

Article

Environmental Accountability Practices of Environmentally Sensitive Firms in Ghana: Does Institutional Isomorphism Matter?

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Abstract: Operational activities of firms accumulate over time and adversely impact the environment, which, in turn, threaten the earth's ecosystem and sustainable development agendas. Both internal- and external-specific pressures may play a crucial part in a firm's decision to conform to environmental accountability practices (EAP). This paper examines the associations between institutional isomorphic forces and EAP among environmentally sensitive firms in Ghana. A representative sample of 166 environmentally sensitive firms were randomly selected and included in this study. A structured questionnaire was used to obtain relevant data for the analysis. Multiple regression models estimated the hypothesized crude and adjusted associations between EAP and isomorphic factors (mimetic, normative and coercive pressures). Initial adjustment with the isomorphic factors revealed significant associations of mimetic pressure which arises when companies engage in competition seeking superior performance and normative force with EAP but not coercive. A further control for the firm's characteristics found a strong association of normative pressure with EAP. The findings suggest that mimetic and normative pressures may be essential in an attempt to stimulate EAP among environmentally sensitive firms in Ghana. Our results are broadly consistent with the predictions of institutional theory as it applies to EAP. Efforts to ensure environmental reporting among firms should strengthen normative and mimetic forces, particularly in the low- and middle-income settings.

Keywords: natural environment; institutional isomorphism; mimetic pressure; normative pressure; environmental accounting practice; sustainable development; low- and middle-income countries; Ghana



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1. Introduction

The desire for countries to industrialized, coupled with the profit intentions of firms at the expense of the physical environment, has contributed immensely to the continuous degradation of the environment [1]. The effects as we see today are global warming, depletion of natural resources, the incessant pollution of the natural environment, and other environmental issues which threaten the sustainability of the earth's ecosystem [2]. For example, Landrigan et al. (2017) [3] submit that the lethal effect of environmental pollution causes more mortality issues worldwide than other well-known causes, such as malaria, accidents, and alcohol. Albeit the deleterious effect of environmental pollution is widely recognized, the Health Effects Institute (2019) [4] suggest that 91% of the entire global population are exposed to its effects. This makes environmental pollution a major threat to life sustenance. The situation is not too different in Ghana as the country continues to suffer the effect of environmental destruction, which has largely been attributed to firms' operational activities. The WHO (2018) [5] has attributed 22,000 premature deaths annually to air pollution, while most of Ghana's water bodies have been contaminated with

cyanide. These environmental sustainability issues have instigated the increased demand for environmental accountability practice (EAP), as societal environmental consciousness in recent times has also increased [6]. To ensure environmental accountability, firms are expected to provide justification for their actions and decisions that impact on the natural environment. This is achieved when firms report on their environmental performance to stakeholders, giving them the opportunity to evaluate the firm's environmental assertions, and also sanctioning their operational activities or otherwise [7,8].

In response to the increase in demand for firm EAP, firms have begun to augment their annual financial report with an environmental report. This report, which is often integrated into the reporting entity's financial statement or as a standalone environmental report in the annual report of the firm, is mainly on the firm's environmental performance [9]. According to Gray, Owen, and Adams (1996) [8], EAP involves the disclosure of information on firms' environmental activities to those who may be affected by such firms' environment impacts. EAP provides opportunity to stakeholders to react and exert pressure on firms to act sustainably if their expectations concerning the firm's environmental performance are not met. To this end, the environmental report has become a major factor considered by some salient stakeholders when taking economic decisions [2,10–12]. Alrazi, Villiers, and Staden (2015) [2] argue that without environmental accountability, society may not be aware of the extent to which firms are affecting the environment and, therefore, may not be able to exert the necessary pressure to influence firms' action and behavior towards environmental sustainability. This makes the role external pressure plays in ensuring a change in firms' behavior towards EAP cannot be discounted [13,14].

