300 observations<sup>1</sup> (60 company, representing 42.25% of the overall population of non-financial companies in Kuwait which is statistically acceptable) over a 5-year period. To investigate the research questions, different datasets have been combined. The predictor variable, outcome variable and controls have been mainly collected from companies' annual reports that published on the official website of the Kuwaiti stock market, supplemented with Trade Mubasher Database, and Perfect Information Database.

### Measures

Table 1 explains how each variable has been operationally defined. In examining the research hypotheses, we divide our work into three stages. First, this study measures CED levels in corporate annual reports among Kuwaiti listed firms from 2010 to 2014 using both un-weighted and weighted disclosure indices. Second, it measures the incidence of earnings management practices in our sample during the period of study. Third, the present paper investigates the relationship between CED and EM using a fixed-effects estimation to test the main hypotheses, and other dynamic panel data techniques, i.e., 2SLS and GMM to address any concerns regarding the potential existence of endogeneity problems.

We adopt the same environmental disclosure index (EDI) that has been recently developed by Gerged et al. (2017). This index was developed to provide a comprehensive analysis of CED in the MENA region which includes several sub-regions among which is the GCC region. We do believe, therefore, that this extended EDI could offer a detailed measurement to CED in the GCC region (see Gerged et al., 2017). The adopted EDI consists of a total of 55 environmental items in the index. These items were divided into five main categories have been differently weighted as follows: environmental policy (five items), pollution by product and process (22), energy (10), financial (seven) and other environmental items (11).

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<sup>1</sup> The data has been manually collected for CED, earnings management, and firm-specific characteristics from annual reports which consumed a long time and needed a great effort. Creating a non-existent dataset about CED-EM nexus in Kuwait is considered one of our contributions to the literature.

The mainstream of literature tends to rely on discretionary accruals to measure earnings management in both developed and developing countries (e.g., Bona-Sánchez et al., 2011; Choi and Pae, 2011; Cohen and Zarowin, 2010; Ettredge et al., 2010; Guthrie and Sokolowsky, 2010; Hazarika et al., 2012; Joubert and Fakhfakh, 2012; Kang et al., 2011; Lee and Masulis, 2011; Rodríguez-Pérez and Van Hemmen, 2010; Sun et al., 2011; Wilson and Wang, 2010; Wilson and Wu, 2011; Pelucio-Grecco et al., 2014; Lakhali et al., 2015). We, therefore, detect earnings management in Kuwait by discretionary accruals estimated employing the model of Kothari et al. (2005). This model uses the same drivers as the Modified Jones model (i.e. revenues and gross property, plant and equipment's) to estimate non-discretionary accruals and consequent residuals. However, Kothari et al. (2005) emphasised that the Modified Jones model is likely to display an increase in discretionary accruals when the company is growing. Thus, Kothari et al. (2005) include the ROA in order to control for extreme operating performance. The model is estimated cross-sectionally each year. Discretionary accruals are the residuals of this accrual expectation model. Consequently, the calculation of earnings management practices is specified as follows:

$$\frac{TACC_{it}}{TA_{it-1}} = \alpha_0 + \beta_1 \frac{1}{TA_{it-1}} + \beta_2 \frac{\Delta REV_{it} - \Delta REC_{it}}{TA_{it-1}} + \beta_3 \frac{PPE_{it}}{TA_{it-1}} + \beta_4 ROA_{(it \text{ or } it-1)} + \varepsilon_{it}$$

Where,  $TACC_{it}$  is the total accruals computed as the firm's net income before extraordinary items for the year less cash flows from operations, deflated by firm's end of the year total assets,  $TA_{it-1}$  is the book value of total assets of firm  $i$  at the end of year  $t-1$ ,  $\Delta REV_{it}$  is sales revenues of firm  $i$  in year  $t$  fewer revenues in year  $t-1$ ,  $\Delta REC_{it}$  is the change in accounts receivables.  $PPE_{it} / TA_{it-1}$  is gross property, plant and equipment of firm  $i$  at the end of year  $t$  scaled by  $TA_{it-1}$ ,  $ROA_{it}$  is the return on assets, which is earnings before extraordinary items scaled by lagged total assets,  $\alpha$   $\beta_1$   $\beta_2$   $\beta_3$   $\beta_4$  are estimated parameters, and  $\varepsilon_{it}$  is the residual that represents this study proxy for discretionary accruals. The absolute values of the residuals from this model are used for multivariate analysis.

