UNIVERSITY OF CAPE COAST

ISOMORPHIC FACTORS IN CORPORATE ENVIRONMENTAL MANAGEMENT ACCOUNTING IMPLEMENTATION AND ENVIRONMENTAL ACCOUNTABILITY IN GHANA

GILBERT KWABENA AMOAKO

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BY

GILBERT KWABENA AMOAKO

Thesis submitted to the Department of Accounting of the School of Business, College of Humanities and Legal Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Doctor of Philosophy degree in Business Administration

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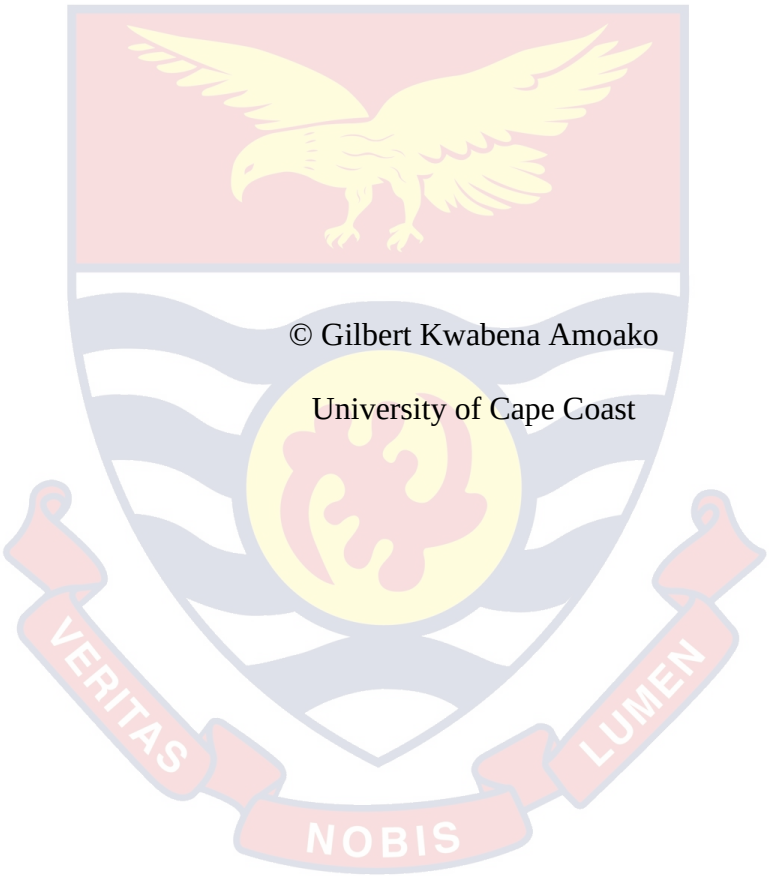

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature…… Date……...

Name: Gilbert Kwabena Amoako

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature ……. Date ……

Name: Prof. Anokye Mohammed Adam

Co-Supervisor's Signature …… Date ……

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ABSTRACT

There is a growing debate on the activities and concomitant environmental effects of environmentally sensitive industries. The concern for firms to report on their environmental impacts is key to environmental accountability practice (EAP) to stakeholders. However, a review of the literature indicates, that there is limited research on how isomorphic factors (ISF) and environmental management accounting techniques (EMAT) impact EAP in sub-Saharan Africa. This thesis examines the inter-relationships between the isomorphic factors, EMAT and EAP among selected environmentally sensitive firms in Ghana. It also evaluates the mediating role of EMAT implementation in the association of ISF with EAP. The theoretical perspectives draw on the Institutional Theory of Isomorphism and the Social Issue Life Cycle Model (SILC). Using questionnaire-based cross-sectional data of environmentally sensitive firms, multiple OLS regression models and mediation analysis, the hypothesised relationships were estimated. The results revealed a significant and positive relationship of mimetic and normative forces with EAP. While coercive and normative factors significantly and positively related with EMAT, EMAT implementation was positively and significantly associated with EAP. Importantly, firms under the commitment phase of the SILT were more likely to engage in EAP. Moreover, EMAT implementation mediated the relationship between isomorphic factors and EAP. Findings are largely consistent with the adopted theoretical predictions and present potential implications for policy makers and professional bodies. Efforts to ensure EAP among environmentally sensitive firms in low and middle level income settings should include strategies to strengthen isomorphic pressures and EMAT implementation.

KEYWORDS

Institutional isomorphism

Environmental accountability

Environmental management accounting techniques

Environmentally sensitive firms

Environmental degradation

Environmental sustainability

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I appreciate the love and the words of encouragement from friends and family, especially my wife Ophelia Buckman, my sister Rose Amoako, my brothers Mark Agyekum, Paul Agyekum, Augustine Agyekum and Yaw Amoako.

DEDICATION

To my mother, Sophia Afiba Gunn

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LIST OF ACRONYMS

EAP	Environmental Accountability practice
EMAT	Environmental Management Accounting Techniques
WHO	World Health Organisation
AIDS	Acquired Immunodeficiency Syndrome
EPA	Environmental Protection Agency
UNDP	United Nations Development Programme
GDP	Gross Domestic product
SDGs	Sustainable Development Goals
EP	Environmental Performance
ER	Environmental Reporting
GHG	Green House Gas
IEE	Isomorphism, Environmental Management Accounting Technique and Environmental Accountability Framework
LMIC	Low- and Middle-Income Countries
IFRS	International Financial Reporting Standards
GRI	Global Reporting Initiatives
NPI	National Pollutant Inventory
CSR	Corporate Social Responsibility
CBA	Cost-Benefit Analysis
SEA	Standalone Environmental Accounting Procedures
AEI	Audits Concerning Environmental Issues
EDI	Environmental Disclosure Index
ISF	Isomorphic Factors
ISFM	Mimetic Isomorphic Factor

ISFC	Coercive Isomorphic Factor
ISFN	Normative Isomorphic Factor
SILT	Social issue life cycle theory

CHAPTER ONE

INTRODUCTION

Introduction

The need for firms to engage in environmental accountability practices (EAP) has been a subject for academic discourse in recent times. The decisions and actions of firms as they pursue high profitability have had serious implications on the natural environment. Environment accountability may equip stakeholders and society in general with the capacity to question these firm decisions and to force them to act sustainably. Though EAP of firms have improved over the years, developing countries lag behind developed countries in that regard. Particularly, most studies on EAP in Ghana have documented low levels of EAP among firms. This is an indication that most Ghanaian firms have not been responsive to the call for EAP as one would expect, which may be a direct consequence of the voluntary nature of EAP in Ghana. This study examines the possibility of using institutional factors and firms' own initiatives such as the implementation of environmental management accounting techniques (EMAT) to stimulate firms' EAP to improve environmental sustainability. Chapter one is focused on a general introduction to the study. It presents the background to the study, touching on the institutional factors, EMAT techniques and EAP of firms. The statement of the problem, purpose of the study, objectives of the study, research questions and hypotheses, significance of the study, delimitation, and the organisation of the study have all been captured. The chapter concludes with a chapter summary.

Background to the Study

Environmentalism has gained prominence lately due to the continuous destruction of the natural environment mainly as a result of decisions and actions of firms (Mousa & Othman, 2019). The negative impact firms' operational activities have on the earth ecosystem is acknowledged globally. Most environmental issues such as climate change, waste production and environmental pollution have been significantly linked to profit-oriented decisions of firms (Welbeck et al., 2017). To a large extent, when firms perceive nature as "free and unlimited", it disregards environmental considerations in favour of profit, which results in the exploitation of the natural environment, including the use of the natural environment as a repository of human-generated waste (Delima & Zaman, 2013). The result is the continuous degradation of the natural environment and pollution, which threatens the earth's ecosystem and life sustenance. For example, environmental pollution is 3 times deadlier than AIDS, Tuberculosis and Malaria combined and yet 91% of all people are exposed to it (Landrigan et al., 2018; WHO, 2018). This increasingly exposes life to risk, and the effect cut across socioeconomic boundaries and race, with the tendency to be worse over time (WHO, 2018). Hence, the need to expedite action on bringing the situation to normalcy has never been felt as it is now.

In Ghana, the raging effect of worsening environment, mostly due to irresponsible operational activities of firms, has greatly been felt. For example, Air pollution accounts for 203 out of every 10,000 deaths and 22,000 premature deaths yearly (WHO, 2018). Most river bodies in Ghana are contaminated with cyanide through the operations of mining firms and illegal

mining activities popularly called “galamsey”. The country’s forest cover has depleted by 50% since independence (Boateng, 2017; EPA 2017) and Ghana’s expenditure on environmental degradation to GDP stands at 9.6% (UNDP, 2018). More importantly, Ghana has stepped up its desire to industrialise, by encouraging investors to set-up more factories across the country to improve the economic situation of the county in a government policy agenda referred to as One District One Factory. However, as it has been mostly observed, there is a trade-off between industrialisation and environmental sustainability, as the environment gets polluted with the exploitation of the natural resources in the pursuit for economic growth (Awan, 2013; Bawua, & Owusu, 2018). Thus, if industrialisation is executed without environmental sustainability in mind, the desire for any country, including Ghana, to achieve the Sustainable Development Goals (SDGs) 3, 6, 7, 13, 14 and 15 in the targeted year of 2030 could be threatened.

This recent interest in environmentalism globally has arisen from specific treaties to combat climate change and to solicit ideas on how to reduce or bring to paucity the deleterious impact of man on the earth ecosystem and its attendant effects on earth ability to sustain life (Bali, 2007; Copenhagen, 2009; Kyoto, 1997; Victor, 2001). These series of conferences have, among other things increased awareness on the effect firms’ decisions and activities are having on the natural environment. Consequently, the general public and stakeholders have intensified their demand for EAP from firms to inform themselves of the concomitant effect of firm activities and decisions that impact on the natural environment (Alrazi et al. 2015; Braam, et al., 2016; Freduah 2014; Qian, Hörisch, & Schaltegger, 2018).

Correspondingly, firms often respond to the call to demonstrate environmental accountability by making voluntary disclosure of the firm's environmental activities in the financial report of the reporting entity or in a standalone environmental report (Braam, Weerd, Hauck, & Huijbregts, 2016).

The need for firms to have a behavioural change is important in this trajectory, since the traditional role of financial reporting has to change to incorporate environmental disclosures if environmental accountability is to be achieved. An institutional theory of isomorphism has been used to explain a change in organisational behaviour in terms of practice and structure. Propounded by DiMaggio and Powell (1983), institutional theory of isomorphism is conceptualised as a constraining process that forces one unit in a population to resemble other units that face the same set of environmental conditions. Carpenter and Feroz, (1992) submit that organizations with similar challenges become interdependently related which often create institutional pressure that restricts their choices in terms of organisational practice and structure while bringing them into a state of isomorphism. The theory, therefore, suggests that firms may succumb to pressure emanating from outside their environment. The question is, is Ghanaian firms' EAP influenced by the institutional theory of isomorphism? Three factors have been put forward by DiMaggio and Powell (1983) as the main isomorphic factors that may drive firms to accept a new practice - mimetic isomorphism, coercive isomorphism and normative isomorphism. In the context of this study, institutional isomorphism is taken to mean those institutional pressure that trigger change in internal behaviour of firms towards convergence to EAP and EMAT implementation by firms (Qu, Cooper, Wise, & Leung, 2012). Mimetic

isomorphism occurs when firms are inclined to adopt the legitimate practices of other firms who are perceived to be doing well in that field (DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

In coercive isomorphism, a firm's conformance to a particular practice may be imposed by an external authority, particularly due to the disproportionate power relationship between the firm and the authority that wills the power (Abdulaziz, Senik, Yau, San, & Attan, 2017). The firms' desire to conform to the pressure exerted by the external authority is driven by the need to maintain or achieve operational legitimacy. Thus, pressure from government institution through regulatory bodies as well as pressure from the general public is key to coercive pressure. Normative isomorphism is as a result of the desire for firms to conform to standards, norms, values or culture and to adopt systems and techniques considered to be legitimate by relevant professional groupings (Perez-Batres, Miller, & Pisani, 2011).

Accountability is the duty to provide an account on activities one can be held responsible for. There are two dimensions to accountability: the responsibility to undertake or not to undertake a certain action and the responsibility to provide an account for those actions (Alrazi, Villiers & Staden, 2015: Gray, Owen & Adams, 1996;). Gray et al. (1996) established that environmental performance (EP) and environmental reporting (ER) together constitute a firm's EAP. Environmental reporting is the means through which a firm's EP is communicated to the general public and other stakeholders (Azzone, Brophy, Noci, Welford, & Young, 1997) in order to gain their support and enhance the firm's environmental reputation (Killic, Kuzey, & Uyar, 2015; Lu, Abeysekera, & Cortese, 2015). Alrazi et al.

emphasised that EP improves environmental sustainability, however, without ER; stakeholders may not be informed on a firm's EP (Massa, Farneti & Scappini, 2015). In the context of this study, EAP is taken to mean the obligation for firms to provide justification for their actions and decisions that affect the natural environment and the opportunity for those affected by the firm's decision and action to evaluate the decisions and actions and provide sanctions if the need be. This justification comes in the form of environmental disclosures incorporated into the ER of a reporting entity. Thus, the terms ER, EP and environmental disclosure shall be classified collectively as EAP.

To the general public, ER demonstrates the firm's commitment to environmental sustainability and fulfils the social contract it has with the firm (Muttakin, Khan, & Azim, 2015). The social contract gives the firm the legitimate right to operate. As explained by legitimacy theory, society grants the firm the right to function the way it does and the firm also has the responsibility to safeguard the interest of the society. This relationship between the firm and the public is what is referred to as social contract and any breach on the part of the firm may cause the firm to lose its legitimacy to operate (Thompson & Zakaria, 2004). ER is seen as a communication strategy used to satisfy the expectation of salient stakeholders in order to enjoy their continuous support (Gray et al., 1995). The need to meet the expectations of the salient stakeholders has also been explained with the stakeholder theory. The theory explains that a firm's success will not only depend on meeting the expectations of its shareholders but also organisations or individuals who may affect or be affected by the firm's operational activities (Freeman, 1984; Gray, 1995).

Sumiani, Haslinda, and Lehman (2007) argue that the ability to develop better supplier relationship, attract ethical investors as well as the ability to gain access to new market, as a result of better EP, is gained as firms engage in voluntary EAP. Good environmental practices reduce costs by cutting business' use of raw materials, energy, water and packaging cost. Other costs in terms of fees and fines may also be avoided since firms will be complying with various environmental regulations as they engage in environmental accountability practices. Simoni, Bini, and Bellucci, (2020) argues that social and environmental report is driven by the need to maintain good relations with its stakeholders, signal their sustainability performance and to gain legitimacy. Thus, apart from ensuring environmental sustainability to the benefit of both current and future generation, a firm that engages in EAP stands to benefit a lot in terms of cost savings and good reputation. Without EAP, firms may slack in their efforts to engage in environmental sustainability practices which may lead to environmental destruction and sustainability challenges.

Environmental management accounting (EMAT) techniques have been found to play a pivotal role in providing relevant data for EAP. Mokhtar (2015) submits that firms that take EAP seriously often implement EMAT to enable them to generate relevant data for the assessment, measurement and reporting of environmental information for both internal and external use. This suggests that, as a matter of consequence, EMAT implementation may prove to be a catalyst for relevant and credible environmental information for EAP. Thus, the role EMAT implementation may play in the relationship between the isomorphic factors and environmental accountability could be critical for

assessing what needs to be done to improve firm EAP. However, the extent to which firms implement EMAT techniques evolves and is also linked to the extent of seriousness a firm attaches to environmental sustainability issues (Mokhtar, Zulkifli, & Jusoh, 2014; Nasi et al., 1997; Zyglidopoulos, 2003). Firms' approach to EMAT implementation is well explained by the social issue life cycle theory.

The theory infers that once a firm integrates its environmental activities into its decision-making process, it sees environmental issues as pertinent and is more likely to give an account of it (Tilt, 2006). The social issue theory postulates that firms' approach to EMAT implementation evolves from three distinct stages: policy, learning and commitment stage (Zyglidopoulos, 2003). At the policy stage, environmental issues are left in the hands of the management to handle. This stage is characterised by management issuing policy statements when there is an environmental issue at hand (Nasi et al., 1997). Nasi et al. (1997) further contend that at the learning stage, the firm hires a specialist to handle and implement the environmental policies of the firm and yet does not incorporate the environmental issues into the firm's decision-making process. Finally, at the commitment stage, the firm sees environmental as ethical and therefore integrates environmental issues in its decision-making process by employing EMAT techniques (Burritt, 2004; Schaltegger et al., 2003). The firm is now more likely to become environmentally accountable at this stage of evolution. Therefore, a firm's commitment to environmental sustainability practice as well as its desire to engage in EAP is likely to be influced by which stage of the social issue life cycle the firm has evolved to. Thus, the question is, which stage of the social

issue life cycle theory does environmentally sensitive firms in Ghana find themselves?

Statement of the Problem

The need to achieve all the environmentally related SDGs is high on the agenda of Ghana. Ghana through the environmental impact assessment agency has introduced several measures to improve firms' EP and subsequently communicate the EP to the general public. One of such measures is the "AKOBEN" initiative. The introduction of AKOBEN made Ghana the first sub-Saharan African country to have initiated a fully government funded environmental performance rating initiative meant to disclose firm's environment EP to the general public for transparency and environmental sustainability purposes (Darko-Mensah & Okereke, 2013). However, the EPA has not been consistent with the exercise. The last "AKOBEN" exercise, which was carried out in 2013 has not been published. Anecdotal evidence suggests funding as the main challenge.

Similarly, laws have been enacted to put pressure on firms/corporate bodies to comply to accepted environmental standards. Some of these laws are the Environmental Assessment Regulations, 1999 (L. I. 1652), and the Environmental Protection Agency Act, 1994 (Act 490). That notwithstanding, the contribution of these interventions to sustainable environmental practice has been questioned, especially, when available evidence suggests that there are deficiencies in law enforcement and low compliance to regulations in Ghana (Adjarko & Gemadzie, 2016; Agyemang, Aboagye, Yao, & Ahali, 2013; Anku-Tsede, & Deffor, 2014). Consequently, the natural environment continues to worsen. For example, Ghana has been ranked 21 out of the top

100 most polluted countries in the world and 2nd in Africa after DR Congo (IQAir, 2019).

Corporate EAP may improve transparency and break the information asymmetry that exists between the firm and the general public concerning the firm's impact on the natural environment. Armed with the requisite information on firm environmental impact, stakeholders and the general public can exert the necessary pressure on the firm to demand environmental sustainability practice. Thus, the need for firms to engage in EAP to minimize, if not eliminate entirely, the contribution of firms to profound environmental issues has never been felt as it is now. This has prompted the academic community to increase research activities on corporate EAP of firms around the world. However, most of the studies were directed to the developed countries with few to developing countries including Ghana. Specifically, most of the studies in Ghana looked at internal factors such as the determinants of corporate EAP with emphasis on firm specific factor, or assessed the level of corporate EAP (see, Arthur, 2016; Arthur, & Wu, 2017; Tackie, Agyenim-Boateng & Arthur, 2017; Welbeck et. al., 2017). Thus, a study to assess the complementary role of external pressure in naturing corporate EAP is critically imperative in Ghana. Even so, literature suggest that external pressure is one of the two main sources of organisational change (Morris, 2007), the other being internal pressure.

The theory of isomorphism has been used to explain how a change in a firm's behaviour is influenced by external factors, which are also referred to as isomorphic factors. However, studies on isomorphic factors and firm EAP which is an emerging practice, have mostly produced mixed findings

relationship between the two variables in different countries (see, Iliya Nyahas, Munene, Orobia, & Kaawaase, 2017; Martínez-Ferrero, & García-Sánchez, 2017; Setyorini, Ishsk, 2012). The inconsistencies in the findings associated with such studies within those different jurisdictions may be because each country may have unique political and cultural dynamics which may have influenced the findings (Kolk & Lenfant, 2010). Therefore, an answer to the question of how EAP of firms in Ghana may respond to the isomorphic factors is critical and must be answered.