However, the intense pressure on firms to engage in EAP seems to have yielded a less significant result, since most studies have found EAP low, especially among developing countries including Ghana. Hence, the question of how to influence firms to be committed to EAP continues to agitate the minds of policy makers and academics alike. The institutional theory of isomorphism has been used to explain factors that drive firms to engage in behavioral change, mostly in terms of structure and practice. Propounded by DiMaggio and Powell (1983) [15], the institutional theory of isomorphism is the constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions. Therefore, the pressure to conform can induce firms to act in a similar manner. The question is, does institutional isomorphism play a role in firms' EAP in Ghana? Using the institutional theory, this study seeks to answer the question posed above.

Unlike corporate financial accountability, which is a mandatory practice in most countries across the globe, EAP is often voluntary among developing countries. Prior studies have established that the level and extent of corporate social responsibility disclosures between developed and developing countries are different, with developing countries lagging far behind their developed counterparts [16,17]. In the case of most developed countries, the systems and structures meant to push firms to engage in EAP have been instituted and functioning [18,19]. This is often not the case among developing countries, which creates a gap in the literature. The voluntary nature, coupled with the hesitancy to adhere to regulations among firms in developing countries, especially Ghana [20–25], has also engendered low environmental accountability practices among firms within these countries [26–28], exacerbating the issue of limited literature in Ghana. Similar to other developing countries, most studies conducted in Ghana found EAP to be low. A review of related literature also discovered that most of the studies were carried out within the mining sector [26,29–31]. Consequently, the level of firms' EAP espoused by those empirical studies may not comprehensively represent Ghana's EAP status and this could affect policies directed towards firms' EAP.

The objective of this study is twofold. Firstly, to determine the level of EAP among environmentally sensitive firms in Ghana. Secondly, to examine the extent to which institutional isomorphic factors (mimetic, coercive, and normative) influence EAP of firms in Ghana. This current study goes beyond a single sector by extending the study to all

environmentally sensitive firms in Ghana. Prior studies have explained environmentally sensitive firms as those firms whose operational activities have a major negative impact on the physical environment [32]. Such firms may comprise manufacturing, mining, oil and gas, transport, and energy construction [32–37]. A study of this nature will add to the body of knowledge on institutional isomorphism and EAP of developing countries, particularly Ghana, as the findings will close the gaps in the literature. The findings will also have policy implications at both national and firm levels. The association between the isomorphic factors and EAP will provide more insight to policy makers as to where to commit resources to achieve much-needed environmental sustainability. Contextually, Ghana is having a number of environmental challenges which are creating health-related problems and hindering the country's chances of achieving all the environmentally related SDGs within the stipulated time.

2. Theoretical Background and Hypothesis Development

2.1. Institutional Theory of Isomorphism

The institutional theory of isomorphism suggests that an organization's formal structure can be inspired by the institutional environment within which the organization finds itself [38]. The pressure to meet technical requirements could be a driving factor for organizations to adopt legitimized practices of other organizations. Similarly, adopting the structures and practices of other organizations may also be driven by the need to meet societal expectation, which leads to institutional isomorphism [39]. Conforming to societal expectation provides firms with operational legitimacy, which is a must have for business survival. Institutional isomorphism therefore assumes that organizations seek legitimacy by conforming to a socially constructed environment, thereby making them resemble each other in terms of structure and practice [15]. Given that EAP in Ghana is voluntary, institutional isomorphism becomes a possible means to drive firms to engage in these practices. This makes the institutional theory of isomorphism a perfect interpretive lens for the current research agenda as the study examines EAP among environmentally sensitive firms in Ghana.

As submitted by DiMaggio and Powell (1983) [15], institutional isomorphism refers to a constraining process that influences firms to become similar in terms of institutional structure and practice. DiMaggio and Powell [15] contend that these constraining processes emanate from external environmental factors in the form of mimetic isomorphism, coercive isomorphism, and normative isomorphism. Mimetic isomorphism is a product of the pressure to benchmark other organizations' managerial practices [40]. Coercive isomorphism arises when the pressure to conform is imposed by external authorities, such as regulatory bodies. Normative isomorphism, on the other hand, is the pressure to conform to standards, norms, values, or cultures and to adopt systems and techniques considered to be legitimate by relevant professional groupings [41]. Thus, it is imperative to examine the extent to which these isomorphic factors (mimetic, coercive, and normative isomorphism) influence firms' environmental accountability practices in Ghana as means to ensuring environmental sustainability.