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**INSERT TABLE 1 ABOUT HERE**  
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Cronbach's  $\alpha$  is considered one of the commonly used methods to assess the inter consistency and reliability of data (Bland & Altman, 1997). An alpha value of 0.7 to 0.8 is considered satisfactory (Bland & Altman, 1997). In this paper,  $\alpha$  value is 0.79 which is indicative of an acceptable reliability level of the adopted environmental disclosure index (EDI).

Additionally, to tackle potential endogeneities connecting to omitted variables, a set of firm-specific characteristics has been employed to control for the relationship between CED and EM in the context of the study (Gujarati, 2003; Wooldridge, 2010). The selected control variables are the firm size (SIZE), leverage (LEV), Tobin's Q (TBQ), sector type (SEC), and audit type (big4). These control variables have been selected to be in line with previous literature (see Crifo & Forget, 2015; Fifka, 2013; Ntim, 2016).

### Analysis

A fixed-effects estimation has been employed to conduct the principal regression analysis in the present study. Applying the fixed-effects model addresses some statistical concerns that cannot be addressed by using an ordinary least squares (OLS) estimation. For instance, it allows to control for any unobservable firm-specific heterogeneities over time that is likely constant, yet might have an effect upon the association between the outcome variable and the predictor (Glass et al., 2015; Ntim and Soobaroyen, 2013) which OLS estimation might not succeed to identify (Gujarati, 2003; Wooldridge, 2010). Therefore, the regression analysis starts with estimating a fixed-effects model which could be specified as follows:

$$EM_{it} = \alpha_0 + \beta_1 EDI_{it} + \sum_{i=1}^n \beta_i CONTROLS_{it} + y_i + \varepsilon_{it}$$

Where EM is earnings management, EDI is an environmental disclosure index, CONTROLS are firm size proxied by total assets (TA), firm value as measured by Tobin's Q (TBQ), leverage which is proxied by debt to assets (DOA), industry type (INDUS), and finally audit type (BIG4).

To examine the appropriateness of applying a fixed-effects estimation rather than a random-effects one, a Hausman test was carried out. The findings confirmed the employment of a fixed-effects estimation and proposed that the un-observed firm-specific variables were insignificantly associated with those of the other companies in our sample.

Arellano and Bond (1991) argued that dynamic panel data techniques might not be estimated reliably by the only use of a fixed-effects estimator since the regressor is, by structure, not

firmly exogenous. Therefore, the current research employs both 2SLS and GMM estimators as robustness analysis to test whether the main findings that obtained from estimating a fixed-effects model have been severely influenced by the potential presence of endogeneity problems or not (Blundell and Bond, 1998).

## **Results and Discussion**

Table 2 presents the descriptive statistics for our variables. Our results indicate substantial variability in the distributional properties of the variables. For example, earnings management proxy (EM) varies from a minimum of 0.02 to a maximum of 0.49, with an average of 0.22. Likewise, a variation has been noted in our results regarding the un-weighted environmental disclosure index (EDI) with a standard deviation of 0.09 and 0.14 mean value. Similarly, the mean value of the weighted environmental disclosure index (WEDI) is 0.19 with 0.10 standard deviations. Our descriptive statistics are in line with prior studies that examined the CSR/CED-EM nexus (See Patten and Trompeter, 2003; Sun et al., 2010; Jordaan et al., 2018; Shafai et al., 2018).

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**INSERT TABLE 2 ABOUT HERE**  
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To test multi-collinearity assumptions, Table 3 below shows the correlation matrix for the variables of the current study. It reports the coefficients of both Pearson (parametric) and Spearman (non-parametric) correlations. The upper right half of Table 3 covers the non-parametric coefficients of Spearman, although the bottom left half shows the Pearson's parametric alternative. The parallel nature of both Pearson and Spearman coefficients suggests that any residual non-normal distribution in our research variables might be mild, and are also similar to those specified by earlier studies (e.g., Cho et al., 2012; Cormier et al., 2004; Lu & Abeysekera, 2014; Webb et al., 2012). Crucially, the magnitude and direction of both Pearson and Spearman coefficients are primarily comparable, thus suggesting that any residual non-normalities are less likely to lead to severe statistical problems in our analysis.