To date, EAP remains voluntary in most countries including Ghana (Adinehzadeh, Jaffar, Abdul Shukor, & Che Abdul Rahman, 2018). This may have affected firms' commitment and contributed to their low levels of EAP. It has been argued that the implementation of EMAT demonstrates a firm's commitment to environmental sustainability and improves EAP (Mokhtar, 2015). EMAT enables firms to collect, measure and analyse data on environmental issues using management accounting techniques for better managerial decisions and improved EAP. The expectation is that, as firms implement EMAT techniques because of the isomorphic factors, the implemented EMAT techniques will subsequently result in an improved EAP. Albeit the importance of EMAT implementation to enhance EAP has been acknowledged, prior researchers have mostly focused exclusively on the relationship between the isomorphic factors and EAP (Alshbili & Elamer, 2020; Iliya Nyahas et al., 2017; Suddaby & Viale, 2011; Welbeck, (2017) or EMAT implementation and EAP (Bouten & Hoozee 2013; Latan et al., 2018). As far as the researcher can tell, this will be the first study to assess both the direct and indirect effects of isomorphic factors on firms' EAP with or without

the implementation of EMAT in Ghana. Therefore, the question is, does EMAT implementation mediate the relationship between the isomorphic factors and EAP?

Further to the above, most studies that sought to examine the relationship between isomorphic factors and EAP in Ghana have either been approached based on qualitative research, as in the case of Rahaman et al. (2004) or limited the research to a few listed firms, as in the case of Welbeck (2017). Choy (2014) contends that the choice between the qualitative and quantitative methodology in any research endeavour is mostly influenced by the nature of the research. Though the author acknowledged that there is no superiority between qualitative and quantitative research, qualitative research cannot serve the purpose if the objective of the study is to make an inference. The current study sought to examine the extent to which isomorphic factors influence EAP in Ghana by relying on a sample. This, therefore, requires a quantitative research approach. As stated earlier, Welbeck adopted a quantitative research approach to study the institutional environment on corporate responsibility in Ghana. However, the study was conducted on 17 listed firms and therefore may not present a comprehensive picture of Ghana's environmental accountability situation.

Similarly, other studies on EAP in Ghana have also been limited mostly to the mining sector (see, Arthur, 2016; Arthur & Wu, 2017; Arthur, Wu, Yago & Jinhua, 2017; Tackie, Agyenim-Boateng & Arthur, 2017). This may be because the mining sector presents serious environmental challenges to Ghana (Peprah, Opoku-Fofie, & Nduro, 2016). That notwithstanding, other sectors have also been found to impact negatively on the natural environment.

For example, the industrial sector which also includes manufacturing, transport and construction remains the leading cause of GHG emissions in Ghana (Abokyi, Appiah-Konadu, Abokyi, & Oteng-Abayie, 2019; Bour, Asafo & Kwarteng, 2019). This makes a study that will comprehensively examine Ghana's EAP position by bringing in other sectors generally considered as environmentally sensitive very critical.

Finally, although it has been suggested that EMAT implantation could enhance firm EAP (Mokhtar, Zulkifli, & Jusoh, 2014), there seem to be limited studies on EMAT among developing countries, especially Ghana. This makes it difficult to assess the extent to which firms in Ghana implement EMAT as well as determine the motivation for its implementation. It is against this background that this current study seeks to examine the nature and extent to which isomorphic factors influence EAP in Ghana. The study also seeks to determine whether EMAT mediates the relationship between the isomorphic factors and EAP.

Purpose of the study

The purpose of the study is to examine the isomorphic factors in corporate environmental management accounting techniques implementation and environmental accountability in Ghana.

Research Objectives

The specific objectives of the study are to:

1. Investigate the relationship between the isomorphic factors and EAP of firms in Ghana.
2. Investigate the relationship between the isomorphic factors and EMAT implementation of environmentally sensitive firms in Ghana.

3. Assess the effect of EMAT implementation on EAP of environmentally sensitive firms in Ghana.
4. Determine the extent to which firms in Ghana implement EMAT techniques from the perspective of the social issue life cycle theory to achieve EAP.
5. Examine the mediating effect of EMAT implementation in the relationship between the isomorphic factors and EAP of firms in Ghana.

Research Hypotheses

H1: There is a significant positive relationship between mimetic isomorphism and EAP.

H2: There is a significant positive relationship between coercive isomorphism and EAP.

H3: There is a significant positive relationship between normative isomorphism and EAP.

H4: there is a significant positive relationship between mimetic isomorphism and EMAT implementation among Ghanaian firms.

H5: there is a significant positive relationship between coercive isomorphism and EMAT implementation among Ghanaian firms.

H6: there is a significant positive relationship between Normative isomorphism and EMAT implementation among Ghanaian firms.

H7: There is a significant positive relationship between EMAT and EAP.

H8: The extent of EMAT implementation practices by firms in Ghana as per the social issue life cycle, has a significant positive relationship with the firm's EAP.

H9: EMAT mediates the relationship between institutional isomorphism and EAP among Ghanaian firms.

Significance of the study

There are a number of significant contributions this study provides, including adding a voice to the recent discourse on institutional isomorphism, EMAT implementation and EAP of firms in Ghana. The study also has both practical and theoretical implications.

To begin with, the need for this study cannot be overemphasised owing to the number of environmental challenges Ghana is going through at the moment and the country's desire to achieve various SDGs by the year 2030. SDG 3, Good Health and Well-being; SDG 6, Clean Water and Sanitation; SDG 7, Affordable and Clean Energy; SDG 13, Climate Action; SDG 14, life below water; and SDG 15, Life on Land. The achievement of these SDGs may be affected by the irresponsible operational activities of the corporate world resulting in pollution and degradation of the natural environment. Therefore, without EAP and the watching eye of the general public, firms may relent in their effort to act sustainably and hamper the success of meeting the SDGs. Ghana's industrial transformation is entering a new phase as the government's agenda to have an industry in each district is well on course. These industrialisations also have the capacity to impact the natural environment unless EAP is taken seriously both by the general public and stakeholders on one hand, and the firms on the other. To this end, Ghana may miss out on achieving the SDGs if firms are not pressured to be transparent in their activities concerning the natural environment.

Therefore, the need for a study of this nature to ascertain the measures necessary to control or improve the impact of the corporate world on the natural environment is of the essence. The study is more likely to influence government policy on institutions responsible for regulating firms' activities to improve environmental sustainability. Still on policy, the study will present a more comprehensive position on Ghana's corporate EAP. Unlike most prior studies in Ghana where research on EAP is skewed to the mining sector, this study covers more industries including manufacturing, mining, construction, oil and gas and transport.

Next, the study contributes to the body of knowledge by providing literature on the application of institutional theory on EMAT and EAP in Ghana. This is against the background that research in this area is emerging in Ghana and therefore, as far as the researcher can tell, few studies have been conducted in the area. The study provides future researchers with an extensive literature on institutional isomorphism, EMAT and EAP to enhance the review of the literature in studies involving Ghana and developing economies.

Findings from the study will help the general public and other stakeholders to be conscious of the extent to which firms in Ghana take issues concerning the environment seriously. Society and stakeholders can use the findings as a basis to question the operational legitimacy of the firms and begin to put pressure and demand that the firms fulfil their part of the social contract with society. The firms may also stand to benefit from the study in the sense that they will be well informed about their environmental performance and subsequently improve their EAP. This will help improve any legitimacy gap and also satisfy stakeholder interest. On the other hand, if the level of EAP

is found to be high, measures could be developed to maintain the level in order to maintain the operational legitimacy of the firm. Similarly, an investigation on whether there is an association between EMAT and EAP will provide relevant information on whether or not firms should implement EMAT system to generate appropriate data for EAP purposes.

The study primarily seeks to investigate the relationship between the institutional theory of isomorphism and EAP, with EMAT playing a mediating role. Though there are a number of studies that have looked at isomorphism and EAP, this study will be among the first to look at the mediating role of EMAT in the relationship between institutional isomorphism and EAP and thus extend the existing theory of institutional isomorphism and EAP. Finally, the study will provide the researcher an in-depth understanding of the study area. This is important as the author seeks to specialise in that field of study. The study will augment the author's professional competence in the study area and therefore provide the author with a different perspective and understanding on various aspects of the study area. The findings from the study can serve as a source of information for the researcher to rely on to advice firms on what to do to improve their operational legitimacy.

Delimitation of the study

The study specifically focuses on isomorphic factors, EMAT implementation and EAP by corporate entities in Ghana. Specifically, it examined whether the isomorphic factors espoused by institutional isomorphism influence EAP among Ghanaian firms. It was further carried out to determine whether the implementation of EMAT mediates the relationship between the isomorphic factors and EAP. The study employed the new

institutional theory of isomorphism as the main theoretical lens to explain firms' EAP, while the social issue life cycle theory underpins EMAT implementation of firms in Ghana. The participating firms were drawn from the Ghana stock exchange, Ghana chamber of commerce, minerals commission Ghana, and the petroleum Commission, Ghana. The study focuses on environmentally sensitive firms which include mining, manufacturing, construction and oil and gas firms.

Although there are few studies in Ghana on institutional pressure and EAP, studies on EMAT implementation in Ghana are limited as far as the researcher can tell. This has made it critical for this current study to look at the situation with environmentally sensitive firms since such firms are considered to have an extensive impact on the natural environment. Further to this, prior studies have documented evidence which shows that environmentally sensitive firms often implement EMAT as a means to generate environmentally related data for accountability and decision-making purpose (Burritt, 2005; Christ, & Burritt, 2013).

Limitation of the study

The findings of this study should be interpreted in the light of some important limitations. First, the cross-sectional nature of the data prohibits clear conclusions about directionality and causality. It might be the case that the EAP and the EMAT implementation 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.

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 the operational activities of firms in Ghana and beyond. The implications of the current study could also serve as a baseline and guide future research endeavours in similar low and middle level income countries given that research on this all-important topic is still nascent in these settings.

Organisation of the study

The study is divided into six chapters. Chapter one introduces the study and provides the general background to the issues driving the study. The chapter also presents the statement of the problem, the objective of the study, hypotheses of the study, delimitation and the organization of the study. Chapter two of the study is the theoretical review and the development of hypotheses. This chapter reviews all the alternative theories that could have been used to explain the phenomenon of interest and the justification for the

choice of the theory adopted for the study. Theories such as the stakeholder theory, legitimacy theory, institutional theory of isomorphism and the social issue cycle theory are all discussed. The chapter further looks at the theoretical framework and the development of hypotheses for the study. Chapter three of the study is the empirical review. This section of the study critically examines the conceptual issues underlying the study including reviewing articles in institutional isomorphism, EMAT and EAP. Other important documents such as unpublished thesis, dissertations, international and national documents relating to the variables of interest are discussed.

Chapter four is the methodology for the study. The description of study design and research approach, sampling frame, data source, data collection techniques, data analysis and ethical consideration are all captured in this chapter. Chapter five presents the descriptive analysis which provided a critical description of the study variables as well as the firms enlisted in this study. In addition, the chapter presents results and the discussion of the findings of the study. Chapter six focuses on findings, conclusions and recommendation of the study.

Chapter Summary

The chapter focused on a general introduction to the study. It discussed some of the environmental threats posed by the actions and decision of firms and the need for EAP to help minimise, if not eliminate, these threats. A discussion on the role institutional pressure and firms' own initiatives such as EMAT play in the EAP of firm was also assessed. The chapter then addressed the statement of the problem, the research objectives, research questions and

hypotheses, justification for the study and delimitation. Finally, the chapter outlined the contents of the various chapters of the study.

CHAPTER TWO

THEORETICAL BASES, RELATED CONCEPTS, AND HYPOTHESES DEVELOPMENT

Introduction

This chapter presents the theoretical foundation of the current study, the conceptual framework and the development of hypotheses. The chapter commences with a synthesis of the theoretical perspectives of the study with a focus on institutional theories of isomorphism, Stakeholder theory, legitimacy theory as well as the social issue life cycle theory. The second section chapter discusses the conceptual framework of the study with the concepts; isomorphic factors, EMAT implementation and EA reviewed. The final section focused on the development of the hypotheses for the study. The chapter ends with a chapter summary.

Theoretical Foundation of the Study

This section discusses the various theories and concepts that underpin the current study, and attempts to put the study in context. A number of theories are available for studies involving EA and EMAT implementation. However, the choice of a theory should depend on its appropriateness, ease of application, and explanatory power. Thus, the institutional theory of isomorphism, stakeholder theory, legitimacy theory and social issue life cycle theory were reviewed to provide explanation to the issue under study.

Institutional isomorphism

Institutional theory of isomorphism suggests that an organisation's formal structure can be inspired by the institutional environment within which the organisation finds itself (Meyer & Rowan, 1977). The pressure to meet

technical requirements could be a driving factor for organisations to adopt legitimised practice of other organisations. Similarly, adopting the structures and practices of other organisations may also be driven by the need to meet societal expectation, which leads to institutional isomorphism (Boxenbaum, et al., 2017). Conforming to societal expectations 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 therefore making them resemble each other in terms of structure and practice (DiMaggio & Powell, 1983).

Given that EMAT implementation and EAP in Ghana is voluntary, institutional isomorphism becomes a possible means to drive firms to engage in these practices. Thus, making it a perfect interpretive lens for the current research agenda as the study examines EMAT implementation and EAP among Ghanaian firms. There are three dimensions to institutional isomorphism and they include: mimetic isomorphism, coercive isomorphism, and normative isomorphism (DiMaggio & Powell, 1983). Mimetic isomorphism is driven by uncertainties surrounding a particular organisational practice and the desire by firms to advertently or inadvertently emulate legitimised practices from firms which are perceived to be doing well in that field of practice ((DiMaggio, & Powell, 1983; Saeed, et. al., 2018). The uncertainties usually happen when the practice is at its formative stage and emerging. Mimetic isomorphism becomes institutionalised when the best practices of other firms are accepted because of its institutional acceptance.

Thus, firms in Ghana adherence to EMAT implementation and EAP may be explained by mimetic isomorphism.

In coercive isomorphism, a firm's adherence to EAP is influenced by an external authority, particularly due to disproportionate power relationship between the firm and the authority that wills 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. Thus, pressure from government institutions through regulatory bodies as well as pressure from the general public is key to coercive isomorphism. Normative isomorphism is the third dimension of institutional isomorphism. Normative isomorphism arises due to professionalization (DiMaggio & Powell, 1983). This is because similar education and training brings to the fore similar professional values considered appropriate for professionals to carry into organizations and induce similar organisational practices by firms within the same environment (Boxenbaum, et al., 2017). Organizations often apply strategies and policies promoted by professionals (Beddewela & Fairbrass, 2015; Perez-Batres, Miller, & Pisani, 2011). Suchman (1995) submits that the pressure to engage in what is widely considered the appropriate course of action is a normative pressure. It is important to understand that, even though these three institutional isomorphisms may distinctively influence firms' EAP and EMAT practices, all three mechanisms can concurrently drive such practices.

Stakeholder theory

Corporate entities reside in an environment made up of ecosystem of related groups of which the corporate entity must seek to satisfy in order to stay successful for a long time (Friedman & Miles, 2006). These related

groups are what is referred to as stakeholders. According to Edward Freeman, the proponent of stakeholder theory, a stakeholder of a firm is any individual, or group of people who are affected by a firm and its workings. The stakeholder theory suggests that the activities of a firm should not be directed only to satisfy the interest of its shareholders but to all their constituents (Hahn & Kuhnen, 2013; Laplume, Sonpar, & Litz, 2008). The theory explains that a firm's success will not only depend on meeting the expectations of its shareholders but also individuals or organisations which may affect or be affected by the firm's operational activities (Freeman, 1984; Gray, 1995). The theory recognises the dynamism and complexity of the relationship between the firm and its stakeholders which require responsibility and accountability on the part of the firm (Gray et al., 1996).

Freeman (1984) argues that firms must keep in mind the dynamic nature of stakeholders in their decision making as the business environment changes. The disclosure of environmental information is considered fulfilling a firm's commitment to environmental sustainability and the protection of stakeholder interest (Muttakin, Khan, & Azim, 2015). Thus, EAP may be used as a mechanism to influence stakeholder perception towards the entity's commitment to the environment thereby reducing any pressure that may arise as a result of stakeholder's dissatisfaction (Braam et al., 2016). ER is considered a communication strategy used to satisfy the expectation of salient stakeholders in order to enjoy their continuous support (Gray et al., 1995).

Legitimacy theory

Firms' EAP have also been explained through the lens of legitimacy theory in prior studies. Suchman (1995, p. 574) defines legitimacy as "a

generalised perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions". The theory explains that every operational activity of a business entity is subject to greater societal approval to merit its execution, otherwise the entities' legitimacy may potentially be threatened once the society realises that the business is not operating within acceptable norms, values and beliefs of the society (Alrazi et al., 2015). The theory suggests that firms' environmental disclosures are influenced by pressure from society and that, when the society perceives actual EP of the firm to be different from societal expectation (legitimacy gap), the firm's legitimacy is questioned (Cho & Patten, 2007).

To this end, firms undertake legitimisation process to achieve legitimacy by engaging in EAP to inform society about their conformity to accepted societal norms and beliefs associated with their activities (Dowling & Pfeffer, 1975). Legitimacy is of strategic importance to any business since it grants firms the right to operate (Deegan, 2002). The tendency for society to revolt when there is a legitimacy gap is high and such revolts usually come in the form of: consumer boycott, refusal of suppliers to supply the business with resources (Deegan, 2002), demonstration and negative media publications which cumulatively affect the image of the business. Thus, legitimacy theory posits that society grants the firm the right to function the way it does and the firm has the responsibility to safeguard the interests of society. This relationship between the firm and the public is referred to as social contract and any breach on the part of the firm may cause the firm the right to operate (Thompson & Zakaria, 2004). EAP may be a means to keep the general public

informed about the firm's commitment to the environment as well as meeting their expectations.

Convergence of Institutional theory of isomorphism, stakeholder theory and legitimacy theory

The three aforementioned theories work together quite closely. Stakeholder theory and legitimacy theory induce pressure on firms to engage in activities that are acceptable to society, either as a means to influence stakeholder perception or to show that societal expectation has been met. However, if both the stakeholder theory and legitimacy theory become institutionalised within the environment such that it becomes the proper thing to do, it becomes an institutional isomorphism (Boxenbaum et al., 2017). Similarly, it has been argued that firms morph with the intention to either achieve operational legitimacy and/or appeal to stakeholders. Although institutional theory of isomorphism, stakeholder theory and legitimacy theory are each different, they are intertwined in their operationalization (Roszkowska-Menkes & Aluchna 2017). The study seeks to examine the presence of isomorphic factors in firms' EMAT implementation and EAP in Ghana. This is to explain the relationship between the isomorphic factors and EMAT and EA as a means to promote the possibility of having most Ghanaian firms engaging in EAP because it is the appropriate thing to do hence, the researcher's choice for institutional theory isomorphism as a more comprehensive theory to explain firm's EAP in Ghana.

Theory extension

It is imperative to highlight the fact that literature has documented evidence of firms using ER symbolically in order to paint a blossom picture on

their EP (Martínez-Ferrero & García-Sánchez, 2017). This situation does not only create public mistrust and raise questions as to the credibility of the firm's environmental reports (Cho et al., 2012), it also threatens the global effort to create an appropriate environment to sustain life (Hodge, Subramaniam & Stewart, 2009) which is enshrined in the SDG's. Therefore, the need for firms to demonstrate a strong commitment to environmental issues is fundamental. Mokhtar (2015) asserts that firms that are found to be more committed to environmental sustainability usually integrate their environmental issues to their decision-making process through the implementation of EMAT tools. Mokhtar further explains that EMAT implementation serves as a catalyst for firms to engage in EAP. Thus, this study seeks to extend the current theory that sought to explain the relationship between institutional theory of isomorphism and EAP by testing the mediating effect of EMAT implementation in the relationship between institutional theory of isomorphism and EAP.

Social issue life cycle theory

Managing social issues effectively remains critical for an organisation's reputation and survival (Zyglidopoulos, 1999). To help researchers and managers to understand the management of social issues, the social issue life cycle theory has been developed to help in that direction (Nasi et al., 1997). As explained by Mahon and Waddock (1992: 20), social issue refers to "social problems that may exist objectively but become issues requiring managerial attention when they are defined as being problematic to a society or an institution within society by a group of actors or stakeholders capable of influencing either governmental action or company policies".

Social issue life cycle theory explains that social issues follow a predictable evolutionary trajectory (Ackerman, 1975; Bigelow & Fahey, 1993; Buchholz, 1988; Mahon & Waddock 1992; Nasi et al., 1997; Post, 1978). There has not been consensus as to the number of stages through which an issue evolves; however, most authors agree that the evolutionary stages may range between four (Ackerman, 1975; Buchholz, 1988) and three (Mahon & Waddock; post, 1978).