2.2. Mimetic Isomorphism and EAP

Mimetic isomorphism is driven by uncertainties surrounding a particular organizational practice and the desire for firms to advertently or inadvertently emulate legitimized practices from firms which are perceived to be doing well in that field of practice [42]. The uncertainties usually happen when the practice is at its formative stage and emerging with a lot of ambiguities within the environment [43]. Mimetic isomorphism becomes institutionalized when the best practices of other firms are accepted because of their institutional acceptance. As indicated earlier, EAP among firms in developing countries is not as established as those in developed economies. As a result, firms who are under pressure to engage in the practice for legitimacy reasons are more likely to copy firms who are already considered successful in EAP. Thus, the study hypothesized that:

Hypothesis 1 (H1). *There is a significant positive relationship between mimetic isomorphism and EAP of environmentally sensitive firms in Ghana.*

2.3. Coercive Isomorphism and EAP

In coercive isomorphism, a firm's adherence to EAP may be influenced by an external authority, particularly due to a disproportionate power relationship between the firm and the authority that wields the power. The desire to conform to the pressure exerted by the external authority is driven by the need to maintain or achieve operational legitimacy [16]. Coercive pressure may occur when firms are ordered to adopt or conform to certain practices [15]. The source of coercive pressure often emanates from government institutions through regulatory bodies. The researchers again argue that pressure from the general public, as well as regulatory pressure, are likely to drive firms in Ghana to engage in EAP. Regulations often come from the government and other governmental agencies which usually determine "the what to do and the what not to do" in a particular field. Non-compliance to the dictates of these regulations from the regulatory agencies can lead to firms facing legitimacy problems. In Ghana, for example, many financial institutions have had their license to operate revoked by the Bank of Ghana, which happens to be the regulatory body for financial institutions. Thus, firms are more likely to adhere to regulatory pressure, hereafter referred to as coercive isomorphism, in order to avoid challenges associated with operational legitimacy. For example, Setyorini and Ishak (2012) [44] found that listed firms in Indonesia respond to regulatory pressure. Similarly, Qu et al. (2012) found that an increase in voluntary EAP by Chinese firms is associated with coercive pressure. Research from Western and Asian societies also suggest that pressure from regulatory bodies and the general public can potentially influence firms to participate in EAP [44,45]. These studies confirm the possible association of coercive pressure and EAP. This study therefore hypothesized that:

Hypothesis 2 (H2). *There is a significant positive relationship between coercive isomorphism and EAP of environmentally sensitive firms in Ghana.*

2.4. Normative Isomorphism and EAP

Normative isomorphism is the third dimension of institutional isomorphism. Normative isomorphism arises due to professionalization [15]. This is because similar education and training brings to the fore similar professional values considered appropriate for professionals to carry into organizations and induces similar organizational practices by firms within the same environment [39]. Organizations often apply strategies and policies promoted by professionals [41,46]. Suchman (1995) [47] submits that the pressure to engage in what is widely considered to be the appropriate course of action is a normative pressure. The researcher further argues that firms adhere to norms and shared values developed by professional associations or industrial networks for which they are affiliated with [48]. This is the case when the norm or shared value is endorsed by the group or the professional association as the ethical thing to do. This form of compliance has been described as a normative isomorphic pressure [49].

In Ghana, for example, the Institute of Chartered Accountants (Ghana), educational institutions, or the Association of Ghana Industries may have influence on the way firms respond to environmental concerns. Ball and Craig (2013) [50] submit that the ethical values and ecological thinking of professional institutions and business associations are good enough to induce firms to a change (including accounting change) that may lead to sustainability. Prior studies have also documented evidence of a relationship between normative pressure and EAP [51]. Normative pressure was found to be significant in influencing sustainability reporting in Malaysia [48]. Similarly, Nyahas et al. (2017) [51] found a positive relationship between normative pressure and environmental disclosure. Thus, this study hypothesized that:

Hypothesis 3 (H3). *There is a significant positive relationship between normative isomorphism and EAP of environmentally sensitive firms in Ghana.*