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**INSERT TABLE 3 ABOUT HERE**  
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The main hypothesis in the current paper predicts that a company has a high level of environmental disclosure will be negatively related to earnings management practices in Kuwait. The results are supportive of this hypothesis. In the correlations matrix (refer to Table 3), CED is indeed negatively and significantly related to EM. Likewise, once the fixed-effects model was estimated with the other firm-specific characteristics of interest controlled, this significant and negative association has been confirmed (see Table 4).

As has been mentioned earlier, the applied disclosure index (EDI) is consisting of 55 environmental items which cover five categories. These categories have not been equally weighted<sup>2</sup>. Consequently, this study follows prior studies in constructing a weighted environmental disclosure index (WEDI) in order to examine the robustness of the results that obtained from estimating a fixed-effects model based on an un-weighted disclosure index (EDI) (e.g., Elghuweel, 2015; Ntim, 2009; 2016; Ntim & Soobaroyen, 2013). The results indicate a significant negative relationship between earnings management and environmental disclosure in Kuwait (refer to Table 4). This means that the results of the analyses based on both EDI and WEDI models are considerably similar. This analysis is indicative of robust results based on EDI and WEDI models. This means that weighting the categories that involved in the main disclosure index (EDI) has no significant effect on the relationship between environmental disclosure and earnings management in Kuwait during the period of study. This means that the sub-hypotheses Ha-1 and Ha-2 have been statistically supported.

Collectively, the findings of the current study imply that environmentally responsible companies are less likely to be engaged in earnings management practices. In other words, the concept of firms' accountability means that managers tend not to be involved in any type of unethical behaviour such as earnings management. In this regard, our results are consistent with previous literature that reported a negative and significant relationship between social and environmental disclosure and earnings management (see Patten and Trompeter, 2003; Kim et al., 2012; Pye and Lee, 2013, amongst others). Furthermore, our results recommend that managers of listed companies in Kuwait appeared to employ environmental reporting as a method to decrease the possibility of any formal or informal actions that could be imposed upon their companies (Patten and Trompeter, 2003). Additionally, our empirical evidence is in line with our theoretical framework, where it could be argued that companies with higher levels of CED practices tend to have less negative discretionary accruals, suggesting that the

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<sup>2</sup> Five environmental policy items (9%); 22 environmental pollution items (40%); ten environmental energy items (18%); seven environmental, financial items (13%) and eleven environmental others items (20%).

managers of Kuwaiti listed firms may have used CED as a tool for reducing firm's exposure to political and social pressures.

Remarkably, the role of the Kuwaiti government<sup>3</sup> in the development of corporate environmental responsibility and disclosure has been considerably increased recently with more attention being paid to mandatory environmental-related issues by the enactment of new environmental laws and regulations. For example, in 2014, the Environmental Protection Law No 42 has been enacted to guide Kuwaiti listed companies to improve their environmental management and accounting procedures. Corporate managers, therefore, might try to be compliant with these environmental laws as a tactic to avoid any governmental-related penalties. On the other hand, corporate compliance with these newly enacted environmental laws and regulations might result in cost increases can affect the reported earnings (Patten and Trompeter, 2003). Similarly, earnings manipulation might trigger some penalties could be imposed on companies by powerful stakeholders (Prior et al., 2008). Consequently, corporate managers seemed to disclose their companies' environmental performance along with more accurate earnings figures in an attempt to mitigate these expected penalties as well as to be seen as ethically responsible in order to legitimize their companies' activities in Kuwait (Gargouri et al., 2010).

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**INSERT TABLE 4 ABOUT HERE**  
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Notably, however not the main focus of the study, the control variables (firm-specific characteristics) have various effects on earnings management in that they might have either encouraged or discouraged earnings management practices in Kuwait. For example, firm size as measured by total assets (TA) is positively and significantly associated with earnings management, whereas leverage proxied by debt to assets (DOA) has an insignificant relationship with earnings management in the context of the study.