Ackerman (1975) submits that a business response to social issues progresses through three distinct levels which he classifies as policy, learning and commitment phases. The policy phase is characterised by the issue first emerging as a management concern. The chief executive officer (CEO) then classifies the issue as one that requires the personal attention of the CEO and provides a general policy guideline to help solve the issue. However, after the formulation of the plicy guidelines, the organisation does take any meaningful action to deal with the situation (Nasi et al., 1997). Ackerman further argues that organisations do not see societal expectations as their immediate concern. Similarly, at the learning stage, the firm's attention to the environmental issue increases. It therefore assigns a specialist to handle the implementation of environmental policies meant to solve the issue but does not incorporate those policies into their decision-making process. At the commitment stage, the firm makes the issues their primary concern and incorporates the issue into its decision-making process (Nasi et al., 1997).

Mokhtar et al. (2015) contend that when an organisation is at the commitment phase, environmental issues become a prime concern and it therefore implements EMAT tools to enable the organisation gather relevant

data for dealing with the issue. Furthermore, Mokhtar et al. explain that the organisation becomes more inclined to report on their environmental performance. This study therefore employs the social life cycle theory as an explanatory tool to understand Ghanaian firms' EMAT implementation and the importance they attach to issues concerning EAP.

Isomorphism, Environmental Management Accounting Technique and Environmental Accountability (IEE) Framework

The relationship between the isomorphic factors and EMAT practices is well established in the literature (Jamil et al., 2015; Jalaludin, Sulaiman & Ahmad, 2011), just as the relationship between EMAT practices and EAP (see Bouten, & Hoozee, 2013; Mokhtar et al., 2014; Villiers, & Alexander, 2010) and the isomorphic factors and EA (see Alshbili & Elamer, 2019; Garcia-Sanchez, et al., 2016; Iliya Nyahas, Munene, Orobia & Kigongo Kaawaase, 2017; Setyorini, & Ishak, 2012). The findings from the different studies as indicated above, demonstrate a potential mediating role of EMAT implementation in the relationship between the isomorphic factors and environmental accountability. This mediating role of EMAT in the relationship between the Isomorphic factors and EAP may be a critical point of departure for the extension of the application of the institutional theory of isomorphism to environmental accountability issues. The mediating role of EMAT practices in the relationship between the isomorphic factors and EAP suggest that the pressure exerted by the isomorphic factors to influence EAP of firms could be enhanced if the firm already implements EMAT techniques meant to collect, measure and disclose information relating to the impact of a firm's footprint on the natural environment. A proposed IEE framework

indicating the nexus between the various concepts (isomorphic factors, EMAT and EAP) is shown in Figure 1. The various arrows demonstrate the various causal links among the concepts.

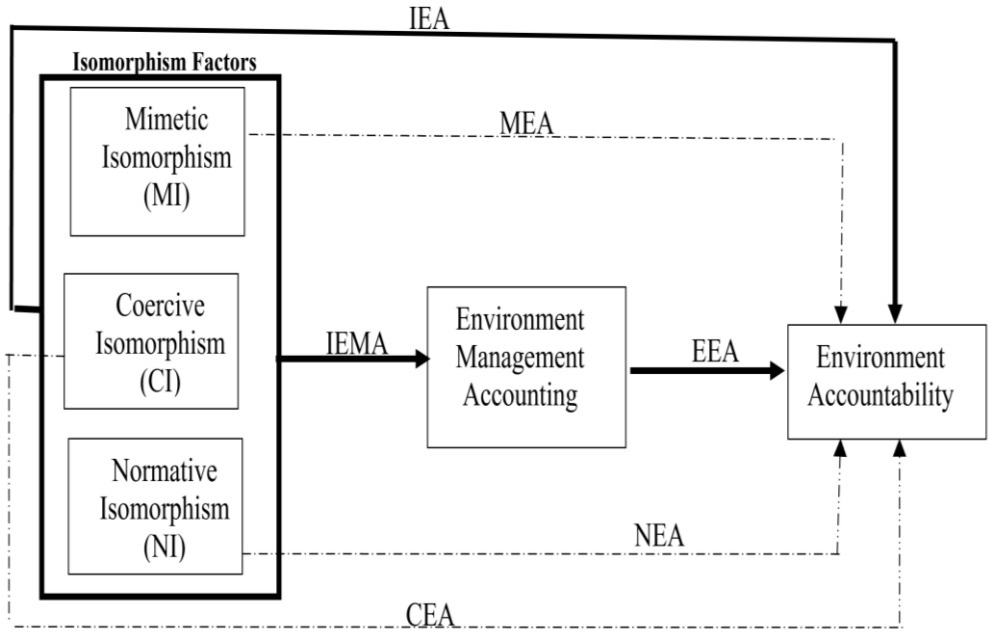

Figure 1: The IEE Theoretical Framework
Source: Researcher's own construct

As specified on the IEE framework, an enhanced corporate EAP is to be achieved when organisations engage in an improved environmental performance with a corresponding EAP (Alrazi, et al., 2015). As EAP of an organisation improve, stakeholders are offered the opportunity to assess the reporting entities' environmental performance and to raise issues of environmental legitimacy if their expectations are not met. However, the voluntary nature of EAP among LMIC, coupled with poor environmental performance, has accounted for the low environmental accountability practices in these countries. Thus, to secure better environmental accountability behaviour among firms and to improve environmental sustainability, there is the need to resort to institutional isomorphism, which exerts pressure on firms to conform to institutionalised behaviour. Boxenbaum, et al. (2017) contend

that the pressure to meet societal expectation by copying the structure and practices of other firms may lead to institutional isomorphism. The IEE framework, therefore, demonstrates that there is a relationship between the isomorphic factors - Mimetic Isomorphism (MI), Coercive Isomorphism (CI) and Normative Isomorphism (NI) and EAP of firms as depicted by the arrows MEA, CEA and NEA respectively. This relationship could engender firms to improve their EAP to stakeholders as the isomorphic factors could exert the necessary pressure on firms to become more transparent in their activities that impact on the environment, by engaging in EAP.

As indicated on the IEE framework, the mimetic isomorphism variable, which is represented on the arrow as MEA, is linked to EAP of the firms. This nexus demonstrates the extent to which the pressure to copy or imitate legitimised practice either from industry leaders, industry peers or competitors may influence firm EAP (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Similarly, the coercive isomorphism variable is indicated as CEA on the framework. The CEA arrow is linked to EA and shows the relationship between the two variables. The CEA illustrate how regulatory pressure can influence EAP of firms among LMIC. Aziz et al. (2017) submit that firms are more likely to comply with practices sanctioned by regulatory authorities. Finally, the relationship between the normative isomorphic factor and EAP is denoted as NEA arrow in the IEE framework. NEA arrow shows the extent to which normative isomorphism influences EAP of firms among LMIC. It also demonstrates the extent to which firms' EAP could be influenced by the fact that the professional bodies the firm or the staff of the firms are associated with endorse its legitimacy (Perez-Batres, Miller, &

Pisani, 2011). The total cumulative effect of the institutional isomorphism on EA is also depicted as IEA on the framework. The IEA arrow analysed the nexus between the cumulative effect of the three isomorphic factors as the independent variable and EAP as the dependent variable on the IEE framework.

The relationship between the isomorphic factors and EMAT implementation is represented by the arrow IEMA. The IEMA arrow shows the extent to which the isomorphic factors could influence EMAT implementation. As it has already been established, EMAT implementation is likely to improve firms' EAP (Mokhtar, 2015). The arrow EEA depicts the relationship between EMAT implementation and EAP of firms.

Isomorphic factors and environmental accountability practice

The need to have firms to engage in EAP has become necessary because of the environmental challenges the world is facing. Equally so is the fact that firms have been implicated as one of the major causes of environmental problems globally (Braam, Weerd, Hauck & Huijbregts, 2016). EAP provides stakeholders an opportunity to objectively assess the environmental performance of a reporting entity as a means to question the operational legitimacy of a firm operating in a manner that does not promote environmental sustainability (Alrazi *et al*., 2015; Braam, *et al*., 2016). To engage in EAP, a firm's accountability practices must go beyond financial accountability to cover issues such as environmental accountability so as to meet the expectations of stakeholders (Dienes, Sassen, & Fischer, 2016). Contextually, this change in behaviour could be driven by institutional isomorphism. As agued by Wang et al., (2015), Institutional isomorphism has

been identified as one of the drivers of organisational change in terms of structure and practice. Therefore, this study employs the institutional theory of isomorphism to test the relationship between the isomorphic factors of mimetic, coercive and normative isomorphism and EAP.

Though it is possible to test the relationship between institutional isomorphism as a composite variable and environmental accountability, the study seeks to test the relationship between each of the three isomorphic factors and EAP. This is important in order for the relationship between each of the three isomorphic factors and EAP to be ascertained since each may have a different level of influence on EAP. From the theoretical framework, hypotheses H1, H2 and H3 will test the relationship between the isomorphic factors and EAP. There are prior studies that researched the relationship between all or some of the isomorphic factors and EAP with mixed findings (see Nyahas, 2017; Setyorini, & Ishak, 2012; Villiers, & Alexander, 2010). Hence, this current study will follow prior studies by examining whether the isomorphic factors have influence on environmentally sensitive firms in terms of EAP in Ghana.

Mimetic isomorphism and environmental accountability practice

The researcher argues that since the issue of EAP is considerably new, emerging and voluntary in Ghana, EAP is likely to be influenced by the practices of firms perceived to be the best in the field. This is particularly so based on the fact that, for example, unlike financial accountability which has the International Financial Reporting Standards (IFRS) that influence the measurement, recognition, presentation and disclosure of financial information, EAP has no such standards. This practically leaves firms to their

fate even if they have the goodwill to engage in the practice because of the uncertainties surrounding it. DiMaggio and Powell (1983) contend that firms tend to imitate other firms in terms of structure and practice when they are faced with uncertainties surrounding their institutional environment. This form of imitations that leads to firms eventually resembling those they imitate is referred to us mimetic isomorphism. Similarly, Setyorini and Ishak (2012) submitted that listed firms in Indonesia tend to mimic other firms with respect to social and environmental disclosures under uncertainty, which has led to increase in social environmental disclosure. Thus, the study hypothesised that:

H1: There is a significant positive relationship between mimetic isomorphism and EAP

Coercive isomorphism and environmental accountability practice

The researcher again argues 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 regulatory agencies can lead to firms facing legitimacy problems. In Ghana for example, many financial institutions have had their licence 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 legitimacy. For example, Setyorini and Ishak (2012) found that listed firms in Indonesia respond to regulatory pressure. Similarly, Qu et al. (2012) found that increase in voluntary EAP by Chinese firms is associated

with coercive pressure. These studies confirm the possible association of coercive pressure and EAP. This study therefore hypothesised that:

H2: There is a significant positive relationship between coercive isomorphism and EAP

Normative isomorphism and environmental accountability practice

The researcher further argues that firms adhere to norms, and shared values developed by the professional association or industrial network for which they are affiliated with. 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. In Ghana for example, the institute of Chartered accountant Ghana, educational institutions or the association of Ghana industries may have influence on the way firms respond to environmental concerns. Ball and Craig (2013) submit that 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. Normative pressure was found to be significant in influencing sustainability reporting in Malaysia (Amran & Haniffa, 2011). Similarly, Iliya Nyahas et al. (2017) found positive relationship between normative pressure and environmental disclosure. Thus, this study hypothesised that:

H3: There is a significant positive relationship between normative isomorphism and EAP

Isomorphism and environmental management accounting technique

The increasing pressure on firms to be environmentally accountable, and the related pressure to adopt strategies and techniques to collect, analyse and recognise relevant and reliable environmental information for managerial decisions makes EMAT indispensable. EMAT implantation is deemed critical if EAP will contribute meaningfully to the sustainability of the natural environment (Jalaludin, Sulaiman & Ahmad, 2011). However, the voluntary nature of EMAT implementation and the associated cost for implementing it makes it difficult for firms to adopt the technique. Although EMAT is entirely an internal mechanism to help management decisions concerning the natural environment, firms may be willing to implement if there is an external pressure that threatens either the firms' competitiveness, sustainability or brand. Prior studies have confirmed the implementation of some EMAT by firms as a result of institutional pressure (Arnaboldi & Lapsley, 2003; Martinez-Costa et al., 2008; Sila, 2007). Thus, all three dimensions of institutional isomorphism may have a role in firms EMAT implementation in Ghana.

Mimetic isomorphism and environmental management accounting technique

The desire to remain competitive within a business environment which is full of uncertainties, often puts a lot of pressure on firms to imitate other firms with whom they face similar environmental conditions in terms of what is generally considered as the critical success factor. In Ghana, EMAT is an emerging practice among firms, even though it has been thought out as a catalyst for generating relevant and reliable information for both internal and

external decision marking. Especially when the demand for environmental accountability is on the increase and firms who are unlikely to keep up are likely to have competitive challenges, firms in Ghana are expected to benchmark either their industry leaders, peers or competitors who have been successful with EMAT implementation. The study therefore hypothesised that:

H4: there is a strong positive relationship between mimetic isomorphism and EMAT implementation among Ghanaian firms.

Coercive isomorphism and environmental management accounting technique

The association between coercive pressure in the form of regulations and change in organisational behaviour has been extensively examined by prior studies (DiMaggio & Powell, 1983; Wang et al., 2015). Thus, the pressure on firms to become environmentally accountable in order to achieve operational legitimacy may require the implementation of EMAT. Bennett and James (1998) contend that the regulatory environment is a major contributor to EMAT practices among firms. This is perhaps due to EMAT ability to provide reliable information for managerial decisions meant for safeguarding the natural environment (Schaltegger & Burritt 2000). Therefore, in order not to be confronted with regulatory issues concerning safeguarding the natural environment, firms are likely to be under coercive pressure to implement EMAT as a means to collect, measure, recognised and disclose reliable environmental information. Thus, the study hypothesed that:

H5: there is a strong positive relationship between coercive isomorphism and EMAT implementation among Ghanaian firms.

Normative isomorphism and environmental management accounting technique

Professionals are very mindful of their members behaving in a manner likely to create branding problems for the association. They often advise and encourage members to act ethically in their dealings as they execute their responsibilities as professionals. The Institute of Chartered Accounting, Ghana has stringent disciplinary systems with sanctions that can be applied if members contrary to the expected behaviour. This is critical since any unethical behaviour, if not hold in check is likely to damage the reputation of such professional association. It is expected that, those professional associations the firm or its key employees belong to will exert pressure on the firm to engage EMAT practice culminating into normative isomorphism. The study therefore hypothesisesed that:

H6: there is a strong positive relationship between normative isomorphism and EMAT implementation among Ghanaian firms.

Environmental management accounting technique and environmental accountability practice

EMAT implementation has been found to improve EAP of firms (Mokhtar, et al., 2015). The implementation of EMAT tools will provide firms the needed information to enable them collect, measure, recognise and present information about a firm's environmental impact to management for internal decision-making and external reporting (Burritt et al., 2002; Frost and Wilmshurst, 2000). Thus, there is an expected link between EMAT and EAP (Tilt, 2009). Albeit there are few studies on the relationship between EMAT and EAP. However, there are a number of studies with documented evidence

of such relationship. For example, Bouten, and Hoozee, (2013) found that there exists an interplay between EMAT and ER. Mokhtar et al. (2014) argue that for effective measurement and reporting of environmental information, a firm must implement EMAT. In this study, the relationship between EMAT and EAP will be tested by employing the social issue life cycle theory.

Thus, the study argues that there is a positive relationship between EMAT implementation and EAP. The study further argues that firms which are more committed to environmental sustainability practices and as a result have implemented EMAT engages in EAP much more than those who are at the policy and learning stage of the social life cycle. From the theoretical framework, H8 represents the relationship between EMAT and EAP. The study was thus hypothesised as follows:

H7: There is a significant positive relationship between EMAT and EAP

H8: The extent of EMAT implementation practices by firms in Ghana as per the social issue life cycle, has a significant positive relationship with the firm's environment disclosures.

Isomorphism, environmental management accounting technique and environmental accountability practice

Given that there is evidence of an established relationship between the isomorphic factors and EMAT and EAP, this study argues that there is a possibility of EMAT mediating the relationship between the isomorphic factors and EAP among Ghanaian firms. From the theoretical framework, hypotheses H4, H5, and H6 show how EMAT interact with the isomorphic factors and EAP. The study therefore hypothesised that:

H9: EMAT mediates the relationship between institutional isomorphism and EAP among environmentally sensitive firms in Ghana.

Chapter Summary

This chapter discussed a number of theories that have mostly been used to explain firms EAP including shareholder theory, legitimacy theory and institutional theory of isomorphism. It was discovered that, both shareholder and legitimacy theory are an aspect of institutional theory since they all result to exerting pressure on firms to behave ethically. The chapter discussed the social issue life cycle theory and how it explains the extent of EMAT implementation. Furthermore, the theoretical framework of the study was discussed and finally, the chapter discussed the hypotheses development for the study.

CHAPTER THREE

EMPIRICAL REVIEW

Introduction

This chapter aims to review the related empirical literature on institutional isomorphic factors, environmental management accounting technique implementation and environmental accountability practices. This ultimately will help identify any inconsistencies and gaps in prior literature for which the current study seeks to bridge. The chapter will review the extent literature that has examined the relationship between institutional isomorphism and EAP, institutional isomorphism and EMAT implementation, and EMAT implementation and EAP. The chapter will end with a chapter summary.

Environmental Accountability

Accounting has provided a medium for firms to demonstrate transparency in divulging the impacts of their productive activities on the natural environment. The traditional role of financial reporting has changed over time. Financial reports do not only give reports on the reporting entities' financial performance and financial position but also issues such as environmental performance of reporting entities (Andrew, 2000; Krivačić, & Jankovic, 2017; Perkiss, Dean, & Gibbons, 2019). Firms are noted for communicating their environmental performance using the financial report mostly as a medium (Sumiani, Haslinda, & Lehman, 2007). These reports afford society and stakeholders the opportunity to inform themselves about the firm's environmental performance and to also question the firm's operational legitimacy (Burgis & Zadek 2006; Hassan, & Kouhy, 2015). This is particularly so when the assertions in the environmental report suggest that not

much is being done to safeguard the natural environment. Thus, environmental reporting is essential for firms to demonstrate environmental accountability to stakeholders about their activities that impact on the natural environment.

Though the importance of environmental reporting is widely acknowledged, the level of firm environmental accountability practice has been found to be low and diverse (Sumiani, Haslinda, & Lehman, 2007). Whereas in some jurisdictions environmental accountabilities practices have increased to an appreciable level and continue to increase, the same cannot be attributed to some other jurisdiction. For example, Clarkson, Overell and Chapple (2011) examined how both the level and the nature of environmental information voluntarily disclosed by Australian firms relate to their underlying environmental performance. The researcher used Clarkson et al.'s (2008) disclosure index which is based on the GRI guideline to measure the level of disclosure, whilst environmental performance measure was based on emission data available from the National Pollutant Inventory (NPI). The results indicated a low level of disclosure among Australian firms. It was further discovered that firms with a higher pollution propensity disclosed more environmental information and relied on the Global reporting Initiative (GRI) guideline. Bhattacharyya (2016) also found the level of social and environmental reporting practice among Australia firms to be low confirming Clarkson, Overell and Chapple's findings in 2011.

Similarly, Chandok and Singh (2017) studied the determinants of environmental disclosure among Brazilian listed firms and found that the level and type of environmental disclosures by the firms remains low. However, among American and Canadian 551 firms, Centre for Sustainability and

Excellence (2017) indicated that most public firms publish sustainability report. For example, 79.2% and 79.0% of American and Canadian firms respectively published sustainability report (CSE, 2017). In both countries, the GRI standard was found to be the benchmark for their report. The findings clearly established that firm's environmental reporting performances among countries are mixed even with advanced economies.