3. Methodology

3.1. Sample and Sampling Procedures

The study population included all environmentally sensitive firms in Ghana. This is consistent with the objective of the study which is to examine the relationship between the three dimensions of institutional isomorphism and environmental accountability of environmentally sensitive firms in Ghana. The choice for environmentally sensitive firms in Ghana was influenced by the fact that such firms have greater negative impact on the natural environment [52]. A sample frame of 224 firms sourced from the Ghana Chamber of Commerce, Minerals Commission Ghana, the Petroleum Commission Ghana, and the Ghana Stock Exchange website, was constructed for the study. The selection of the firms was based on:

- I. The firm must belong to those generally classified as environmentally sensitive firms.
- II. The firm must have a published audited financial statement for the year 2018.

Table 1 represents the sampling frame constructed based on the target population categorized into the various sectors.

Table 1. Sector representation of the sample frame.

Industry Categories	Valid N	%
Mining	37	27.78
Construction	19	13.49
Energy, Oil, and Gas	32	3.17
Manufacturing	129	52.78
Transport	7	2.78
Total	224	100

Source: Ghana Chamber of Commerce, Minerals Commission Ghana, the Petroleum Commission Ghana, and the Ghana Stock Exchange website, 2019.

Initial contacts were made through the telephone with respondents who were briefed about the nature and purpose of the study and were assured of the confidentiality of their data. This was conducted over a one-month period, between July and August, 2020. The purpose of the telephone contact was to ascertain the willingness of the potential firms to participate in the study. A pilot test of the survey instrument was administered to 10 purposively selected respondents from all the sectors to confirm face validity and understanding of item statements, and the results were favorable. The final instrument was administered to the remaining 214 respondents through face-to-face administration using both self-administered and interviewer-administered procedures. The actual data collection spanned a period of six months, beginning on 5 September 2020 to 11 December 2020. Altogether, 169 of the potential participants who agreed to participate ultimately responded with complete and required information. Thereafter, three questionnaires were not used due to missing responses for key questionnaire items. Therefore, a total of 166 adequately filled questionnaires were considered for the subsequent stage of data analysis. This meets the minimum required sample size for a population of 224 for a categorical estimand, margin of error of 0.05, and 95% confidence level [53].

3.2. Measurement of Variables

3.2.1. Institutional Isomorphism

This was the key exposure variable in this analysis and the measures were a set of three dimensions that are sensitive to firms' decisions, operational activities, and practices—mimetic, coercive, and normative factors.

Mimetic isomorphism was operationalized as the pressure to copy legitimized practices of other firms in the face of uncertainties. Respondents were asked to indicate the extent to

which their firm's decisions (in the face of uncertainties) in terms of practice and structure were influenced by: (a) strategy of industry leaders, (b) strategy of industry peers, and (c) strategies of their competitors. Each of the three items were scored on a five-point Likert scale ranging from 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often. In this analysis, a cumulative and continuous count of mimetic isomorphic factors was created, with a higher score reflecting a higher/stronger mimetic decision. The mimetic isomorphic decision in this analysis has moderate validity and internal consistency with Cronbach's $\alpha = 0.69$.

Coercive isomorphism was conceptualized as the pressure emanating from dominant stakeholders which compels firms to change their behavior and practice to that acceptable by those exerting the pressure. Respondents were asked to indicate the extent to which their firm's operational activities were influenced by (a) EPA Ghana, (b) Ghana Stock Exchange, and (c) other industry-specific regulatory bodies. The responses were measured on a five-point scale ranging from 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often. A scale variable was obtained, with a higher score indicating a higher coercive isomorphism. This variable has good validity and internal consistency with Cronbach's $\alpha = 0.71$.

Normative isomorphism was defined as the pressure from a professional body, institution, or a professional association the firm or its key personnel are associated with, to engage in legitimized practices. Participants indicated the extent to which each of the following items related to their firm: "Our staff are encouraged to (a) adhere to professional codes of ethics of their respective professions, (b) our industrial association emphasizes adherence to professionalism, and (c) our organization considers professional qualification in their recruitment policy". The response options included a five-point scale: 1 = never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often. We created a composite variable for normative isomorphism, with higher scores suggesting higher coercive isomorphism with good validity and internal consistency (Cronbach's $\alpha = 0.77$).