According to Roberts and Whited (2012), a large number of corporate social and environmental disclosure-related studies did not sufficiently address the concerns of the potential presence of endogeneity problems. This issue can raise concerns related to the validity of the findings of

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<sup>3</sup> The government in Kuwait is considered to be as the main stakeholder or pressure group regarding companies' behaviours and performance (Omran and Ramdhony, 2015).

the regression analysis (Wintoki et al., 2012). Therefore, this study addresses some of these endogeneity concerns using a set of additional tests. These sensitivity investigations have included the estimation of a two-stage least squares (2SLS) model and a generalised method of moment (GMM) model.

The results of applying a 2SLS model as a robustness analysis are supportive of the earlier inferences that obtained from estimating a fixed-effects model, although a degree of sensitivity was found when applying a GMM model. In other words, the results of estimating a GMM model still indicate a negative relationship between CED and earnings management in Kuwait, but at an insignificant level (refer to Table 4).

## **Conclusion**

This paper investigates the relationship between earnings management and corporate environmental disclosure in Kuwait. The main hypothesis is that firms which are environmentally responsible are less likely to be engaged in earnings management practices. For the purpose of this study, the total environmental disclosure was measured using the un-weighted environmental disclosure index. Besides, an alternative Environmental Disclosure Index (WEDI) was constructed, where equal weights of 20% awarded to each category. To capture discretionary accruals as a measure of earnings management, the residuals from the Kothari et al. (2005) model are considered. Using panel data from Kuwaiti public firms over the 2010-2014 period, the empirical results of the present study reveal that corporate environmental disclosure is negatively and significantly related to earnings manipulations through discretionary accruals, supporting, therefore, our prediction in the main hypothesis. The study also has conducted some robustness checks to test the consistency and sensitivity of the main results, in particular, a 2SLS model and a GMM model have been estimated for this purpose. The overall results are qualitatively similar to those reported under the primary analysis.

Our results support the proposition that environmentally responsible firms in Kuwait are less likely to be engaging in earnings manipulation. This means that CED can play a vital role in constraining EM. Crucially, our evidence indicates that environmentally responsible firms in Kuwait appeared to be more conservative in accounting decisions, offering more transparent and accurate financial information in their annual reports. Overall, our findings are in line with Kim et al. (2012) that argue that social and environmental disclosure activities are driven by managers' incentives to be ethical, honest, and trustworthy. This implies that companies with

higher levels of CED are more prudent in financial reporting to serve their stakeholders interests as well as to legitimise their activities.

Our results reiterate the crucial need for a more concerted effort to be undertaken by the Kuwaiti government and national regulatory organisations, such as the Public Authority for Environment in Kuwait, to integrate economic, financial and environmental regulations within company law and listing rules to push listed firms to be more ethically responsible in Kuwait.

Notwithstanding the exertions to ensure the robustness of the results of the current paper, several potential limitations remain. For example, the sample of this study consisted only of 60 listed public Kuwaiti firms. Future work should try to expand the sample to include more firms and sectors. In addition, as in any earnings management study, there is a possibility that some variables suffer from measurement error. In fact, the ability of earnings management proxies to adequately capture earnings manipulations is still questionable. Despite the mentioned limitations, it is hoped the current study will inspire further examinations in this research area. Future research may examine the moderation effect of corporate governance on the CED-EM nexus in Kuwait. Also, our results open an avenue for further investigation of the CED-EM connexion in the GCC region, as a whole.

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**Table 1:**

The operational definitions of independent, dependent and control variables.

<b>Variables</b>	<b>Definitions and coding.</b>
<b><i>Panel A: Independent variables (Corporate Environmental Disclosure)</i></b>	
EDI	The total environmental disclosure score measured by the un-weighted environmental disclosure index.
WEDI	The applied EDI consists of 55 items cover five sub-indices. These indices have not equally weighted. Therefore, to check the robustness of the primary results to the weighting of the five categories of the EDI, we follow previous literature in constructing a weighted index. An alternative Environmental Disclosure Index called WEDI was constructed, where equal weights of 20% have been awarded to each category.
<b><i>Panel B: Dependent variable (earnings management)</i></b>	
EM	Earnings management, measured by the absolute values of the residuals from the Kothari et al. (2005) model.
<b><i>Panel C: control variables (firm-specific characteristics)</i></b>	
FSIZ	Firm size as measured by the natural log of the Total Assets (TA).
LEVER	Profitability as measured by the Debt On Assets (DOA).
TBQ	The ratio of total assets minus the book value of equity plus the market value of equity to total assets.
SEC	Type of sector, measured by a dichotomous procedure (0-1). If a company operating in an industry will score 1 and it scores 0 if it was operating in serves sectors.
Big4	The type of auditor as measured by a dichotomous procedure (1-0). If a firm audited by one of the big4 auditing companies will score 1 and 0 if it is not.