Unfortunately, the nature of environmental reporting in developing countries, particularly in the African region, appears problematic. Most research on environmental accountability indicate a low environmental accountability practice in these contexts. In Bangladesh, Belal, Cooper and Khan (2015) investigated corporate environmental responsibility and accountability and showed that firms are unwilling to accept responsibility for the impact of their operational activities on the natural environment. Indeed, lack of political will and fear of losing business to less regulated countries have been the main barriers to environmental accountability (Belal et al., 2015). According to Welbeck et al. (2017), listed firms in Ghana disclose some environmental information in their financial reports despite that the disclosure levels appear low relative to the GRI standards. A study on the determinants of environmental disclosures of listed firms in Ghana noted that the EPA should institute stringent measures and sanctions to make the cost of non-compliance to environmental performance and non-disclosure of environmental information very high. This action may deter firms from engaging in sub-optimal environmental reporting practices. Investigating the performance indicators disclosure in sustainability reports of 10 large mining companies in Ghana (2008-2012), Arthur et al. (2017) indicated an increasing

trend in sustainability disclosure by mining firms based on the GRI standard. Given the empirical evidence on low environmental accountability practices and the voluntary practices of the environmental accountability, in Ghana and even in some developed countries, the need to examine the factors that can lure firms within developing countries to engage in environmental accountability EAP is critical to improve the practice.

Institutional Isomorphism, and Environmental Accountability Practices

Institutions provide a framework that governs the social, political and economic relationship among individuals or firms (North, 1990). The environment with which organisations operate is not static. Business environment often undergoes institutional change mostly in the form of new regulations, new standards and new business methods (Roszkowska-Menkes, & Aluchna, 2017). Organisations' quest to pursue operational legitimacy exerts pressure on them to adopt the practices in conformance to the new institutional changes (Mizruchi & Fein, 1999). Thus, the institutional pressure to conform to the new practice often brings convergence in terms of practice and makes organisations resemble each other in terms of managerial practice resulting to institutional isomorphism (DiMaggio & Powell, 1983). In the context of this study, institutional isomorphism is taken to mean those institutional pressures that trigger change in internal behaviour of firms towards convergence in EAP practices. Thus, Mimetic isomorphism is the pressure to benchmark other organisation managerial practices (Villiers & Alexander, 2014). Hence, mimetic isomorphism becomes a driving factor in a firm's EAP behaviour when there are high level of uncertainties surrounding the firm's EAP practice. The uncertainties usually happen when the practice

the firm seeks to emulate is at its formative stage and emerging. In such a situation, firms tend to borrow legitimised practices from other firms which are perceived to be doing well in that field (Cormier, 2017**)**. Mimetic isomorphism becomes institutionalised when the best practices of other firms are accepted because of its institutional acceptance (Iliya Nyahas et al., 2017; Saeed et. al., 2018; Villiers & Alexander, 2014).

Coercive isomorphism emphasizes how a firm's conformance to EAP may be imposed by an external authority, particularly due to the disproportionate power relationship between the firm and the authority that wills the power (Masocha, & Fatoki, 2018). The firms' desire to conform to the pressure exerted by the external authority is driven by the need to maintain or achieve operational legitimacy. Thus, pressure from government institutions through regulatory bodies as well as pressure from the general public is key to coercive pressure. Normative isomorphism is said to be present in a firm's EAP when a firm's EAP behaviour is influenced by the desire to conform to standards, norms, values or culture and to adopt systems and techniques considered legitimate by relevant professional groupings (Perez-Batres, Miller & Pisani, 2011).

Using the institutional theory of isomorphism (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Mizruchi & Fein, 1999), the extent to which the three dimensions of institutional isomorphism influence firms EAP has been studied extensively. Villiers and Alexander (2014) researched on Institutionalization of Corporate Social Responsibility Reporting of mining firms between Australia and South Africa. The results revealed that normative pressure presents a more significant explanation to CSR disclosure practices of

firms within the two countries. The study also found similar CSR disclosure patterns between the two countries although they are each confronted with different social issue. Similarly, Garcia-Sanchez, Cuadrado-Ballesteros and Frias-Aceituno (2016) used the GRI standard as benchmark and collected data from 2004–2010 of 1598 international firms from 20 different countries in Europe, North America and Japan. Their findings revealed that normative and coercive structures have significant effect on corporate CSR accountability. Martínez-Ferrero and García-Sánchez (2017) also applied panel data drawn from 2007-2014 on 696 international firms and found that normative pressure exerts the greatest explanatory power, followed by coercive pressure in the assurance demand. The study also discovered that firms located in countries where there are strong legal and cultural development and where sustainability developments are a major concern, firms are more likely to provide assurance of their sustainability report (Martínez-Ferrero & García-Sánchez, 2017).

In the case of developing countries, research on whether institutional isomorphism plays a role in firms environmental accountability practices are still emerging. The few studies done have also produced mixed findings. For example, In Nigeria, Iliya Nyahas et al. (2017) analysed financial reports of 92 companies and found that while coercive and normative isomorphic factors positively relate to voluntary disclosure of environmental information, mimetic isomorphic factors did not. However, Setyorini and Ishak (2012) examined 911 firms for 2005-2009 reporting periods employing the Clarkson's environmental index and Sutantoputra's social index for data collection. The content analysis of financial reports of the sampled firms indicated that social and environmental reporting practices among Indonesian

firms have increased over time. Mimetic isomorphism was found to have played a role in the increase in the practice. Alshbili and Elamer (2019) studied the influence of institutional context on CSR disclosure in Libya and discovered that all the three isomorphic factors interplay to influence CSR disclosure practices among firms. Although the study did not test the relationship between the isomorphic factors and environmental disclosures, the findings are not new in literature as emphasised in prior studies that all the three isomorphic factors may operate concurrently (DiMaggio & Powell, 1983; Tutftle & Dillard, 2007: 392). Employing a qualitative approach, Rahaman et al. (2004) submitted that coercive pressure in the form of pressure from the World Bank significantly influenced CSR disclosures including their structure and their accounting system in Ghana's Volta River Authority. Conversely, Welbeck's (2017) study, which analysed financial report of 17 listed companies in the Ghana stock exchange, submitted that coercive and normative institutional pressure influence social and environmental disclosure among Ghanaian listed firms.

As noted by Suddaby and Viale (2011), uncertainty is mostly associated with new field and thus, firms tend to copy others which often leads to mimetic isomorphism. Societal expectations and regulations which emerge as a field grows may induce coercive isomorphism, while at a later stage, normative isomorphism through professionalization may develop. Although the three dimensions of the isomorphic factors can operate simultaneously to influence environmental accountability (DiMaggio & Powell, 1983), some of the isomorphic pressure may be more profound than others. In both the developed and the developing countries, diverse observations have been

reported on the association between the isomorphic factors and environmental accountability of firms. This suggests that country specific characteristics may present key influence on which and the extent to which the respective isomorphic factors influence firm behaviour and for that matter firm's environmental accountability practice. This is because, countries may differ with respect to handling country-specific cultural practices likely to influence firms' activities (Ortas, Álvarez, Jaussaud & Garayar, 2015).

Institutional Isomorphism and Environmental Management Accounting Technique

Isomorphic influence on EMAT implementation has been empirically studied with varied findings in prior literature. For example, Aziz et al. (2017) studied how institutional pressure influences the adoption of green initiatives among publicly listed Malaysian firms. A data from 120 firms were gathered and analysed using partial least square structural equation modelling (PLS-SEM). The findings indicated that, both coercive and normative pressure significantly impact on firm adoption of green initiatives but not mimetic pressure. Similarly, Jamil et al. (2015) examine the factors that influence EMAT of SMEs in Malaysia using questionnaires to gather the data, the study found that Coercive pressure has a positive significant effect on EMAT while, Normative and Mimetic pressures do not contribute significantly to EMAT practice. Conversely, using multiple regressions, Jalaludin, Sulaiman and Ahmad (2011) found among manufacturing firms in Malaysia that institutional pressure plays a role in firms' environmental management accounting adoption. In addition, normative pressure in the form of training and accounting body membership is the most dominant pressure compared to both

coercive and mimetic pressures. Similarly. Iredele, Tankiso, & Adelowotan, (2019) examined the influence of institutional isomorphism and organisational factors on environmental management accounting practices of listed Nigerian and South African firms. Their study adopted a quantitative approach and data were analysed using an independent sample t-test and a multiple regression estimation technique. The findings indicated that South Africa does better in terms of EMAT that their counterpart Nigeria. The findings also demonstrated that coercive pressure may stimulate EMAT among firms in the respective countries. This clearly indicates that, apart from the scanty nature of studies on institutional pressure on EMAT, the findings have shown inconsistencies in terms of which of the isomorphic factor do influence EMAT and demonstrate the need for more studies in that area.

Environmental Management Accounting and Environmental Accountability Practice

Environmental management accounting is an accounting system meant to provide managers with information on firm activities that affect the environment as well as environmental issues affecting the firms (Burritt, 2004). The system requires the use of management accounting techniques to gather environmental information for both internal decision-making and external reporting purpose (Burritt et al., 2002; Jasch, 2003; Schaltegger et al., 2003). The traditional management accounting system has been found to trivialise environmentally related issues (Mokhtar, Zulkifli & Jusoh, 2014). Increasingly, most environmental costs are lump together as overheads and, therefore, not given the necessary attention it deserves. Studies have explored the probable association between EMAT implementation and EAP. For

example, Mokhtar et al. (2016) employed the contingency theory to examine the relationship between corporate characteristics and EMAT implementation among Malaysian firms. The results indicated that EMAT implementation was moderate with more attention on environmental cost-effectiveness issues and complying with environmental regulations than incorporating EMAT information into performance measurement, control and reporting.

The implementation of EMAT tools may provide firms with the needed information to enable them to collect, measure, recognise and present information about a firm's environmental impact to management for internal decision-making and external reporting (Burritt et al., 2002; Frost & Wilmshurst, 2000). Without a proper mechanism to collect and measure environmental impact and other related information, the firm's commitment to the environment may be impaired (Burritt et al., 2002; Schaltegger et al., 2003) due to lack of reliable information. Researchers have emphasized the possibility of EMAT to influence EAP of a firm (Gray, 2010; Hopwood et al., 2010: Tilt, 2006; 2009). Bananuka, and Bakalikwira, (2021) analysed te relationship between institutional pressures, environmental management practices and firm characteristics to environmental performance; and to establish whether environmental management practices mediate the relationship between institutional pressures and environmental performance. The study adopted a cross-sectional approach with SPSS and MedGraph program (Excel version), the findings reveal that environmental management practices and institutional pressures are significant predictors of environmental performance. Results further suggest that environmental management

practices partially mediate the relationship between institutional pressures and environmental performance.

Similarly, Bouten and Hoozee (2013) studied how the interplay between ER and EMAT practices may interact in the face of disturbances to the natural environment. Findings from the data sourced from Belgium firm showed that there exists an interplay between EMAT and ER although influenced by the change pathways followed by the disturbance. In addition, the interplay can either enhance or stifle environmental accountability initiatives. Nyakuwanika, and Poll, Van Der, (2021) reviewed literature, and also examined how the integration of environmental management accounting practices (EMAPs) could be integrated into a conceptual framework to address environmental challenges. Their very little was found very little evidence of the integration of EMAPs.

However, Mokhtar et al. (2014) argue that firms' EMAT implementation evolves in three distinct stages and each stage signifies the extent to which the firm classifies environmental issues as its primary concern. This three-stage evolution of EMAT implementation has been influenced by the social dynamics of life cycle. The theory explains that a business response to social issues progresses through three distinct levels of policy, learning and commitment level (Ackerman, 1975). Contextually, Mokhtar et al. (2014) contend that when an organisation is at the commitment phase, environmental issues become a prime concern and as a result may implement EMAT tools to gather relevant data for dealing with the issue. At this level, the firm is more inclined to report on their environmental performance. The policy and learning level are characterised by the firm developing policies and assigning a

specialist to help to implement the policies set at the policy level but without incorporating it into their decision-making process.

Thus, it is imperative not only to examine whether there exits any relationship between EMAT and EAP, but also to determine the extent to which firms implement EMAT using the social issue life cycle theory as an interpretive lens. Given that prior studies have established a relationship between the isomorphic factors and EMAT (Jamil, Mohamed, Muhammad, & Ali 2015; Jalaludin, Sulaiman & Ahmad 2011) as well as EMAT and EAP (Bouten & Hoozee, 2013; Latan, et al., 2018), it is also prudent to attempt to expand the institutional theory of isomorphism by examining the mediating role of EMAT in the relation between the isomorphic factors and EAP.

Chapter Summary

The empirical evidence from prior literature indicates that the EAP is low, especially among LMICs. This low EAP situation may be associated partly to the fact that EAP still remains voluntary in most countries. Consequently, the need to practically influence firms to become more EAP conscious has never been felt like this before as the planet continuous to suffer the devastating effect of firms' impact on the natural environment. Furthermore, this scoping review indicated that research findings on the effect of institutional isomorphic pressure on firm EAP are inconclusive among countries. This demonstrates that country-specific factors may play a role in the extent to which institutional isomorphism influences EAP of firms. The review also demonstrated that, isomorphic factors may influence firms to implement EMAT as a means to enhance EAP. However, few studies have been carried out to test the relationship between the isomorphic factors and

EMAT among LMICs. Given that there is a relationship between the isomorphic factors and EMAT and EMAT and EAP, the mediating effect of EMAT in the relationship between the isomorphic factors and EAP of firms is a research gap worthy of consideration.

CHAPTER FOUR

RESEARCH METHODS

Introduction

This chapter discusses the research strategy and the empirical techniques applied to achieve the objectives of the current study. The objectives of this research are to examine the relationship between isomorphic factors and firms' EAP in Ghana. It also seeks to test the mediating role of EMAT implementation in the relationship between the isomorphic factors and EAP. The chapter begins by examining the various research paradigms with their related assumptions that are applicable in social science research and to justify the selection of the chosen paradigm for this study. The chapter further discusses the research approach, research design, the strategy for data collection and analysis, as well as the ethical considerations associated with this research.

Research Paradigm

Fundamentally, researchers' beliefs about the nature of reality, what can be known about this reality and how to go about knowing the reality is a catalyst for any scientific enquiry (Rehman, & Alharthi, 2016). Referred to as research paradigms, these elements of philosophy provide a worldview that influences the general perspective about the nature and complexity of the real world (Patton, 1978). Bajpai (2011) posits that the research paradigm exerts influences on how data about a phenomenon should be collected, analysed and applied for the production of knowledge. Henn, Weinstein and Foard, (2006) argue that paradigms are often categorised as either positivism or interpretivism. Positivist assumes that reality exists independently of the

observer and not influenced by our senses. The positivist approach to understanding the social world is similar to the natural world. For example, social phenomena are governed by laws which can be formulated and presented through a factual statement (Gall et al., 2003, p. 14).

The ontological position of the positivists is that of objectivism, which implies that reality exists regardless of human observation and experience. Ontology is a system of belief about the nature of reality. It explains the assumptions social entities make in an attempt to understand the nature of the social world (Blaikie, 1993, p. 6). Similarly, the epistemological stance of the positivists is rationalism. Epistemology has to do with the possibilities, nature, sources, and limitations of knowledge in the field of study (Dudovskiy, 2018). According to Hallebone and Priest (2009), epistemology provides the yardstick for researchers to determine what does or does not constitute an acceptable knowledge. Rationalism, therefore, accepts the knowledge that is gained through valid and reliable measurement and independent from the observer (Dudovskiy, 2018; Rawnsley, 1998). As contended by Rehman and Alharthi, (2016), a researcher can independently observe a phenomenon without interfering with the observed to produce acceptable knowledge. The positivist paradigm follows a more scientific methodology by relying on statistical tools for data analysis for inferential purposes (Alharahsheh, & Pius, 2020).

Interpretivism, on the other hand, is associated with the belief that there exist socially constructed multiple realities and that no single objective reality is existing/exists independent of our senses (Grix, 2004, p. 82; Rehman, & Alharthi, 2016). The interpretivist perceives the researchers as part of the

research process and thus depends on the people being studied for their feeling of or explanation to their situation. The ontological position of the interpretivist is subjectivism. Subjectivism is the belief that reality is something that is constructed within the mind of the observed. Empiricism which is the epistemological position of the interpretivist consider the personal experience in connection with an observed phenomenon as well as feelings and sense as a valid source of knowledge (Dudovskiy, 2018). Thus, since feelings, sense, and experience may differ from an individual to another, what constitutes a valid source of knowledge may be subject to the interpretation of the observed.

The positivist and the interpretivist stance represent the two major philosophical positions in a research endeavour. Conventionally, accounting emphases the scientific approach evidence and relies on evidence to ensure reliable conclusions (Johnson & Duberley, 2000). This approach often involves drawing conclusions against theory based on a large-scale and representative sample (Bryman & Bell, 2007) and thus, making it ideal for studies that seek to generalise the findings (Bryman & Bell, 2007; Johnson & Duberley, 2000). This is consistent with the current study which examines the relationship between institutional isomorphic factors mimetic isomorphism, coercive isomorphism and normative isomorphism and EMAT and EAP. The study also sought to generalise the findings even though data collection was limited to a sample. Thus, this study adopts the positivist paradigm to suite the objective of the study.

Research Approach

In line with the positivist position and the objective of the study, the study adopted the quantitative research method to deal with data issues concerning the study. Benbasat, (1984) submits that the complex nature of the real world requires that a research method best suited to achieve research objective under consideration must be chosen. Thus, quantitative data was collected for all the variables of interest. Survey questionnaires were employed to collect data for the institutional isomorphic factor, EMAT and EAP. The study also adopted numeric data analysis tools for the analysis of the data to arrive the findings.

Research Design

Research design constitutes a comprehensive strategy, designed to integrate all the different aspects of the research logically and coherently. It is to ensure that the research problem is achieved effectively. It is the blueprint for the collection, measurement and the analysis of data for a research study. Saunders et al., (2012) argues that the design of the research is influenced by whether the research should be taken at a particular time or over several years, though the time dimension is independent of the research methodology to be adopted. Based on the time horizon, two designs can be identified for research purposes, namely cross-sectional design and longitudinal design.

Cross-sectional Design

In cross-sectional research design, data for the study is collected at a point in time but across different sections, groups or organisations (Hall, 2008). It is described as the study of a particular phenomenon (or phenomena) at a particular time. Robson (2002) contends that a cross-sectional study may

employ a survey strategy to describe the prevalence of a phenomenon or to explain how factors may be related across different organisations. This design is noted for its simplicity as well as its cost-effectiveness. It is also more useful when it comes to collecting large data from among a different variety of respondent (Sarantakos, 2005). Conceivably, the most important strength of a cross-section design has to do with the fact that data is collected at a point in time and as such, the researcher may be able to meet the timelines associated with a study, more especially in the case of academic research. The current study collected data on firms' EAP and EMAT implementation practice at a point in time and across different industries and to also determine the nature and extent to which isomorphic factors influence such practices. This makes the cross-sectional design more appropriate for the study.

Population

The need to have a clearly stated target population in quantitative research is critical. The sample from which the researcher will target the respondent must be representative of the target population just to ensure the validity of the research approach (Bell & Bryman 2007; Kotrlik & Higgins 2001). Target population represents the entire set of units relating to a particular phenomenon of interest to the researcher (Sa'id & Madugu, 2015). The target population for this study is all environmentally sensitive firms operating in Ghana. This is consistent with the purpose of the study which is to examine isomorphic factors within corporate environmental management accounting implementation and environmental accountability in Ghana. Prior literature has identified environmentally sensitive firms as those in the manufacturing, mining, energy and oil extraction, construction and transport

industries (Mokhtar et. al, 2016). The choice of environmentally sensitive firms was influenced by the fact that such firms comparatively impact more on the environment than the less environmentally sensitive firms. Thus, being one of the first studies to be done in Ghana, it is important to limit the focus to where the issue is more critical.

The selected firms were sourced from the Ghana Chamber of Commerce, Minerals Commission Ghana, the Petroleum Commission Ghana and the Ghana stock exchange. With the aid of the Ghana Business directory, the researcher located each firm chosen for the study at hand. The Ghana business directory has most businesses in Ghana with their locations and contact addresses. The Ghana business directory categorises all businesses into sectors and nature of business thus, making it less difficult to classify the firms as to whether they are environmentally sensitive or not. The nature of the study required that only those firms which prepare and submit an audited annual financial report were included in the study. This was critical in the sense that the credibility of the data must be assured to provide more reliable findings.

The current study focusses on corporate level, for this reason, the unit of analysis for the study will be the organisations. The questionnaires were administered to the accountant/finance directors of the respective firm to respond. This is mainly because the accountant/finance directors are responsible for the preparation of the financial report of the firm and therefore will have more insight into the firm's environmental accountability practices.