3.2.2. Environmental Accountability Practice (EAP)

EAP was assessed through a list of seven domains based on an environmental disclosure index (EDI): Governance Structure and Management Systems (maximum score is 6), Credibility (maximum 10), Environmental Performance Indicators (EPI) (maximum score is 60), Environmental Spending (maximum score is 3), Vision and Strategy Claims (maximum score is 6), Environmental Profile (maximum score is 4), Environmental Initiatives (maximum score is 6) [54,55]. The EDI used in this study is based on the Global Reporting Initiative (GRI) standard requirements. The GRI is the most widely used and acceptable regulatory guideline for sustainability reporting [56]. The EDI was taken from a similar one developed by Clarkson et al. (2008; 2011) [55,57]. The financial statement of each firm was objectively assessed. All participating firms were assessed on whether they practiced each activity as captured in the EDI (total score range = 0–45). These domains were later classified into hard disclosure (HAD) (score = 0–29) and soft disclosure (SOD) (score range = 0–16). We created a latent variable for EAP, with higher scores suggesting higher levels of EAP with strong validity and internal consistency (Cronbach's $\alpha = 0.96$).

3.2.3. Covariate Variables

Several background characteristics of the firm were controlled due to their associations with EAP and with institutional isomorphism: the type of industry the firm was classified into (*mining/manufacturing/construction/oil and gas/transport*), respondents' position in the firm (*finance manager/accountant/manager/environmental officer*), being a limited liability company (*yes/no*), the extent of government interest in the firm (*less than 50%/50% or more*), and whether the firm has a foreigner as a member of their board (*yes/no*). Other covariates included whether the firm has a subsidiary outside Ghana (*yes/no*), and whether the firm was listed on the Ghana Stock Exchange (*yes/no*).

3.3. Statistical Analysis

The statistical analysis was performed in three phases. First, descriptive statistics were computed to provide a description for the sample. We reported these statistics as mean and corresponding standard deviation for continuous variables or count and percentage for categorical variables. Second, we performed Pearson's correlations of relevant exposure variables and their sub-constructs with the outcome variable, EAP. The p -value was adjusted for the multiple correlations, which can increase the risk of a type I error, i.e., to erroneously conclude the presence of a significant correlation.

Taking into consideration the measurement levels of the key outcome variable of interest, a three-stage multiple linear regression model was built in which the EAP score was regressed on the key explanatory variables to test the specific and crude effect of mimetic, coercive, and normative pressures on the EAP outcome. In the first stage, the unadjusted associations were separately modeled to investigate the specific crude effects of mimetic, coercive, and normative pressures on EAP score. Moreover, we adjusted for the mimetic, coercive, and normative pressures to evaluate the relative effect of these factors. In the second stage, we included the control variables by adjusting for theoretical industry characteristics of interest in each model to further investigate the relative impact of isomorphic factors on EAP. In an additional analysis, we considered regressions for a composite score of the isomorphic factors. Regression coefficients were calculated. In diagnostic evaluation, multicollinearity was checked by computing the variance inflation factor (VIF). In this analysis, all the VIF values were below 1.2, indicating no problems of multicollinearity. All analyses were performed using IBM-SPSS for Windows application (version 23.0; IBM SPSS Inc., Chicago, IL, USA) software and the level of significance was $p < 0.05$ (two-tailed).

4. Results and Analysis

Table 2 shows the descriptive statistics of the firms' characteristics. Approximately 81% of all firms included in the study belonged to the manufacturing industry, whilst 11% were in the mining industry, 4% were in the construction industry, and 2.4% were in both transport and oil and gas industries. The majority of the participants were finance managers (84%).

Ninety-nine percent of the respondents indicated that their company was a limited liability company and about 78% reported that their companies were listed on the Ghana Stock Exchange. The mean EAP score was 17.35 (SD = 21.15) and the overall ISF score was 32.14 (SD = 4.91). The average ISFM indicator was 9.41 (SD = 2.72), that of ISFC was 10.40 (SD = 2.28), and that of ISFN was 12.36 (SD = 2.37).