**Table 2:**

Summary descriptive statistics of all research variables for all 300 firm years

Variable	Observations	Mean	Std. Dev.	Min	Max
EM	300	00.22	00.10	00.02	00.49
EDI	300	00.14	00.09	00.04	00.38
WEDI	300	00.19	00.10	00.08	00.41
TA	300	18.59	02.59	14.94	22.13
TBQ	300	01.04	00.71	00.37	04.49
DOA	300	00.43	00.39	00.01	01.09
BIG4	300	00.50	00.50	00.00	01.00
INDUS	300	00.65	00.48	00.00	01.00

Note: Table 1 completely defines all the variables employed in this study.

**Table 3**

Pearson and Spearman correlation matrices of the research variables for all 300 firm years

	EM	EDI	TA	TBQ	DOA	INDUS	BIG4
EM		-.038*	-.034*	-.071	.150	-.093	.123
EDI	-.038**		.699**	.124	.289**	.444**	.426**
TA	-.034	.699**		-.104	-.124	.113	.283**
TBQ	-.071	.124	-.104		-.163	.190	.121
DOA	.150	.289**	-.124	-.163		.169	.121**
INDUS	-.093	.444**	.113	.190	.169		-.105
BIG4	.123	.426**	.283**	.121	.421**	-.105**	

**Notes:** the bottom left half of the table shows the parametric correlation coefficients of *Pearson*, although the upper right half of the table shows the non-parametric correlation coefficients of *Spearman*. \*\*, \* denote correlation is respectively significant at the levels 1%, and 5%. The variables are wholly defined in **Table 1**.

**Table 4:**

The relationship between earnings management and corporate environmental disclosure in Kuwait

(Models)	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Fixed-Effects EDI	Fixed-Effects WEDI	2SLS EDI	2SLS WEDI	GMM EDI	GMM WEDI
EDI	-0.850*** (0.210)	-	-0.427* (0.255)	-	-0.324 (0.243)	-
WEDI	-	-0.778*** (0.195)	-	-0.478* (0.284)	-	-0.374 (0.275)
TA	0.208*** (0.0577)	0.203*** (0.0576)	0.00929 (0.00664)	0.0109 (0.00744)	0.00659 (0.00654)	0.00807 (0.00746)
TBQ	0.00690 (0.0113)	0.00440 (0.0113)	-0.00915 (0.00912)	-0.0109 (0.00926)	-0.0150* (0.00841)	-0.0162* (0.00876)
DOA	-0.00119 (0.0524)	0.00689 (0.0525)	0.0194 (0.0259)	0.0259 (0.0277)	0.0133 (0.0240)	0.0191 (0.0267)
INDUS	0.0149 (0.0996)	1.27e-05 (0.0992)	0.00769 (0.0226)	0.0176 (0.0269)	0.00154 (0.0205)	0.00999 (0.0255)
BIG4	-0.0909 (0.0986)	-0.0908 (0.0987)	0.0102 (0.0209)	0.00978 (0.0204)	0.00872 (0.0150)	0.00863 (0.0148)
Constant	-3.482*** (1.069)	-3.361*** (1.065)	0.917 (0.108)	0.899 (0.109)	0.140 (0.107)	0.135 (0.109)
Observations	300	300	300	300	255	257
R-squared	0.20	0.21	-	-	-	-
Number of Firms	60	60	60	60	-	-

**Note:** The primary investigation method in this study is a Fixed-Effects estimation. The robustness tests that employed to deal with the expected endogeneity problem are 2SLS and GMM. The variables are entirely defined in Table 1.

Standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1