Sample Procedure

A sample frame was constructed for this study. A sample frame is often constructed to ensure that all units that could be sampled are selected for the study (DiGaetano, 2013). The criteria for the selection of firms into the sample frame were:

I. The firm must belong to those generally classified as environmentally sensitive firms.

II. The firm must have a published an audited financial statement for the year 2018.

The 2018 annual report was chosen because it was the most current annual financial report available at the time of the data collection. The annual report has both the financial statement and the standalone environmental report and were both for the accounting period 2018. Conventionally, published annual financial report covers the immediate past reporting period. In context, the 2018 reports are made available in 2019 and the 2019 in 2020. However, most firm firms in Ghana could not publish the report in partly 2020 because the COVID19 making it difficult for the 2019 annual report to be assessed.

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

Table 1: Sample frame

Industry categories	**N**	**%**
Mining	27	12.05
Construction	19	8.48
Energy, Oil and gas	32	14.29
Manufacturing	139	62.05
Transport	7	3.13
Total	**224**	**100**

Source: Authors construct 2020

In total, there are 224 firms that met the criteria for selection into the sample frame. The study adopted census by including all the firms in the sample frame in the current study. This was to ensure that more firms were involved in the study and to meet any assumption that had to do with employing a particular analytical technique.

Measurement of Variables

An important step in quantitative research is clearly outlining how the various constructs or variables are going to be measured. This is essential for the purposes of being able to replicate the study at another time or by a different researcher. The process may involve operationalizing the variables by clearly defining and putting them in the context of the current study. The main variables in this current study include Institutional isomorphism, EMAT implementation, and EAP. The operationalization of these variables and their measurement will be provided in turn.

Institutional isomorphism

In the context of this study, institutional isomorphism is operationally defined as those institutionalized processes that trigger change in internal behaviour among firms towards engaging in EAP. Mimetic, coercive and normative isomorphism which are the three main dimensions of institutional isomorphism were used as proxies for measuring Institutional isomorphism. Different questions were asked to solicit responses from the respondent to determine the extent to which each of these dimensions of institutional isomorphism influences firms' behavioural change in Ghana. Mimetic isomorphism was operationally defined in this study as the pressure to copy legitimised 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 who compels firms to change their behaviour and practice to that acceptable by those exerting the pressure. The pressure may come from regulatory bodies and/or the general public in the form of pressure group. Coercive isomorphism was determined by assessing the extent to which firms' EAP is influenced by guidelines provided by the EPA Ghana, Ghana stock exchange, the security and exchange commission, the minerals commission, civil group organisation and other societal pressure groups. Subsequently, 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. A composite variable was created for normative isomorphism, with higher scores suggesting higher coercive isomorphism with good validity and internal consistency (Cronbach's $\alpha = 0.77$).

Environmental management accounting technique implementation

EMAT implementation was operationally defined in this study as any accounting process designed and implemented by management to assess, measure and communicate firms' environmental impacts to management for internal decision making. The measurement of this variable has been extensively studied with extant literature providing a different perspective on how the variable should be measured. For example, Frost and Wilmshurst (2000) provided five EMAT perspectives which provide evidence of the existence of EMAT implementation. The five perspectives included whether:

I. The firm includes environmental information within the formal management accounting system.

II. The firm undertakes formal accounting procedures for a number of specific environmental issues.

III. The firm undertakes cost-benefit analysis to determine the viability of various actions which include the consideration of environmental issues.

IV. The firm undertakes audits of the environmental issues impacting on the firm as a result of the firm's activities

V. The firm reports environmental information to external stakeholders.

The five perspectives employed by Frost and Wilmshurst (2000) were adapted by Khalid, Lord, and Dixon (2012) in a study to measure EMAT implementation in environmentally sensitive industries in Malaysia. However, unlike Frost and Wilmshurst, Khalid et al. added an additional perspective which assessed whether firms had processes and procedures to enhance environmental conservation. Other studies including Frost and Seamer (2002), Ribeiro and Aibar-Guzman (2010) and Mokhtar et al. (2016) measured EMAT implementation relying on Frost and Wilmshurst. The former measured EMAT implementation using a binary approach. Respondents were to respond yes if their firm had the item in place and no if they did not. Scoring was achieved by assigning 1 if it was yes and 0 if it was no. Frost and Seamer (2002) used a weighted score to measure EMAT. A score of two if the item was implemented, one if there were plans to implement them and zero if it was not implemented and there were no plans for future implementation.

Mokhtar et al. (2016) used a Likert scale to measure the EMAT while, Ribeiro and Aibar-Guzman (2010) developed a checklist for content analysis of financial reports to measure the variable. This study adapted Frost and Wilmshurst's (2000) approach to measuring EMAT by adopting four of the five perspectives applied in that study. The fifth perspective (The firm reports

environmental information to external stakeholders) is a variable that was looked at extensively from a different perspective in this study. This current study adapted the instruments developed from four out of the five Frost and Wilmshurst's perspectives. This is mainly because, firstly, it is popular as a means to measuring EMAT implementation within the study area. Secondly, it conforms to prior studies and therefore makes comparability more meaningful. Thus, EMAT was measured with four strands involving environmentally related sub-constructs. The domains included 1) the inclusion of environmental information within the management accounting and control systems (CS) (with 9 items such as the costing system, the budgeting system, capital budgeting and expenditure, Investment appraisal, Performance measurement and appraisal, Internal reporting mechanisms, Risk assessment, Purchasing policy, and Plant maintenance.); 2) the quantification of specific environmental issues including standalone environmental accounting (SEA) procedures (with 11 items such as waste, emissions and effluents, raw materials usage, energy usage, Recycled materials usage, Returnable packaging/containers, Pollution (i.e., air, water, land), Land remediation/Accounting for rehabilitation, Environmental contingent liabilities, Life cycle cost analysis in product development, Compliance costs of environmental regulations, and Environmental costs in production costs.); 3) the inclusion of environmental information in areas of cost-benefit analysis (CBA) (with 8 items including energy efficiency, by product use, Recyclable containers/packaging, Waste management, Environmental contingent liabilities, Environmental compliance, Site contamination and Site cleanup.), and 4) the undertaking of various audits concerning environmental issues

impacting on the firm based on its activities (AEI) (with three items including general environmental audit, waste audit and energy audit). The specific items were recorded using a five-point Likert scale: 1= never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often. We computed a scale variable ranging from 31 to 155 with higher scores reflecting higher EMAT practices. The variable had a good validity and internal consistency (Cronbach's α = 0.94).

Environmental accountability practice

EAP was operationally defined in this study as any environmental information (positive or negative, figures, sentence, phrase or words) disclosed in a firm's financial report or in a standalone environmental report. Prior studies have measured this variable using content analysis of the financial report and standalone report of the reporting entities (see, Adams & Kuasirikun 2000; Cho et al., 2010; Clarkson et al., 2011). This approach is often based on the assumption that the volume of environmental information disclosed by firms demonstrate the significance the firm places on environmental concerns. Word count, sentence or phrase count, paragraph count or page count, have all been used to determine the extent of firm environmental disclosure in prior studies. However, the use of these sentence or phrase, paragraph or pages as a means to determine the extent of firms' EAP has been found to be problematic. For example, differences in writing style in terms of font style and size including the succinctness in writing across firms have been found to be a challenge and therefore using this approach relies heavily on the subjective judgement of the researcher (Brammer & Pavelin, 2006; Hackston & Milne, 1996).

Gray et al. (1995) contend that sentences become the most preferred approach if the objective is to deduce meaning. Words, paragraphs and pages in themselves do not carry meanings but the sentences do and therefore sentences become the best basis for measuring EAP (Milne & Adler 1999). Thus, the use of sentences to measure the extent of firms' EAP becomes the remedy to problems associated with word count, paragraph count or pages count (Hackston & Milne, 1999). Though a bit subjective, a more objective measure is to develop an environmental disclosure index (EDI) for which the content of the annual report/standalone report is matched to determine the extent of EAP.

In the context of this study, 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) (Adams & Kuasirikun, 2000; Ceulemans, Lozano, Alonso-Almeida, 2015). 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 (KMPG, 2013; Ceulemans, Lozano, & Alonso-almeida, 2015). The EDI was taken from a similar one developed by Clarkson et al. (2008; 2011). 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). The hard disclosures represent quantified environmental information that can easily be verified whiles soft disclosures are environmental informations that comes in narrative forms Clarkson et al. (2008, 2011). A latent variable was created for EAP, with higher scores suggesting higher levels of EAP with strong validity and internal consistency (Cronbach's α = 0.96).

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, which is represented by the volume of shares government has 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).

Firm size

Extant literature has recorded the significant impact of firm size on EAP (Tarus, 2020; Nguyen, 2020; Olowookere, Taiwo, & Onifade, 2021), and for this reason, several ways of estimating firm size have been employed. These include – total assets, sales, current assets, market values of equity, etc. However, this study excludes firm size to minimise arbitrary in the estimation.

For instance, the basis upon which relevant years would be selected and averaged for a cross-sectional study would increase the level of subjectivity. The degree of subjectivity of including firm size as part of this study is likely to influence the outcome of the study (Silberzahn et al., 2018).

Table 2: Operational definition of variables

Operational definition of variables		
Variables	**Operational definition**	**Author(s)**
Isomorphism	Those institutional pressures that trigger change in internal behaviour of firms towards convergence in EA practices.	DiMaggio & Powell, 1983)
Mimetic isomorphism	The pressure to copy legitimised practices of other firms in the face of uncertainties.	(DiMaggio & Powell, 1983)
Coercive isomorphism	The pressure Emanating from dominant stakeholders which compels firms to change their behaviour and practice to that acceptable by those exerting the pressure.	Nyahas, et al., (2017)
Normative Isomorphism	The pressure from a professional body, institution, or a professional association the firm or its key personnel are associated with, to engage in legitimised practices.	(Aziz, Senik, Yau, San, & Attan, 2017).
Environmental management accounting implementation	Accounting process designed and implemented by management to assess, measures and communicate firms' environmental impacts to management for internal decision making that seek to improve the firm's EP.	(Bennett et al., 2003; Solovida, & Latan 2016)
Environmental Accountability Practice	The disclose of environmentally-related information concerning a firm's environmental performance to those who are affected by the firm's decisions and action	(Gray, Owen & Adams, 1996)

Data Collection Instruments

Data collection instruments are those devices used to elicit responses from respondents during a research project. They may include but not limited to survey questionnaires, interview guide, observations and content analysis. One or a combination of these instruments can be adopted in a particular research study for data collection. However, the choice of the instrument will, to a large extent, be influenced by the research objectives (Canals, 2017). The

reliability and validity of the measuring instrument is key in the production of accurate information for the variable of interest and therefore, each may be tested in turns, especially if the instrument has just been developed for the study (Fagarasanu, & Kumar, 2002). The instruments used for collecting the data were in two folds, namely, survey questionnaires and an environmental disclosure index (EDI). While the survey instrument was used to gather data for the isomorphic factors and EMAT implementation, the EDI was applied to the annual report and information on the firms' website to assess the extent of the EAP of the reporting entities.

Survey questionnaires

The survey questionnaires were adopted from prior studies with variables similar to those of this current study. The questionnaires were self-administered. This approach was adopted for several reasons. Firstly, it keeps the response bias at the barest minimum. Secondly, respondents have the time to carefully respond to the questionnaires. Thirdly, it is mostly considered comparably anonymous than interviewer-delivered questionnaires and therefore gives the respondent the confidence to provide a more accurate result. As submitted by Shi and Yu (2013), questionnaires are more appropriate in a quantitative study where the number of respondents are large. A five-point Likert scale was designed to collect the data for the isomorphic factors and EMAT implementation. Considering the target respondents of 224 for the current study, a survey questionnaire was considered a better alternative and therefore was preferred.

The items included in the Likert Scale for measuring the isomorphic factors were taken entirely from prior studies (see, Aziz, Senik, Yau, San, &

Attan, 2017; Nyahas, et al., 2017). As indicated by DiMaggio and Powell (1983), the isomorphic factors comprise three dimensions: mimetic, coercive and normative. Three items each were in the questions to measure mimetic and coercive isomorphism respectively while four items went for normative isomorphism. Similarly, data on EMAT were gathered using a 5-point Likert scale which was developed based on Frost and Wilmshurst's (2000) four out of the five perspectives employed to measuring EMAT. The fifth perspective, whether the firm reports environmental information to external stakeholders, is a variable that was looked at extensively as a distinct variable in this study, hence its exclusion from the EMAT measure.

The questionnaires were categorised into three different sections with each section targeting a particular variable as follows:

a. Section 1: background information of the firm;
b. Section 2: Institutional isomorphism – to examine the presence of external pressure in firms' EA behaviour.
c. Section 3: Environmental management accounting technique implementation to measure the degree of EMAT implementation by the firms.

The first section of the instruments focused on the general information of the study units. Here, issues such as the number of years the firm has been operating in Ghana, the industry the firm operates in Ghana, the name of the firm, the position the respondent holds within the firm, the location of the firm's head office, and the extent of government interest were all examined. The section provides background information on the respective firms included in the sample frame.

The second section of the instrument centred on the measuring the construct, institutional isomorphism. As explained earlier, the construct isomorphism was measured based on three variables as proxies: Mimetic, coercive and normative isomorphism. The survey questionnaire was adapted from Nyahas et al. (2017) to measure this construct. The adapted questionnaires used had already gone through both validity and reliability test for its suitability in measuring the construct. Questions were asked for respondents to indicate their responses on a five-point Likert scale which ranged from 1 to 5 on a continuous basis; 1 represents firms' strong non-adherence to the question posed and five being very high adherence to the question.

The third section of the instrument measured the constructed EMAT implementation'. The questionnaires for this construct were adapted from Frost and Wilmshurst (2000). Four out of the five perspectives employed by Frost and Wilmshurst were the focus of this construct as it has already been discussed. A total of 31 items were developed from the four selected perspectives for the construction of the questionnaire. These 31 items were all be taken from prior studies with occasional modifications to suit the study interest. Responses from respondents were taken using a five-point Likert scale. The scale ranged from (1), which represented 'never used or never applied the item', to (5) which meant 'very often used or very often applied the item'. Five-point Likert scales were adopted because the questionnaires were adapted from studies which also used a five Likert scale. The researcher found the use of the five Likert scales justifiable for the sake of consistency and comparability of the results with the study from which the questionnaires

were adopted. Further, Sachdev and Verma (2004) also contend that a five-point Likert scale reduces frustration and improves both quality and response rate.

Environmental disclosure index

The EDI was used to collect the data to measure EAP among the studied firms. The instrument was largely influenced by instrument from extent literature that had been used to measure the same variables in similar studies. The EDI index was based on the environmental section of the global reporting initiative. To examine firms' EAP, a content analysis of the annual reports of the firms included in the study were examined. The financial statement and any other standalone environmental report included in the annual report of the reporting entity and those at the firms' website were source of the data. The use of the annual report was essential, as it is considered best approach to determine how business entities react to issues confronting their operations. The environmental disclosure index was used as a benchmark to determine the extent to which the financial statement or the standalone environmental report has the item in the disclosure index. The content analysis of the annual report remains the most popular approach to examining environmental accountability practices among the firms (Bowman, 1984; Zeghal & Ahmed, 1990).

The annual report was the major source of data for EAP together with the website of the studied firms. The annual report for the year ending 2018 was chosen. The COVID pandemic broke out at the latter part of 2019. This made it difficult to get the financial statement for 2019 and 2020. As a result, business activities got disrupted, making it difficult for firms in Ghana to

report on their operational activities. Consequently, the firms in Ghana were given special dispensation to delay the publication of their annual report. This made the 2018 annual report the annual reports available at the period of study

Table 3: Source of research instruments and their scale of measurement

Variable	Author(s)	No of items	Response form
Mimetic Isomorphism	Nyahas, et al. (2017)	3	5-Point rating scale (Never-Very often)
Coercive Isomorphism	Nyahas, et al. (2017)	3	5-Point rating scale (Never-Very often)
Normative Isomorphism	Nyahas, et al. (2017)	4	5-Point rating scale (Never-Very often)
Environmental Accountability	Clarkson et al. (2008, 2011) Mokhtar et al. (2016)	46	Disclosure index Binary
Environmental management accounting	Frost & Seamer (2002); Frost & Wilmshurst (2000)	31	5-Point rating scale (Never-Very often)

Data collection procedure

The data collection for the study started with an initial contact with the respondent made through the telephone to brief them about the nature and purpose of the study and assure them of the confidentiality of their data. The purpose of the telephone contact was to ascertain the willingness of the potential firms to participate in the study. 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 favourable. The final instrument was administered to the remaining 214 respondents through face-to-face administration using self-administered procedure. The actual data collection spanned a period of six months, beginning from 5th September, 2020 to 11th December, 2020. Altogether, 169

inclding the 10 questionnaires earlier administered were received from the respondent. Thereafter, three questionnaires were found to have 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 (Adam, 2020).

Data from the annual report and the firm's website were taking concurrently with the questionnaire administration. The EDI was used as a benchmark to determine the extent to which the annual report or the standalone environmental report has the item in the disclosure index as a means to measure the firms EAP. (Bowman, 1984; Zeghal & Ahmed, 1990). A distinction was made between numerical environmental disclosures and non-numerical disclosures though the study did not place a weight on the data whether it is numerical or non-numerical.

A pre-test of the instrument for the quantitative data were conducted to test the reliability and validity of the instrument. The pre-test also helped to eliminate instrumentrelated issues such as common method bias, social desirability bias and misinterpretation of the questions (Collins, 2003; Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). The pre-test was conducted on a few firms.

Reliability and validity

Reliability and validity are very fundamental concepts to every empirical study. They involve measurement in questionnaire design which

provides assurance on the basis that the items in the questionnaires measure that which it claims to measure. (Bryman & Bell, 2007; Pallant, 2020).

Reliability

Reliability can be achieved if the researcher's data collection techniques and analytical procedures would reproduce consistent findings if they were to be repeated on a different occasion or if they were to be replicated by another researcher. To ensure the reliability of the data collection instrument, the study adapted questionnaires from prior studies that have been used to measure the construct over time and by different researchers. That notwithstanding, a reliability test using Cronbach's alpha Coefficient was conducted to test the internal reliability of the questionnaire for confirmatory purposes (Saunders, Lewis & Thornhill, 20012:369). Cronbach's alpha demonstrates the extent to which the items in the questionnaire are homogeneous and reflect the same underlying construct (Cooper & Schindler, 2006). It has been argued by De Vaus (2002) that Cronbach's alpha of 0.8 is acceptable. Smith (2011) and Bryman and Bell (2011) also contend that 0.6 and 0.7 respectively should be the acceptable Cronbach's alpha. The alpha coefficient ranges from 0 to 1. The higher the value, the more the items in the questionnaire are more homogeneous and has internal consistency. This study benchmarks Bryman and Bell by using the instrument only if it achieves a Cronbach's alpha of 0.7 or better. The test was calculated on questionnaire items on isomorphic factors, EMAT implementation and EAP.

Validity

Validity refers to the degree to which a measuring instrument measures that which it purports to measure. Every instrument that passes the validity test

is reliable. However, not every instrument that passes the reliability test may be classified valid (Kimberlin & Winterstein, 2008). To ensure validity of the construct, the researcher conducted a pre-test to establish the degree to which the items are good representation of what they intend to measure. Expert opinions were obtained on the presentation of the questionnaire items and their appropriateness in terms of their relevance, reasonableness, and unambiguousness (Bowling, 2009). According to Dillman (1978, 1999), the purpose of pre-test is to test both the research questions and the questionnaires for its reliability and validity.

Ethical Considerations

Ethical considerations are essential in every research endeavour. In business research, ethics are considered as a code of conduct or an expected standard of behaviour to be followed by researchers whiles conducting a research study (Sekaran, 2003, p. 17). Ghauri and Gronhaug (2005) submit that ethical issues requiring attention in business research need to be addressed effectively at the early stage of the research process. Participation in the research process should be based on informed consent of the participants. Thus, a researcher must provide adequate information and assurance to the participant about taking part in the research and the likely implications to enable them to make an informed decision as to whether to participate or withdraw without any undue influence (Saunders, Lewis, & Thornhill, 2012). Besides, the researcher is expected to avoid unethical behaviour such as violating non-disclosure agreements, breaking confidentiality, and misrepresenting research findings to protect the participant from any damage

resulting as a direct consequence of the research (Cooper, Schindler & Sun, 2006).