The reliability measure and the correlation matrix of test constructs of the dependent and independent variables are presented in Table 3. The reliability test for constructs in the present study showed high levels of internal consistency and reliability for EAP and its sub-constructs including the HAD and SOD. The overall ISF was 0.78, and its sub-constructs were ISFM (0.69), ISFC = 0.71, and ISFN = 0.77. These reliability levels were above the threshold recommended by Bryman and Bell (2011) [58], who suggest 0.6 and 0.7 as acceptable Cronbach's alphas.

The nonparametric Spearman's rho correlation coefficient was examined for ISF ($p < 0.05$) and EAP ($p < 0.05$) variables. These variables showed a deviation from the assumption of normality, with the exception of the ISF variable ($p = 0.05$) which was shown to be normally distributed. As shown in Table 3, the Spearman's rho correlation coefficient among the independent sub-construct variables of ISF, including ISFM, ISFC, ISFN, were less than 0.5. Thus, the concern of multicollinearity was not significant, and all the variables were kept in the subsequent regression analyses that involved the three distinct dimensions of ISF. The correlation coefficient between the independent variable ISF and EAP, although significant, showed a weak relationship. Evidently, the two sub-constructs, HAD and SOD, of the dependent variable EAP showed no significant correlation in all but one independent sub-construct ISFN ($p = 0.204$, $p < 0.01$).

Table 2. Industry and firm characteristics.

Variable	N = 166	(%)	Mean	(±SD)
<i>Kind of industry</i>				
Mining	18	11.0		
Manufacturing	132	80.5		
Construction	6	3.7		
Oil and Gas	4	2.4		
Transport	4	2.4		
<i>Position</i>				
Finance Manager/ Accountant	134	83.8		
Manager	26	16.2		
<i>Limited liability</i>				
No	2	1.2		
Yes	164	98.8		
<i>Extent of government interest in the firm</i>				
Otherwise	164	98.8		
Above 50%	2	1.2		
<i>Firm has foreigner as member of the board</i>				
No	62	37.3		
Yes	104	62.7		
<i>Firm is subsidiary</i>				
No	64	38.6		
Yes	102	61.4		
<i>Firm is listed on the Ghana Stock Exchange</i>				
No	130	78.3		
Yes	36	21.7		
EAP			17.35	(21.15)
Hard disclosure EAP			12.63	(17.45)
Soft disclosure EAP			4.72	(4.34)
ISF			32.17	(4.91)
ISFM			9.41	(2.72)
ISFC			10.40	(2.28)
ISFN			12.36	(2.37)

Note: EAP = environmental accounting practice; ISF = institutional isomorphism; ISFM = mimetic isomorphic factors; ISFC = coercive isomorphic factors; ISFN = normative isomorphic factors.

Table 3. Cronbach's alpha and Spearman's rho correlation coefficient.

	α	EAP	HAD	SOD	ISF	ISFM	ISFC	ISFN
EAP	0.96	1						
HAD	0.95	0.916 **	1					
SOD	0.89	0.878 **	0.671 **	1				
ISF	0.78	0.204 **	0.233 **	0.129	1			
ISFM	0.69	0.049	0.077	0.009	0.715 **	1		
ISFC	0.71	0.101	0.137	−0.006	0.597 **	0.112	1	
ISFN	0.77	0.254 **	0.242 **	0.243 **	0.676 **	0.255 **	0.241 **	1

Note: EAP = environmental accounting practice; ISF = institutional isomorphism; ISFM = mimetic isomorphic factors; ISFC = coercive isomorphic factors; ISFN = normative isomorphic factors; HAD = hard disclosure; SOD = soft disclosure. ** $p < 0.01$.

Next, a series of multiple regressions were performed to predict the EAP outcome measures and are presented in Table 4. The first three models introduced the unadjusted associations of the independent variables and the outcome, whilst the fourth model adjusted for the key exposure variables but was independent of the covariates. The results in Model 1 revealed that observing a higher level of ISFM by a firm was significantly associated with increases in EAP ($\beta = 0.861$, $p < 0.005$). Similarly, having increases in ISFN by a firm was significantly associated with increases in EAP in Model 3 ($\beta = 1.704$, $p < 0.05$). The significance persisted in Model 4 after adjusting for the prime independent

variables although with slight changes in the magnitude of the respective effects, whilst the relationship between the ISFC and EAP remained inverse and reached no significance.

Table 4. Isomorphic factors (ISFM, ISFC, and ISFN) on EAP.

Dependent Variable: EMAT	Model 1	Model 2	Model 3	Model 4
	Coefficient	Coefficient	Coefficient	Coefficient
ISFM	0.861 **			0.547 *
ISFC		−0.085		−0.448
ISFN			1.704 *	1.638 *
Adjusted R^2	0.006	−0.006	0.031	0.026
F	2.042	0.014	6.226 *	2.451

Note: EAP = environmental accounting practice; ISF = institutional isomorphism; ISFM = mimetic isomorphic factors; ISFC = coercive isomorphic factors; ISFN = normative isomorphic factors. * $p < 0.05$, ** $p < 0.01$.

Table 5 shows the results of the effect of mimetic, coercive, and normative isomorphic factors on EAP, with further adjustments for the firm characteristics as potential confounders. Model 3 indicated that the ISFN was significantly related to EAP, even after controlling for the firm's characteristics ($\beta = 0.553$, $p < 0.05$). An examination of the covariates showed that firms that had a foreigner on their board of directors ($\beta = 1.544$, $p < 0.05$), and audit ($\beta = 22.195$, $p < 0.001$) were more likely to engage in EAP. Those listed on the GSE had a lower score in the EAP ($\beta = -14.014$, $p < 0.005$).

Table 5. Results of regression analysis for the effect of ISFM, ISFC, and ISFN on EAP.

	Model 1	Model 2	Model 3	Model 4
	Coefficient	Coefficient	Coefficient	Coefficient
Step 1: Potential confounders	✓	✓	✓	✓
Step 2: Main effects				
ISFM	−0.017			−1.121
ISFC		0.460		0.337
ISFN			0.553 *	0.497
Adjusted R^2	0.241	0.274	0.244	0.277
F change	0.001	0.374	0.003	0.304

Note: EAP = environmental accounting practice; ISF = institutional isomorphism; ISFM = mimetic isomorphic factors; ISFC = coercive isomorphic factors; ISFN = normative isomorphic factors. * $p < 0.05$.

An additional analysis was performed to investigate the associations between a composite ISF score and EAP and is presented in Table 6. Model 1 presents the results for all control variables, while Model 2 shows the results of the main effect. ISF was positively related to EAP, albeit the relationships were not robust ($\beta = 0.243$, $p = 0.054$).

Table 6. Results of regression analysis for the effect of composite ISF on EAP.

	Model 1	Model 2
	Coefficient	Coefficient
Limited liability co.	10.989	11.410
Government has interest	8.597	10.674
Foreigner on board	1.768 **	1.544 *
Foreign head office	1.038	0.811
Listed on the GSE	−13.587 **	−14.014 **
Audit	22.498 ***	22.195 ***
ISF		0.207
Adjusted R^2	0.245	0.243
F change	9.939 ***	0.424

Note: ISF = institutional isomorphism. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5. Discussion and Conclusions

Previous research has shown considerable evidence of the associations between specific isomorphic factors and environmental accounting practices (EAP) among establishments at various levels and sizes. However, very few studies included all constructs as a whole and research on this subject is limited in Ghana. Literature on isomorphism has seldom investigated EAP as an outcome of isomorphism. Using institutional theory and current cross-sectional data, this paper examined the degree of the contribution of institutional isomorphic factors on EAP among environmentally sensitive firms in Ghana.

Our findings indicate that higher levels of mimetic isomorphism pressure positively related to promoting environmental accountability among firms. In the present study, the normative pressure was more likely to increase EAP within the context of potential confounders. The robustness of the relationship persisted even after adjustment for key independent variables, viz., the coercive and normative pressures. In addition, after full adjustments for the important characteristics of the firm and all potential confounders, the normative factors were significantly related to EAP with a slight decrease in the effect size, supporting the study's third hypothesis. Thus, among firms that highly experienced the normative pressures in the operational activities, the promotion of EAP was highly upheld. However, whilst the mimetic lost its significance after controlling for the firm's characteristics, the coercive factors did not show any relationship with the EAP altogether. Thus, this study sheds light on the associations of institutional isomorphism and EAP among firms, an under-explored topic in Ghana and many other low- and middle-income countries with meaningful implications for environmental accountability.