This study was conducted in line with the generally accepted ethical guidelines of academic research and specifically those of the University of Cape Coast. Also, in adherence to the University regulations, a research ethics clearance was sought from the University's Institutional Review Board before data collection commenced. This was done to ensure that the participating firms are not harmed in any way because of the study. Participants were assured of privacy; confidentiality and complete anonymity throughout the research process. To fulfil the ethical issue of consent, detailed information about the study on the purpose, nature and the possible implications of the study were provided to the participating firms in order to allow them to freely decide on whether to participate or not.

Data Processing and Analysis

The statistical analysis was performed in four 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, Pearson's correlations of relevant exposure variables and their sub-constructs with the outcome variables were estimated. 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.

Third, taking into consideration the measurement levels of the key outcomes' variable of interest, a three-stage multiple linear regression model was built in which the outcome variable index for each section was regressed

on the key respective explanatory variables to test the specific and crude effect of the corresponding relationships. In the first stage, the unadjusted associations were separately modelled to investigate the specific crude effects of the core independent variables. Moreover, we included the control variables by adjusting for theoretical industry characteristics of interest in each model to further investigate the relative impact of exposure variables. Regression coefficients were calculated to achieve objectives 1-3. The regression moedels used for each objective followed the following equations:

Regression model used to achive objective 1:

$$EAP = \alpha + \sum_{i=1} \gamma_i DISF_i + \sum_{i=1} \beta_i Confounder_i + \varepsilon_i$$

Where EAP is envivornmental accountability performance, $DISF_i$ is a vector of dimensions of isomorphic factors, $Confounder_i$ is vector of confounding factors and ε_i is the error term.

Regression model used to achieve objective 2:

$$EMAT = \emptyset + \sum_{i=1} \delta_i DISF_i + \sum_{i=1} \varphi_i Confounder_i + \varepsilon_i$$

Where $EMAT$ is envivornmental management accounting implementation technique, $DISF_i$ is a vector of dimensions of isomorphic factors, $Confounder_i$ is vector of confounding factors and ε_i is the error term.

Regression model used to achieved Objective 3:

$$EAP = \alpha + \sum_{i=1} \rho_i DEMAT_i + \sum_{i=1} \pi Confounder_i + \varepsilon_i$$

Where EAP is envivornmental accountability performance, $DEMAT_i$ is a vector of dimensions of EMAT, $Confounder_i$ is vector of confounding factors and ε_i is the error term.

The objective 4 was achieved by emplying the Chi-Square test of difference. In the final phase of the analysis, multivariate estimation using Model 4 in SPSS PROCESS Macro Hayes's version 3.5 was performed to determine the hypothesized relationship among ISF, EMAT, and EAP. This also estimated the mediating role of EMAT implementation in the relationship between ISF and EAP while controlling for firms' characteristics. PROCESS employs a path analytic framework and a bootstrapping approach to deliver powerful estimates of direct and indirect effects. The indirect effect was tested using a bootstrapping estimation approach with a bootstrap sample of 5000 at a 95% bias-corrected confidence interval (95% BCCI). The bootstrapping technique employed a random resampling process to approximate the statistics on a sample by sampling the available dataset with 5000 replacements. The bootstrapping technique offers an efficient means to guarantee that the models employed were constant and reliable for the analysis to produce more precise results. It allowed inferences about indirect effects to be made. The endpoints of the confidence interval are defined by percentiles in the allocation of bootstrap estimates of the indirect effect. The mediating effect of EMAT was confirmed with lower and upper limit values of the confidence intervals. The assumption is that the interval between the lower and upper limits should not contain 0 for the mediation to be significant. Thus, both bunds should either be positive or negative.

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. Also, normality tests using both the Kolmogorov-Smirnov and Shapiro-Wilk were employed to examining the nature of the distribution used for the analysis. Notwithstanding, since the Kolmogorov-Smirnov test is more robust to assessing normality for more than 50 samples (Adam, 2015), much emphasis would be given to this test. 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).

Chapter Summary

The chapter dealt with the research methodology adopted to achieve the purpose of the study. It commenced with a discussion on the philosophy of the research. The study adopted the positivists stance and justified the choice philosophy. The chapter further discusses the research approach, research design, the sample frame, the strategy for data collection and analysis. The chapter also discussed several issues meant to deal with validity and reliability issues often associated with the use of research instrument. The chapter concludes with ethical considerations associated with this research.

CHAPTER FIVE

RESULTS AND DISCUSSION

Introduction

The preceding chapter discussed the research methods employed to achieve the objectives of the study. This chapter presents the results and discusses the findings of the study. The first section deals with presentation of the descriptive analysis which provided critical description of the study variables as well as the firms enlisted in this study. The results and the findings of the substantive objective are presented in the subsequent three sections based on the objectives of the study. The second section investigates the relationship between the isomorphic factors and EAP. The third section investigates the relationship between the isomorphic factors and EMAT implementation. The fourth section assesses the effect of EMAT implementation on EAP. This section will further determine the extent to which firms in Ghana implement EMAT from the perspective of the social issue life cycle theory and its relationship with EAP. Finally, the section examines the mediating effect of EMAT implementation in the relationship between the isomorphic factors and EAP of firms in Ghana.

Descriptive Statistics of Study Variables

This section presents characteristics of studied firms and industry; followed with the descriptive statistics of the study variables. This includes measures of central tendencies and dispersion, reliability of key constructs, test of normality and correlation measures.

Table 4 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.

Table 4. Industry and Firm characteristics

Variable	N = 166	(%)
Kind of industry		
Mining	18	11.0
Manufacturing	132	80.5
Construction	6	3.7
Oil and Gas	4	2.4
Transport	4	2.4
Position		
Finance Manager/Accountant	134	83.8
Manager	26	16.2
Limited liability		
No	2	1.2
Yes	164	98.8
Extent of government interest in the firm		
Otherwise	164	98.8
Above 50%	2	1.2
Firm has foreigners as member of the board		
No	62	37.3
Yes	104	62.7
Firm is subsidiary		
No	64	38.6
Yes	102	61.4
Listed on the Ghana stock exchange		
No	130	78.3
Yes	36	21.7

Source: Field Survey (2020)

Table 5 presents the mean scores and the corresponding standard deviations (±SD) for the core variables included in the study. Results showed that the mean scores of EMAT was 3.10 (SD = 0.76) whilst overall EAP score was 17.35 (SD = 21.15). In addition, the average score for each of the sub-constructs of EMAT and EAP were estimated. 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).

Table 5. Means and standard deviation of the core study variables

	Mean	(±SD)
Overall ISF Index	32.17	(4.91)
ISFM	9.41	(2.72)
ISFC	10.40	(2.28)
ISFN	12.36	(2.37)
EMAT overall score	3.10	(0.76)
Control Systems	3.35	(0.89)
Standalone Environmental Account	2.92	(0.77)
Cost-Benefit Analysis	2.97	(0.82)
Audits Environmental Issues	3.39	(1.04)
EAP overall score	17.35	(21.15)
Hard Disclosure (HD)	12.63	(17.45)
Soft Disclosure (SD)	4.72	(4.34)

Note: EAP = environmental accounting practice; EMAT = environmental management accountability technology; ISF = institutional isomorphism; ISFM = mimetic isomorphic factors; ISFC = coercive isomorphic factors; ISFN = normative isomorphic factors.
Source: Field Survey (2020)

The reliability measure and the number of items of test constructs of both dependent and independent variables are presented in Table 6. 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 HD and SD. The overall ISF was α = 0.78, and its sub-constructs were ISFM (α = 0.69), ISFC (α = 0.71), and ISFN (α = 0.77). In addition, the reliability of the composite EMAT (α = 0.94) as well as its dimensions including CS (α = 0.91), SEA (α = 0.80), CBA (α = 0.74) and AEI (α = 0.82) were realized. Moreover, the composite EAP variable (α = 0.955), and its sub-constructs, namely, hard (α = .946), and soft disclosures (α = .946) also revealed strong reliability level beyond the recommended threshold acceptable for Cronbach's alpha (Bryman, 2011) who suggest 0.6 and 0.7 as acceptable Cronbach's alphas.

Table 6. The reliability test statistics of survey constructs

	Cronbach's Alpha	N of Items
ISF overall	.781	9
ISFM	.694	3
ISFC	.711	3
ISFN	.774	3
EMA	.935	31
Control Systems	.907	9
Standalone Envt. Acct	.803	11
Cost-Benefit Analysis	.742	8
Audits Envt. Issues	.820	3
EAP	.955	45
Hard Disclosure	.946	29
Soft Disclosure	.887	16

Source: Field Survey (2020)

Table 7 provides the distribution of the normality test for the core study variables. The EAP ($p < 0.05$) and EMAT scores ($p < 0.05$) showed deviation from the assumption of normality and that the constructs were not deemed to be normally distributed as indicated by both the Kolmogorov-Smirnov and the Shapiro-Wilk. However, since the sample size of the study is more the 50, the Kolmogorov-Smirnov test is more preferred to the Shapiro-Wilk test (Adam, 2015). In this regard, a nonparametric spearman's rho correlation coefficient tests were considered in the bivariate associations between variables of interest.

Table 7. Test of normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
EAP	.304	166	.000	.751	166	.000
EMA	.116	166	.000	.971	166	.002
ISF	.067	166	.069	.976	166	.006

a. Lilliefors Significance Correction

Source: Field Survey (2020)

Table 8. Spearman's rho Correlation Coefficient

	EAP	*HD*	*SD*	**EMA**	*CSs*	*SEAs*	*CBAs*	*AEIs*	**ISF**	*ISFM*	*ISFC*	*ISFN*
EAP	1	.916**	.878**	.434**	.357**	.394**	.389**	.412**	.204**	.049	.101	.254**
HD		1	.671**	.422**	.292**	.388**	.426**	.405**	.233**	.077	.137	.242**
SD			1	.382**	.356**	.354**	.268**	.330**	.129	.009	-.006	.243**
EMA				1	.832**	.936**	.890**	.753**	.309**	.101	.154*	.392**
CS					1	.693**	.595**	.608**	.278**	.097	.120	.345**
SEA						1	.824**	.613**	.296**	.151	.158*	.306**
CBA							1	.690**	.273**	.069	.171*	.363**
AEI								1	.225**	.007	.076	.373**
ISF									1	.715**	.597**	.676**
ISFM										1	.112	.255**
ISFC											1	.241**
ISFN												1

Note: EAP = environmental accountability practice; ISF = institutional isomorphism; ISFM = mimetic isomorphic factors; ISFC = coercive isomorphic factors; ISFN = normative isomorphic factors; HAD = hard disclosure; SOD = soft disclosure. CS = Inclusion of environmental information within the management accounting and control systems; SEA = Quantification of specific environmental issues including standalone environmental accounting procedures; CBA = Inclusion of environmental information in areas of cost-benefit analysis; AEI = Undertaking of various audits concerning environmental issues impacting on the firm based on its activities

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$.

Source: Field Survey (2020)

Table 9. Summary of Test Constructs

	Mean		95% Confidence Interval for Mean		Variance	Std. Deviation	Min.	Max.	Skewness		Kurtosis	
		Std.	LB	UB						Std.		Std.
	Statistic	Error	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Error	Statistic	Error
EAP	17.35	1.64	14.1076	20.5912	447.501	21.15423	.00	72.00	1.304	.188	.293	.375
Hd	12.63	1.35	9.9529	15.3001	304.381	17.44651	.00	56.00	1.303	.188	.184	.375
Sd	4.72	.337	4.0572	5.3886	18.868	4.34375	.00	16.00	.932	.188	.116	.375
EMA	3.10	.059	2.9884	3.2199	.570	.75528	1.61	4.97	-.025	.188	-.353	.375
Cs	3.35	.069	3.2144	3.4898	.807	.89857	1.44	5.00	-.371	.188	-.782	.375
Sea	2.92	.06	2.7992	3.0365	.600	.77445	1.45	5.00	.351	.188	.013	.375
Cba	2.97	.064	2.8460	3.0997	.685	.82780	1.00	5.00	-.014	.188	-.169	.375
Aei	3.39	.081	3.2329	3.5543	1.099	1.04851	1.00	5.00	-.474	.188	-.525	.375
ISF	32.17	.381	31.4161	32.9213	24.117	4.91089	20.00	41.00	-.141	.188	-.295	.375
Isfm	9.41	.211	8.9922	9.8271	7.419	2.72379	3.00	15.00	-.370	.188	.099	.375
Isfc	10.40	.177	10.0478	10.7474	5.211	2.28269	5.00	15.00	.100	.188	-.550	.375
Isfn	12.36	.184	11.9976	12.7253	5.638	2.37450	5.00	15.00	-1.060	.188	.880	.375

Source: Field Survey (2020)

The nonparametric spearman's rho correlation coefficient was examined for the test variables. This is because, the normality test for ISF (p < 0.05) and EMAT (p < 0.05) showed deviation from the assumption of normality with the exception of ISF variable (p = 0.05). As shown in Table 8, the spearman's rho correlation coefficient among the independent sub-construct variables mimetic (ISFM), coercive (ISFC) and normative (ISFN) isomorphic factors were less than 0.5. Thus, the concern of multicollinearity was not significant, and that all the variables were kept in the subsequent regression analyses. Particularly, all dimensions of the independent variable were regressed against the dependent variable.

The correlation coefficient between the composite variable ISF and EMAT though significant showed a weak relationship. Moreover, overall scores of EMAT and EAP revealed a strong correlation (r = .434, p < 0.01). All other sub-constructs showed significant association among them. The correlation coefficient between ISF and EAP, although significant, showed a weak relationship. Evidently, the two sub-constructs, HD and SD showed no significant correlation in all but one independent sub-construct ISFN (p = 0.204, p < 0.01). Evidently, the four aspects EMAT showed no significant correlation in all but one independent sub-construct ISFN (*rho* = 0.204, p < 0.01). Previous correlation analysis demonstrated a significant direct relationship between core study measures and variables (i.e., EMAT and ISF) and their dimensions and sub-constructs. Table 9 presents some further details of all the test constructs. It presents summary statistics for a measure of central tendency (mean), measures of dispersion (standard deviation and variance), and the distribution of the data (skewness and kurtosis). It can be observed

from Table 9 that the observations for EAP and ISF are more dispersed as compared to EMA. Notwithstanding, the distribution of the entire responses for both the constructs and indicators approach symmetry and not too peaked, as indicated by the skewness and kurtosis measures respectively.

Isomorphic Factors and Environmental Accountability Practice

This section of the study presents the analysis and result on the relationship between the isomorphic factors and EAP of environmentally sensitive firms in Ghana. Three hypotheses proposed to test the three dimensions of the institutional isomorphic factors on EAP were dealt with. these hypotheses included:

H1: There is a significant positive relationship between mimetic isomorphism and EAP.

H2: There is a significant positive relationship between coercive isomorphism and EAP.

H3: There is a significant positive relationship between normative isomorphism and EAP.

Results

A series of multiple regressions were performed to predict the EAP outcome measures and are presented in Table 10 (see Appendix A for detailed regression results). 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 (β = 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 10. 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.
*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$
Source: Field Survey (2020)

Table 11 shows the results of the effect of mimetic, coercive, and normative isomorphic factors on EAP, with further adjustments the for firm characteristics as potential confounders (see Appendix B for detailed regression results). 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 11. 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, **p < 0.01, ***p < 0.001
Source: Field Survey (2020)

Table 12. 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
Source: Field Survey (2020)

An additional analysis was performed to investigate the associations between a composite ISF score and EAP and is presented in Table 12 (see Appendix C for detailed regression results). 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 (β = 0.243, p = 0.054).

Discussion

Previous research has shown considerable evidence of the associations between specific isomorphic factors and environmental accountability 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 study 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 practices 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) and Setyorini and Ishak (2012) 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 Nyhas et al. (2017) who found a less significant association between mimetic influence and voluntary disclosure. Similarly, Welbeck (2017) did not find mimetic pressure to influence corporate responsibility disclosures in Ghana. Welbeck's 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' behaviour. 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 (Martínez-Ferrero, García-Sánchez, 2017; Welbeck, 2017). 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 Pfarrer et al. (2005). 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 (Alshbili, Elamer, 2020; Nyhas et al. 2017), 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 (Adjarko, Gemadzie, 2016; Anku-Tsede, Deffor, 2014). Mere laws and regulations may not exert effective influence without a corresponding appropriate enforcement practice (Defond, M.L.; Hung, 2004; Durnev, 2005 Kim, 2005; Garcia-Sanchez, Cuadrado-Ballesteros, Frias-Aceituno, 2016).

Isomorphic Factors and Environmental Management Accounting Techniques

This section of the study presents the analysis and result on the relationship between the isomorphic factors and EMAT of environmentally sensitive firms in Ghana. Three hypotheses proposed to test the three dimensions of the institutional isomorphic factors on EMAT were dealt with. These hypotheses included:

H4: There is a significant positive relationship between mimetic isomorphism and EMAT implementation among Ghanaian firms.

H5: There is a significant positive relationship between coercive isomorphism and EMAT implementation among Ghanaian firms.

H6: There is a significant positive relationship between normative isomorphism and EMAT implementation among Ghanaian firms.

Results

Analysis with unadjusted linear regression model calculating the crude regression coefficients for the specific isomorphic factor-dimensions was significant ($p < 0.001$) in predicting EMAT. In this analysis, we found that mimetic, coercive and normative isomorphic factors were independently and

positively associated with the EMAT as presented in Table 13 (see Appendix D for detailed regression results).

Table 13. Unadjusted association between isomorphic factors (ISFM, ISFC and ISFN) and composite EMAT

Dependent variable: EMAT	*Beta* Coefficient	Std. Error	VIF
Intercept	12.008**	3.978	
ISFM	.099*	.221	1.059
ISFC	.153**	.261	1.038
ISFN	1.265***	.258	1.095
Adjusted R^2	0.137		
F change	9.760 ***		

Notes: n = 166; *p < 0.05, **p < 0.01, ***p < 0.001
Source: Field Survey (2020)

Table 14 provides separate effects of mimetic, coercive and normative isomorphic factors on EMAT construct (see Appendix E for detailed regression results). After adjusting for the theoretically relevant control variables, the individual effects of the various dimensions of ISF on EMAT were diverse. Both coercive isomorphic factor (β = 0.097, p < 0.001) and normative isomorphic factor (β = 4.133, p < 0.001) showed significant and positive relationships with EMAT outcome.

Table 14. Aspects of Isomorphic Factors (ISFM, ISFC and ISFN) on EMAT

	Model 1	Model 2	Model 3	Model 4
Step 1: Control	√	√	√	√
Step 2: Main effects				
ISFM	0.006			-0.013
ISFC		0.097***		0.075**
ISFN			4.133***	0.089***
Adjusted R^2	0.190	0.252	0.269	.295
F change	6.526***	8.923***	9.655***	8.665***

Notes: n = 166; *p < 0.05, **p < 0.01, ***p < 0.001
√ = potential confounders
Source: Field Survey (2020)

However, the mimetic force did not reach robustness in relation to the EMAT (β = 0.006, p = 0.073). After full adjustment with control variables and IFS specific constructs in Model 4, our results showed that coercive and normative forces maintained their significance and direct of effect on EMAT although the effect size of normative factor reduced substantially (β = 0.08, p < 0.001) compared with the estimates in Model 3. That is to say that only ISFC and ISFN showed direct significant associations with EMAT. This finding support hypothesis 5 which hypothesised a strong positive relationship between coercive isomorphism and EMAT implementation among Ghanaian firms. Similarly, the finding also support hypothesis 6 which hypothesised there is a strong positive relationship between Normative isomorphism and EMAT implementation among Ghanaian firms. The findings however did not support hypothesis 4 which hypothesised a strong positive relationship between mimetic isomorphism and EMAT implementation among Ghanaian firms. In sensitivity analysis, we regressed separate models for the specific EMAT sub-constructs, namely CONTROL, STANDALONE, ENV COST and AUDIT as dependent variables on the ISF variables (Table 15 and 16, see Appendix F for detailed regression results). However, the results from these analyses were similar to the composite dimensions of EMAT.

Table 15. Results of regression analysis for individual dimensions ISFM, ISFC and ISFN with dimensions of EMAT

	CONTROL				STD-ALONE ENV.			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Step 1: Control	√	√	√	√	√	√	√	√
Step 2: Main effects								
ISFM	0.078			-0.101	0.357			0.178
ISFC		0.907**		0.709*		0.979**		0.727*
ISFN			0.877***	0.733**			0.910**	0.713*
Adjusted R^2	0.235	0.282	0.293	0.311	0.117	0.155	0.162	0.183
F change	8.232***	10.253***	10.762***	9.276***	.4.130***	5.340***	5.566***	5.102***

Notes: $n = 166$; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

Source: Field Survey (2020)

Table 16. Results of regression analysis for individual dimensions ISFM, ISFC and ISFN with dimensions of EMAT

	ENV. COST. BA				AUDIT			
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
Step 1: Control	√	√	√	√	√	√	√	√
Step 2: Main effects								
ISFM	-0.127			-0.305	-0.125			-0.188*
ISFC		0.869**		0.719**		0.238*		0.183
ISFN			0.830***	0.719***			0.329**	0.319**
Adjusted R^2	0.094	0.157	0.170	0.21	0.270	0.281	0.313	0.336
F change	3.457**	5.40***	5.844***	5.876***	9.705***	10.199***	11.759***	10.296***

Notes: $n = 166$; *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$
Source: Field Survey (2020)

Discussion

The Environmental management accounting (EMAT) implementation is deemed as important mechanism that may potentially offer effective control on the irresponsibility of firms toward the natural environment (Latif et al., 2020; Ferdous et al., 2019). Despite the significance, the effect of institutional forces and pressures on the EMAT implementation remains a relatively under-explored subject in sub-Saharan Africa. The study examined the effect of isomorphic factors on EMAT among environmentally sensitive firms in Ghana. Our analysis found, that the institutional isomorphic factors including the mimetic, coercive and normative pressures were significantly associated with EMAT implementation among selected sensitive firms in Ghana. Even after adjusting for the theoretically relevant confounders and the core independent variables, the multivariate regression analysis revealed robust and positive associations of coercive and normative institutional forces with EMAT practices in this context. Subsequent evaluation of these relationships showed that both dimensions contributed substantially to the four major aspects and sub-constructs of EMAT.

The present study provides some evidence to suggest that environmentally sensitive firms whose operational activities are tempered with higher institutional isomorphic pressures with particular reference to the coercive forces as well as normative pressures are more likely to adopt and also implement EMAT. In this regard, the effective role of the stakeholders in ensuring that firms maintain operational standards in their day-to-day activities remains critical.

Our finding that coercive isomorphism positively influenced EMAT implementation is interesting. This suggests that regulators, either in the form of the environmental protection agency (EPA), the Ghana stock exchange or industry specific regulators may be capable of influencing firms in Ghana to implement EMAT. It can be argued, that firms are very much concerned about issues bordering the legitimacy of their operational activities and may be willing to accede to pressure to sustain it. Since EMAT implementation is an initiative, the firm must adopt to ensure accurate capturing and measurement and reporting of environmentally related issues, firms are more likely to implement it with pressure from regulators. Though EMAT implementation is an internal activity, its absence could cause firms to fail in their environmental responsibility which may lead to having problems with the regulator. This result confirms the observations of Jamil et al. (2015) and Razaki et al. (2020) whose independent research found a significant positive relationship between coercive isomorphism and EMAT implementation. However, Jalaludin, Sulaiman, & Ahmad (2011) did not find a positive association between coercive force and EMAT implementation based on the analysis primary data.

The study found that normative isomorphism had a significant positive influence on EMAT implementation in Ghana. This finding is in line with most findings from studies investigating the relationship between normative isomorphism and EMAT implementation (Jalaludin et al. 2011; Latif et al. 2020). This finding may be related to the extent of influence of professional associations on the staff who are responsible for the environmental management accounting function. EMAT implementation is mostly the responsibility of the financial accountant in most Ghanaian firms. These

accountants are expected to demonstrate competence and high ethical behaviour by the Institute of Chartered Accountants Ghana (ICAG), the professional body responsible for overseeing the performance of accountants in Ghana. Similar to most professional associations, the ICAG has the power to withhold or withdraw a member's certificate if found acting unethically. Consequently, firms are more likely to implement EMAT if ICAG and other industrial association the firms are linked to, classifieds EMAT implementation as an internal control mechanism meant to help improve firm's environmental performance.

After full adjustment for all potential confounders, our analysis found insignificant relationship between mimetic isomorphism and EMAT implementation in this sample. This suggest that industry leaders, industry peers and strategy of competitors do not have much influence on firm's behaviour towards EMAT implementation. Mimetic isomorphic influence often results, when there are uncertainties surrounding the implementation of a particular policy or practice and therefore, it becomes necessary to imitate others who are already successful in the act (DiMaggio, & Powell, 1983; Saeed, et. al., 2018; Teo, Wei, & Benbasat, 2003). However, since EMAT involves using established management accounting techniques to manage firm's environmental performance, the uncertainties surrounding EMAT implementation may be reduced, as these techniques are known by most accountants. This, in turn, reduces the extent of uncertainties and the need to copy other firms. This finding is in line with prior studies (see, Jalaludin et al. 2011; Jamil et al. 2015; Razak, Ramli, and Rasit, 2020) who found less significant association between mimetic isomorphism and EMAT

implementation. Contrary, Latif et al. (2020) reported a strong positive relationship between mimetic pressure and the EMAT implementation. However, their study was limited to only the manufacturing sector limiting the comprehensiveness of the study. The study did not control for any variable to limit the possible influence of other variables on EMAT.

Environmental Management Accountability Techniques Implementation and Environmental Accountability Practices

This section of the study presents the analysis and results of the effect of EMAT implementation on EAP of environmentally sensitive firms in Ghana. The section will also determine the extent to which firms in Ghana implement EMAT, from the perspective of the social issue life cycle theory and its relationship with EAP. Two hypotheses were tested which proposed:

H7: A significant positive relationship between EMAT and EAP.

H8: The extent of EMAT implementation by firms in Ghana as per the social issue life cycle, has a significant positive relationship with the firm's EAP.

Results

Main regression models

Table 17 shows the crude effect of the association EMAT score and the overall EAP outcome in an OLS regression model in which EMAT was regressed on EAP (see Appendix G for detailed regression results). The results show that EMAT score was positively and significantly associated with increased EAP score (β = .384; p < .001). This model technically repeated the initial bivariate correlation analysis to estimate the variance explained by the independent variable, EMAT score in the regression model (R^2 = 15%).

Table 17. Relationship between EMA and EAP

Model		Unstd. Coeff		Std. Coeff		
		B	Std. Error	Beta	*t*	*p-value*
	(Constant)	-16.014	6.451		-2.482	.014
	EMA	10.748	2.020	.384	5.322	.000
R^2	.147					
Adj. R^2	.142					
F(1, 164)	28.320					
Sig.	.000					

a. Dependent Variable: EAP

Source: Field Survey (2020)

In Table 18, the various potential confounding variables constituting industry or firm characteristics that may affect EMAT, EAP or both were including adjusted for in the relationship between EMAT score and EAP outcome (see Appendix H for detailed regression results). These control variables included the firm's limited liability status, government interest in the firm's affairs, composition of the firm's board of directors, whether the firm is listed on the Ghana stock exchange, audit and having subsidiary firm with head office located outside Ghana.

The results revealed robustness from the unadjusted modelling such that there was a significant and positive association between EMAT and EAP outcome measure (β = .193; p < .05). That is to say that one unit increase in the EMAT score, resulted in about .193 unit increase in the EAP index. Whilst other control variables did not reach statistical significance, Audit (β = .437; p < .005) as well as whether the firm was listed on the Ghana stock exchange (β = -.217; p < .001) significantly related with the EAP score

Table 18. Relationship between EMA with Control variables and EAP

Model	Unstd. Coeff		Std. Coeff		
	B	Std. Error	Beta	t	Sig.
(Constant)	-12.200	13.637		-.895	.372
Limited liability company	7.597	13.138	.039	.578	.564
Government interest in the firm	10.197	13.334	.053	.765	.446
Foreigner on Board of Directors	1.368	4.266	.031	.321	.749
Having subsidiary firm abroad	.198	4.362	.005	.045	.964
Listed on the Ghana stock exchange	-11.097	4.075	-.217	-2.724	.007
AUDIT	19.498	3.687	.437	5.288	.000
EMAT	5.403	2.114	.193	2.556	.012
R^2	.302				
Adj. R^2	.271				
F(7, 158)	9.749				
Sig.	.000				

a. Dependent Variable: EAP
Source: Field Survey (2020)

Supplemental analysis was performed taking into consideration the fully adjusted stratified estimations of the relationship of EMAT sub-constructs with the EAP score (Table 19, see Appendix I for detailed regression results)) as well as the analysis of the association between EMAT sub-constructs and EAP sub-constructs (Table 18). The results in Table 17 showed significant and independent associations of EMAT_SEA (β = .202; p < .005) and EMAT_AEI (β = .080; p < .05) with EAP score. In addition, findings from Table 20 revealed that after controlling for potential covariates, EMAT SEA (β = .380; p < .001), EMA CBA (β = .510; p < .001) and EMAT AEI (β = .976; p < .001) were significantly associated with hard disclosure (DH) construct of the EAP but only EMAT SEA (β = .108; p < .001) was related with soft disclose (SD) of EAP.

Table 19. Relationship between EMA sub-constructs and EAP

Model	Unstd. Coeff B	Unstd. Coeff Std. Error	Std. Coeff Beta	t	*p*-value
(Constant)	-14.048	13.742		-1.022	.308
Limited liability company status	10.388	13.381	.054	.776	.439
Government interest in the firm	9.736	13.561	.050	.718	.474
Foreigner on Board of Directors	1.473	4.276	.034	.345	.731
Having subsidiary firm abroad	1.398	4.503	.032	.311	.757
Listed on the Ghana Stock exchange	-11.531	4.159	-.225	-2.772	.006
Audit	18.952	3.733	.425	5.077	.000
EMA_CS	-.310	.300	-.118	-1.033	.303
EMA_SEA	.501	.358	.202	1.400	.004
EMA_CBA	.132	.442	.041	.300	.765
EMA_AEI	.538	.731	.080	.735	.023
R^2	.314				
Adj. R^2	.270				
F(10, 155)	7.088				
Sig.	.000				

a. Dependent Variable: EAP

CS = Inclusion of environmental information within the management accounting and control systems; SEA = Quantification of specific environmental issues including standalone environmental accounting procedures; CBA = Inclusion of environmental information in areas of cost-benefit analysis; AEI = Undertaking of various audits concerning environmental issues impacting on the firm based on its activities

Source: Field Survey (2020)

Extent of EMAT Implementation and EAP Using Social Issue Life Cycle Model

Using the score of EMAT, all firms included in this study were classified into three social issue life cycle phases including: policy phase, learning phase and commitment phase. This classification of the variable was done mainly to ensure that the consistency of the EMAT variable is maintained for the social issue life cycle models.

Table 20. EMA sub-constructs on EAP

	EAP							
	HD				SD			
Covariates	√	√	√	√	√	√	√	√
EMA CS	.201				.072			
EMA SEA		.380*				.108**		
EMA CBA			.510**				.091	
EMA AEI				.976*				.133
R^2	.274	.297	.300	.289	.258	.283	.262	.251
Adj. R^2	.241	.266	.269	.258	.225	.252	.229	.218
F(7, 158)	8.504	9.529	9.667	9.186	7.850	8.930	7.997	7.582
Sig.	.000	.000	.000	.000	.000	.000	.000	.000

Source: Field Survey (2020)

The cut-off points were carefully determined to reflect the characteristics of social issue life cycle theory. This measurement is self-developed guided by the approach used by Nasi et al. (1997). This was carefully executed to meet the purpose of the analysis presented in this section. Given the responses to the items measuring the scale were based on a 5-point Likert scale ranging from 1 to 5, those with mean scores ≥3.6 were classified under Commitment phase which reflects a higher level EMAT implementation. In addition, firms with mean scores ranging from 2.0 to 3.59 were classified under learning phase and suggested a moderate extent of EMAT implementation. Finally, those with mean scores <2.0 were grouped under policy phase indicating a low level of implementation of EMAT. The 166 companies were grouped under the social issue life cycle phases reflecting a value ranging from 1 to 3 for Policy, Learning and Commitment phases respectively based on the following cut-off points:

Policy phase (= 1) if EMAT score ≤ 2.00

Learning phase (= 2) if EMAT score ranging from 2.01 to 3.59

Commitment phase (= 3) if EMAT score ≥ 3.60

For this categorisation purposes, although no EMAT score was computed for companies that marked N/A responses on all items or more than 50% of items in the scale, these companies were equally assessed. More specifically, some companies with all N/A responses were automatically grouped into the Policy phase. The basic premise for this decision is that environmental issues are indeed relevant in all types of business industries (IFAC, 2005). Therefore, the absence of commitment on general environmental issues, such as, energy consumption and waste minimisation which is echoed by N/A responses, is an indication that there is no urgency for these companies to address environmental issues, reflecting the Policy phase (Nasi et al., 1997).

Table 21. Categorization of EMAT score based on the social issue life cycle phases

	Frequency	Percent	Cumulative Percent
Policy	14	8.4	8.4
Learning	108	65.1	73.5
Commitment	44	26.5	100.0
Total	166	100.0	

Source: Field Survey (2020)

As shown in Table 22, the results of this consideration indicate that the majority of companies (65.1%) are in the Learning phase, reflecting the earlier finding that the extent of EMAT implementation is moderate. In the subsequent analysis, these social issue life cycle phases are used to represent the extent of EMAT implementation (Policy = low; Learning = moderate; and Commitment = high extent).

Table 22. The extent of EMAT in EAP practice

		EAP					
		Low level		High level		χ^2	*p*-value
		n	%	*n*	%		
SILCT	Policy	10	8.5	4	8.4	36.254	<.001
EMA	Learning	92	78.0	16	33.3		
	Commitment	16	13.6	28	58.3		

Source: Field Survey (2020)

Table 22 depicts the relationship between the extent of EMAT implementation and EAP practices within the remit of the social issue life cycle theory. The results showed that firms operating under the commitment EMAT phase engages more in EAP practices as compared with those operating under both policy and learning phases of the EMAT implementation (58% vs 8.4% vs 33.3%, χ^2 [2, N = 166] = 36.3, p < 0.001). The reverse remains true when considering lower levels of environmental EAP for those Phases. This observation is in line with the propositions of the social issue life cycle theory suggesting that firms operating under the commitment phase of EMAT are more committed to environmental sustainability issues and therefore are more likely to published their environmental performance for the purposes of engaging their stakeholders.

The mediating role of EMAT in the relationship between ISF and EAP

Table 23, and Fig. 2, depict the direct relationships between ISF, EMAT, and EAP. The results supported the findings from the correlation matrix and the hypothesis that firms with stronger ISF pressures and higher levels of EMAT implementation are more likely to engage in higher levels of EAP practices than those with weaker ISF and lower levels of EMAT

implementation. In the analysis of direct association, ISF forces significantly predicted EAP practices (β = 10.525, p < .001). Also, EMAT implantation significantly predicted EAP practices (β = .052, p < .001). Moreover, the indirect effect of ISF forces on EAP through EMAT is shown in Table 23 and Fig. 2. More importantly, the analysis found, that the effect of ISF forces on EAP practices was mediated by EMAT implementation. In this model, about 84.1% of the total effect of ISF on EAP was mediated by EMAT implementation (β = .542, 95% CI [.223−.969]).

Table 23. Result of bootstrapping mediation analysis assessing environmental management accounting (EMAT) as a mediator in the relationship between isomorphic factors (ISF) and environmental accountability practice (EAP)

	Direct and indirect effects		95% BCCI (β)		Ratio (*100) Specific Mediation Effect to Total Effect[a] (%)
	β	Boot*SE*	Lower	Upper	
Potential confounders	√	√	√	√	√
EMA	0.052***	0.011	0.029	0.074	
ISF	10.525***	2.150	6.280	14.769	
ISF → EMAT	0.547*	0.189	0.223	0.969	0.5424/0.6449*100 = 84.1%

Note: N = 166, √ = potential confounders; β = Unstandardised regression coefficients, Boot*SE* = Bootstrapping standard error, BCCI = Bias-corrected confidence intervals, a Ratio calculated as 100 × (indirect effect [β]/total effect), where the total effect is the sum of all mediation effects (i.e., the sum of indirect effects) and the direct effect.

About a total proportion of 84.1% was mediated by EMAT implementation. The model was adjusted for firm characteristics

Source: Field Survey (2020)

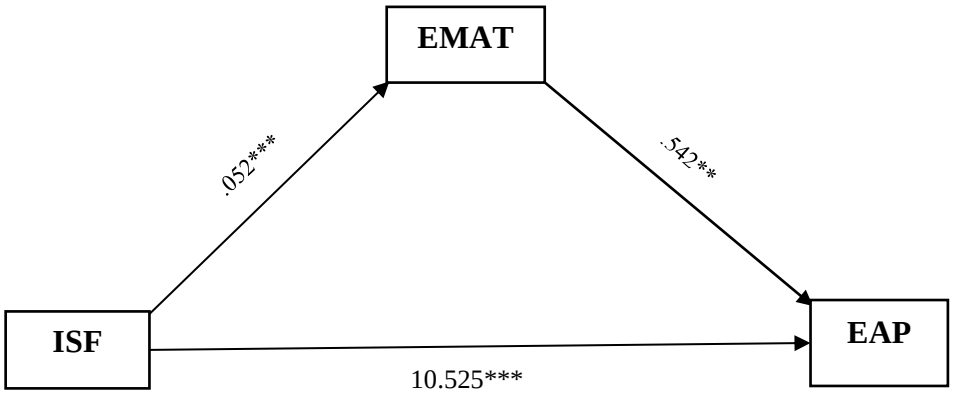

Fig. 2. Predicted relationships among Isomorphic pressures (ISF), environmental management accounting (EMAT) implementation and environmental accountability practice (EAP).
Paths adjusted estimates (for firm's characteristics) in Model 1 (N = 166; ***p < .001, **p < .005)

Figure 2: Indirect effect of EMAT implementation in the relationship between ISF and EAP

Discussion

The Association between EMAT Implementation and EAP Practices

In this representative study of environmentally sensitive firms in Ghana, we found that EMAT implementation was significantly and positively associated with EAP. The associations remained statistically significant even after full adjustment for all confounding variables related to firm' and company's characteristics. This finding is in line with Bouten and Hoozee (2013) who found an interplay between EMAT implementation and EAP. To our knowledge, this is the first study to use a large and representative sample size to analyse the association between composite and sub-constructs of EMAT implementation and EAP in Ghana and one of a few in Low and middle level income countries. This finding further reiterates the importance of EMAT implementation as an internal mechanism to drive EAP among firms. As indicated by Burritt et al., 2002 and Schaltegger et al., 2003 who

submitted that, without a mechanism to collect, measure and recognised environmental information, firm's ability to engage in EAP will be impaired.

The relationship between EMAT and EAP, though has not been empirically tested extensively within the sub-Sahara countries, researchers believed that EMAT may influence EAP among firm. In the context of Ghana, the increasing call on firms to be environmentally accountable could be driving firms to adopt proactive measures such as EMAT implementation which in turn influence EAP. This indicate that, once a firm implement EMAT, the firm is more likely to undertake EAP. Therefore, the need to make EMAT implementation mandatory for all environmentally sensitive firms should be considered by policy makers. This to a large extent will not only help improve the reliability of the environmental information that is recognised in the environmental report but will improve the number of firms engaging in the practice. Thus, this study sheds light on EMAT and EAP practices among environmentally sensitive firms, an under-explored topic with meaningful implications for policy and practice in Ghana.

The Extent of EMAT Implementation

EMAT implementation has been considered as a tool that is capable of enhancing firm EAP. EMAT is used to generate relevant data on the physical environment for both internal decisions and external reporting. Mokhtar (2015) contend that firms that take EAP seriously often implement EMAT. This suggest that, firms need to implement EMAT in order to be successful in their quest to achieve success in the sustainability of the earth ecosystem. However, findings from prior research indicate that EMAT implementation among firm is low. This study sort to determine the extent to which firms in

Ghana implement EMAT techniques from the perspective of the social issue life cycle theory to achieve EAP.