The findings imply that firms in Ghana often benchmark other firms that are noted to be the best in terms of engaging in EAP. This may be because EAP is still voluntary, and also emerging. Therefore, there are no specific guidelines that regulate the practice in Ghana. This creates uncertainties among firms, which consequently influences them to imitate other firms who are already practicing EAP and are doing well. The results are consistent with Pfarrer et al. (2005) [59] and Setyorini and Ishak (2012) [44] who observed that in order to achieve operational legitimacy, firms that are not doing well end up adopting similar reporting practices of best-performing firms. This finding is different to Nyahas et al. (2017) [51] who found a less significant association between mimetic influence and voluntary disclosure. Similarly, Welbeck (2017) [60] did not find mimetic pressure to influence corporate responsibility disclosures in Ghana. Welbeck's [60] study was limited to 17 listed firms in Ghana, and this could account for the disparities. Listed firms are more regulated by not only the government agencies but also the Securities and Exchange Commission of Ghana and thus, are more likely to be influenced by these bodies than to be influenced by other firms' behavior. The current study covered all environmentally sensitive firms, listed or not, which may have accounted for the findings.

The present analysis found a significant relationship between normative isomorphism and EAP in Ghana. This finding is not surprising and agrees with a number of previous observations that established strong relationships of normative pressures with EAP in diverse global contexts [60–63]. In the context of Ghana, to a large extent, the preparation of the financial or annual report of the reporting entity rests with the accountant of the entity. These accountants are mostly professionals who have gone through professional training and are guided by the professional rules, norms, and ethical standards associated with their professional bodies. Thus, these professional accountants are more inclined to adhere to standards and norms considered legitimate by their professional associations and groupings. Similarly, this presupposes that decisions and actions by professional associations may likely influence a firm's behavior toward EAP in Ghana.

Our analysis established no significant relationship between coercive pressure and environmental accountability. This finding is consistent with an earlier study reporting no association between coercive pressure and voluntary disclosure among firms in the USA [59]. This suggests that pressure from regulatory bodies, such as the Environmental Protection Agency, the Minerals Commission, and other industry-specific regulators, to a

larger extent, do not influence firm EAP in Ghana. Though this defies consistency with most studies on coercive isomorphism and EAP [16,51], in the context of Ghana, this finding is not surprising, as firms in Ghana have been found to have issues with conforming to regulations, which is mainly due to deficiencies in law enforcement [20–22]. Mere laws and regulations may not exert effective influence without a corresponding appropriate enforcement practice [62,64,65].

Some limitations of the present study should be acknowledged. First, the cross-sectional nature of the data prohibits clear conclusions about directionality and causality. It might be the case that the EAP score could influence any of the isomorphic factors, including the mimetic, coercive, and normative pressures, but this was not captured as an objective of the study. Further research will benefit from the use of longitudinal data and exploring bidirectional relationships between institutional isomorphism and EAP. Moreover, the sample size for this study was not large enough, which could have tempered with the robustness of the finding. However, given that the environmentally sensitive firms who responded to the questionnaires and included in this analysis are not many (approximately 200), our findings will serve as a good snapshot and basis for further research in other low- and middle-income countries, particularly where a larger sample is available. Another limitation might be the measurement of key variables, recall bias, as well as the failure of the respondents to provide credible responses to sensitive issues. These can potentially result in a socially desirable bias and thwart the findings of the study.

Despite these limitations, the current study nevertheless expands previous research and demonstrates the effects of institutional isomorphism (particularly the mimetic and normative pressures) on EAP, a very important but less explored area particularly in Ghana and other low- and middle-income countries. Policy makers and practitioners should be aware of these implications on operational activities of firms in Ghana and beyond. The implications of the current study could also serve as a baseline and guide future research endeavors in similar low- and middle-income countries given that research on this all-important topic is still nascent in these settings.

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