The findings from this study indicate that, generally, EMAT implementation among environmentally sensitive firms in Ghana is moderately low with a total of 122 (73.5%) firms falling between the policy phase and learning stage of the social issue life cycle. The finding is consistent with prior studies indicating moderate or low EMAT implementation among firm (Christ and Burritt, 2013; Mokhtar et al. 2016; Jalaludin et al., 2011; Ribeiro & Aibar- Guzman, 2010). The moderately low EMAT implementation among these Ghanaian firms may be as a result of the unregulated nature of EMAT practices. Unlike financial accounting practices which is not only regulated but has a statutory backing, EMAT implementation is purely a voluntary venture a firm must pursue. The cost implication of EMAT implementation may be serving as a barrier to it implementation in Ghana. The situation may have been affected by the weak nature environmental agencies handle issues concerning firm's environmental compliance. Firms are seldomly sued or fined for noncompliance or breaking environmental regulation. They are often not committed to pursue an agenda that could help them minimise issues concerning the environment and therefore may see EMAT implementation as a waste of resources.

On the bases of the individual industries included in the study, the findings revealed that, firms within the mining industries engages in EMAT implementation than firm in the other industries. Comparably, mining firms are noted to negatively affect the natural environment the other industries. Thus, these mining firms may see EMAT implementation as a proactive

measure to help manage environmental issues and ward off treats associated with legitimacy. However, this may also imply that, the firms have not been very much committed with environmental issue and therefore do not need to factor information about the natural environment in their formal decision-making process (Ackerman, 1975). This is a sign of low commitment to environmental concerns, which need to be address to ensure the sustainability of the natural environment.

The findings also indicated that firms at the commitment phase of the social issue life cycle engages more in EAP than those at the policy and learning phase of the life cycle. This is consistent with what the social issue life cycle theory imply. Thus, the mining industry which is at the commitment phase has more firms engaging in EAP than the other industries. Hence, a firm is more likely to be environmentally accountable if it evolves to the commitment phase of the social issue life cycle. However, as indicated, most the firms are at the policy and learning implying and have low EAP practices. Thus, the findings support the social issue life cycle theory and provides literature to support future studies on EMAT implementation with the social issue life cycle as the under-pining theory.

The Indirect Effect of EMAT Implementation on the ISF and EAP Relationship

As earlier indicated, the results reveal that, firms with stronger institutional isomorphic pressures and higher levels of EMAT implementation are more likely to engage in higher levels of EAP than those with weaker isomorphic pressure and lower levels of EMAT implementation. The finding support hypothesis 9, which proposed a mediating relationship of EMAT

implementation in the relationship between institutional isomorphism and EAP among Ghanaian firms. This is consistent with Mokhtar et al. (2014) as their finding suggested that, firms who are more likely to engage in EAP are those who are more committed to environmental issues and therefore implemented EMAT. This confirms the important role of EMAT implementation in the course to achieve higher levels of EAP among environmentally sensitive firms within sub-Saharan Africa and in Ghana in particular. The findings also bring to the fore the need to consider the indirect effect of EMAT implementation when conducting a study that seek to examine the relationship between institutional isomorphism and EAP. This is a different dimension to the use of the institutional theory of isomorphism to explain firm's voluntary behaviour such as EAP, CSR and other voluntary disclosures. It suffices to say that, the isomorphic factors exert greater influence on EAP when it does so through EMAT implementation. This therefore is an extension of the institutional theory of isomorphism.

Chapter Summary

This chapter presented the results and discussion of the major finding of the study. It began with the descriptive statistics of the variables of interest and the firm characteristics, and then the results and discussion of the substantive objectives which was done in three other sections. The findings from the analysis indicated a significant positive relationship between the isomorphic factors and EAP except for the coercive dimension. In the case of the relationship between the isomorphic factors and EMAT implementation, mimetic isomorphism was the only factor which was found to be insignificantly associated with EMAT. It was also revealed that that, EMAT

implementation is moderate among firms in Ghana, however, there is a significant positive relationship between EMAT implementation and EAP. Finally, the study provides evidence of EMAT implementation mediating the relationship between the isomorphic factors and EAP.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The objective of this study was to examine the isomorphic factors in corporate environmental management accounting techniques implementation and environmental accountability in Ghana. Thus, by using the quantitative paradigm of research, the study sought to examine how institutional pressure in the form of mimetic, coercive and normative pressure influence the EAP of environmentally sensitive firms in Ghana. Also, the study sought to find out how firm initiatives in the form of EMAT implementation facilitate EAP among these firm with the ultimate aim of achieving the sustainability of the natural environment. Earlier chapters of this thesis have analysed and discussed findings which are related to the objectives of the study. This chapter revisit the objectives of the study, the research method adopted and provides highlights of some of the major findings, conclusions, contributions to knowledge, recommendations, limitations and suggested areas for further research.

Corporate environmental accountability practices are recognised as a means to minimise the negative impact of firms on the natural environmental and thus improving the sustainability of the earth ecosystem. Although the demand for firms to engage in EAP has increase globally primarily due to the degradation of the natural environment for which firms have been implicated, the practice has been found to be low particularly among sub-Saharan African counties including Ghana. The voluntary nature of EAP has made it necessary to examine whether institutional pressure influences the practice among

environmentally sensitive firms in Ghana including assessing the effect of EMAT implementation on EAP as EMAT has been found to drive EAP. Using the institutional theory of isomorphism as the main theoretical lens and the social issue life cycle theory, this current study sought to:

1. Investigate the relationship between the isomorphic factors and EAP of firms in Ghana.
2. Investigate the relationship between the isomorphic factors and EMAT implementation of environmentally sensitive firms in Ghana.
3. Assess the effect of EMAT implementation on EAP of environmentally sensitive firms in Ghana.
4. Determine the extent to which firms in Ghana implement EMAT techniques from the perspective of the social issue life cycle theory to achieve EAP.
5. Examine the mediating effect of EMAT implementation in the relationship between the isomorphic factors and EAP of firms in Ghana.

To achieve the objectives of the current study, questionnaires were used to collect data that measured the extent of isomorphic factors and the EMAT variables. Moreover, environmental disclosure index was used to measure the EAP. The data collection for the study started with an initial contact with the respondent which was made through the telephone and they were briefed about the nature and purpose of the study including an assurance for strict confidentiality. Face validity and the understanding of items were procured through reconnaissance survey of 10 purposively selected respondents from all the sectors.

Substantive data were collected from 214 respondents through face-to-face administration using self-administered procedures. Altogether, 169 of the participants who participated ultimately responded with complete and required information. The analytic sample of 166 was analysed after excluding the questionnaires with incomplete information. This met the minimum required sample size for a population of 224 for a categorical estimate, margin of error of 0.05 and 95% confidence level (Adam, 2020). This study adapted Frost and Wilmshurst's (2000) approach of measuring EMAT, taking into consideration four of the five subscales for this study.

The specific items were recorded using a five-point Likert scale: 1= never, 2 = rarely, 3 = sometimes, 4 = often, and 5 = very often. We computed a scale variable ranging from 31 to 155 with higher scores reflecting higher EMAT implementation. Based on the EMAT score, we classified into three social issue life cycle phases including: policy phase, learning phase and commitment phase. This classification of the variable was done mainly to ensure that the consistency of the EMAT variable is maintained for the social issue life cycle models. The cut-off points were carefully determined to reflect the characteristics of social issue life cycle theory. This measurement is self-developed guided by the approach used by Nasi et al. (1997). This was carefully executed to meet the purpose of the analysis presented in this section. Given the responses to the items measuring the scale were based on a 5-point Likert scale ranging from 1 to 5, those with mean scores ≥3.6 were classified under Commitment phase which reflects a higher level EMAT implementation. In addition, firms with mean scores ranging from 2.0 to 3.59 were classified under learning phase and suggested a moderate extent of

EMAT implementation. Finally, those with mean scores <2.0 were grouped under policy phase indicating a low level of implementation of EMAT. The 166 companies were grouped under the social issue life cycle phases reflecting a value ranging from 1 to 3 for Policy, Learning and Commitment phases respectively based on the following cut-off points: Policy phase (= 1) if EMAT score ≤ 2.00, Learning phase (= 2) if EMAT score ranging from 2.01 to 3.59, Commitment phase (= 3) if EMAT score ≥ 3.60

Environmental accounting practice was assessed through a list of seven domains based on an environmental disclosure index (EDI) based on the Global Reporting Initiative (GRI) standard requirements. GRI is the most widely used and acceptable regulatory guideline for sustainability reporting (KMPG, 2013; Lozano & Alonso-almeida, 2015). The EDI was taken from a similar one developed by Clarkson et al. (2008; 2011). 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). We created a latent variable for EAP, with higher scores suggesting higher levels of EAP with strong validity and internal consistency (Cronbach's $\alpha = 0.96$).

The IBM-SPSS for Windows application (version 23.0; IBM SPSS Inc., Chicago, IL, USA) was employed in data analyses and the threshold for significance was at $p < 0.05$. Univariate and bivariate techniques using proportions, means and standard deviations and correlation matrix were performed to generally describe the sample. Crude and multiple linear regressions were used to calculate and texted the statistical and hypothesized associations between study variables of interest. The multivariate analysis

included estimations of the direct and indirect effects among variables using Model 4 in SPSS PROCESS Macro Hayes's version 3.5. This employed a path analytic framework and a bootstrapping approach to deliver powerful estimates of direct and indirect effects.

Summary of Main Findings

Results on the relationship between the isomorphic factors and EAP of firms in Ghana (Section 1) suggested, that higher level of mimetic and normative pressures influenced EAP of environmentally sensitive firms. This finding supports the first and third hypotheses indicating, that firm level influence as well as influence from professional association the firms are associated with the capacity to influence firm's behaviour towards EAP. In the case of coercive, the finding did not support the third hypothesis, suggesting, that coercive isomorphism has no influence on EAP.

In the case of the relationship between the isomorphic factors and EMAT implementation of environmentally sensitive firms in Ghana (Section 2), findings indicated a positive relationship between coercive and normative isomorphic pressure on EMAT implementation. Thus, regulatory pressure and pressure from professional and industrial association has the power to influence firm EMAT implementation. This finding support hypotheses fifth and sixth hypotheses indicating positive relationships between the isomorphic factors and EMAT implementation of firms in Ghana. The finding did not support the fourth hypothesis and that mimetic isomorphic factor did not influence EMAT.

The findings from Section 3 revealed a significant positive relationship between EMAT implementation and EAP supporting hypothesis seven. Thus,

the implementation of EMAT influences the EAP. Consequently, EAP may improve greatly if firm's take proactive measure by implementing EMAT. The study also found, that the EMAT implementation was moderate among firms in Ghana based on the social issue life cycle. Majority of the firm (65.1%) were at the learning stage of the social issue life cycle suggesting that firm's commitment to environmental sustainability practices was evolving. The findings also provided evidence to show, that firm EAP increases as the firms evolved from policy, learning and commitment phase of the social issue life cycle. This supports the eighth hypothesis, that the extent of EMAT implementation by firms in Ghana as per the social issue life cycle, has a significant positive relationship with the firm's EAP. Therefore, a firm at the commitment stage will engage in more EAP than those at the policy and learning stages of the cycle.

The last aspect of the final section (Section 3) found that direct associations of ISF forces and EMAT implantation significantly predicted EAP practices. Thus, firms with higher ISF pressures and EMAT implementation were more likely to implement EAP. Moreover, the analysis found indirect and mediated effect of EMAT implementation of the relationship between ISF pressures on EAP practices with about 84% of the total effect being mediated (β = .542, 95% CI [.223−.969]).

Table 24: Summary of Results

	Hypotheses	Results
H1	There is a significant positive relationship between mimetic isomorphism and EAP.	Supported
H2	There is a significant positive relationship between coercive isomorphism and EAP.	Not supported
H3	There is a significant positive relationship between normative isomorphism and EAP.	Supported
H4	there is a strong positive relationship between mimetic isomorphism and EMAT implementation among Ghanaian firms.	Not supported
H5	there is a strong positive relationship between coercive isomorphism and EMAT implementation among Ghanaian firms.	Supported
H6	there is a strong positive relationship between Normative isomorphism and EMAT implementation among Ghanaian firms.	Supported
H7	There is a significant positive relationship between EMAT and EAP	Supported
H8	The extent of EMAT implementation practices by firms in Ghana as per the social issue life cycle, has a significant positive relationship with the firm's EAP.	Supported
H9	EMAT mediates the relationship between institutional isomorphism and EAP among Ghanaian firms.	Supported

Source: Field Survey (2020)

Conclusions

Corporate environmental accountability practice enables firm to make available information concerning their environmental performance to stakeholders and the general public. Such an information may be used by the general public to either make informed economic decisions and or as a means to demand sustainable environmental practices. EAP has been considered

globally as the way to monitor firms to engage in environmental sustainability practice to achieve a sustainable physical environment, as firms have been found to contribute significantly to the worsening environment. However, the review of the related literature from prior studies brought to the fore that, EAP practices in general and particularly among sub-Saharan countries including Ghana is low. This situation highlights the needs for more research to be undertaken to understand EAP among firms in Ghana and to determine the factors that are likely to influence the practice.

The literature review also reveals a number of areas that required further investigation. Firstly, most studies done on the relationship between the isomorphic factors EAP and EMAT implementation showed inconsistent results among most firms within developing countries including Ghana. Secondly, most of the studies on EAP were limited to the mining sector and therefore not comprehensive enough. Thirdly, in the case of EMAT, to the extent that the researcher can tell, there were paucity of research in Ghana. Fourthly, prior studies had primarily focused on either the relationship between the isomorphic factor on EAP and isomorphic factor on EMAT or EMAT on EAP and therefore creating a gap in literature. Given the above background, this study sought to examine the isomorphic factors in corporate environmental management accounting techniques implementation and environmental accountability in Ghana, through the lens of institutional theory and the social issue life cycle theory.

The voluntary nature of EAP and EMAT implementation as well as the inability of the traditional accounting system to capture, measure and recognise environmental information, makes it essential for firms to change

their reporting behaviour to incorporate the reporting of corporate environmental performance. This situation, and the need to have firms to engage in EAP coupled with the gaps discovered in the literature provided ground for using institutional theory as the means to explain the relation between the isomorphic factor and outcome variables of interest. As revealed from the data analysis, in determining whether isomorphic factor influence EAP in Ghana, Mimetic pressure and normative pressure were found to positively associated with EAP confirming hypotheses H1 and H3. This suggest that industry leaders, competitors who are doing well as a result of engaging in EAP are capable of influencing other firms to also engage in the practice. Further, professional associations such as the ICAG, ACCA and other industrial associations who have the power to influence EAP behaviour among firms in Ghana.

The findings add to the extant published literature by generating some evidence to support the view that coercive pressures and normative pressures may potentially contribute meaningfully toward ensuring effective EMAT implementation among firms in a developing country context supporting hypotheses H5 and H6. Programs and policies aimed at improving organizational management and to track environmental performance through EMAT implementation in Ghana and sub-Saharan Africa largely, should continually intensify coercive and normative pressures to ensure EMAT implementation. Whilst the use of longitudinal design and data to estimate the effects of institutional isomorphic forces on EMAT is proposed, the study provides a critical baseline evidence for future research efforts in this topic.

The study also discovered a significant relationship between EMAT implementation and EAP supporting H7 and reiterating the fact that EMAT influences EAP of environmentally sensitive firm in Ghana. This finding is significant and opens up the discussion on making EMAT implementation mandatory for firms whose impact on the physical environment negative. This is important if Ghana and other sub-Saharan African Countries have any chance of achieving all the SDGs in the targeted year 2030.

The findings also suggested that, though EMAT implementation is moderate among environmentally sensitive firms in Ghana as most of the firms were found to be at the learning phase of the social issue life cycle. This may suggest that most of the firms are not committed to the issues of the environment and therefore does not include environmental concerns on their formal decision-making process. This is a worrying situation since environmentally sensitive firms are noted for their contribution to the destruction of the natural environment and as such must be seen to be in the frontline to salvage the destroying environment. Finally, the indirect relationship between isomorphic factors and EAP through EMAT implementation showed a significant mediating role of EMAT on the association of isomorphic forces and EAP. There is, therefore, an indication, that the implementation of EMAT is critical in the relationship between the isomorphic factors and EAP particularly when as high as approximately 84% of the total effect was mediated by EMAT implementation.

Recommendations

This study found evidence to suggest that external factors in the form of mimetic and normative isomorphism and internal mechanisms such as

EMAT implementation play complementary role in fostering EAP of environmentally sensitive firms in Ghana. This suggests, that future studies seeking to examine the relationship among institutional factors, EMAT implementation and EAP utilizing institutional theory should take cognisance of this.

The findings from this study also have potential implications for policy makers in Ghana, including professional bodies, especially in the area of EAP and EMAT implementation within environmentally sensitive firms. EAP must be made mandatory for firms that fall within the definition of environmentally sensitive firms and regulated by EPA and Institute of Chartered Accountant Ghana. Whiles EPA specifically looks at corporate environmental performance, the Institute of Chartered Accountant Ghana may be tasked to oversee and regulate the reporting of the environmental performance and the implementation of the EMAT. Further, the government must provide tax incentive for firms that goes the extra mile to institute Environmental management accounting system to help in the implementation of EMAT. This is because an environmental management accounting system will facilitate EMAT implementation and improve the reliability of EAP and improve environmental sustainability practices of such firms. The tax incentive will motivate environmentally sensitive firms to implement the environmental management accounting system as any extra cost that may arise as a result of setting up the system will be mitigated by the tax incentive.

To ensure consistency and comparability of environmental information to aid decision making, the institute of chartered accounting Ghana which is the professional accounting body responsible for setting accounting standards,

should collaborate with other regulatory agencies such as the Ghana environmental protection agency in developing environmental reporting standards to guide EAP in Ghana. This will reduce the uncertainties associated with EAP.

Finally, the findings from the data analysis provided evidence of a mediating role of EMAT implementation in the relationship between the isomorphic factors and EAP. as one of the first studies to have looked at the indirect effect of EMAT implementation on the isomorphic factors and EAP and therefore extending the theory of institutional isomorphism, the study opens the grounds for the academic community for further research on the issue within the sub-Saharan African countries, including Ghana. Further research on the area will shed more light on the application of institutional isomorphism, EMAT implementation and EAP.

Contribution to Knowledge

The study has contributed theoretically to the utilisation of institutional theory of isomorphism and the social issue life cycle theory in explaining firm's environmental accountability behaviour. Though prior studies in the past had looked at the relationship between the isomorphic factors and EAP, the success of an internal factor (EMAT) to act as a mediator to the relationship between isomorphic factors and environmental accountability behaviour is novel and extend the use of the institutional theory of isomorphism in explaining firms' voluntary behaviour.

The IEE theoretical framework developed to show the interrelationship of the variables of interst and to provide a guide to the study is also novel. Conceptually, the integration of EMAT implementation in the examination of

EAP proves that isomorphic factors effect on EAP is asymmetric as portrayed in literature. The findings of the study lent credence to the suitability of IEE framework and could form a baseline for studying isomorphic factors EMAT implementation and firm environmental accountability behaviour.

The findings from the study demonstrated the importance of institutional isomorphic factors and EMAT implementation in driving firms' behaviour towards EAP. This information is relevant as it informs the government and other regulatory agencies on what must be done in order to achieve corporate EAP. The findings clearly suggested that, though external pressure may be important to ensuring EAP, the proactive nature of firms towards EMAT implementation cannot be discounted. The study provide evidence on the need to make EMAT implementation mandatory at least for environmentally sensitive firms in order to achieve corporate EAP as means to environmental sustainability.

Suggestions for Further Research

The concept of corporate environmental management accounting implementation and environmental accountability practice among firms are still emerging in Ghana. Therefore, a qualitative approach in the future to explore the concepts, could provide a better understanding especially in low and middle level income setting.

Furthermore, the cross-sectional nature of the data does not allow a clear conclusion about directionality and causality. Environmental management accounting implementation and environmental accountability practice may interplay on each other. Thus, future research endeavours may have to explore the bidirectional relationships between environmental

management accounting implementation and environmental accountability practice to determine the extent to which environmental accountability influence environmental management accounting implementation in Ghana

Future studies may also consider expanding the sample size to include all firms, be it environmentally sensitive or not. This will provide a more comprehensive position of Ghana's corporate environmental management accounting implementation and environmental accountability practice which may inform a much better policy.

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APPENDICES

APPENDIX A

Results on Regression of ISFM on EAP

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	9.246	5.903		1.566	.119
	ISFM	.861	.603	.111	1.429	.001

a. Dependent Variable: EAP

A.2 Results on Regression of ISFC on EAP (Table 6.1)

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	18.233	7.702		2.367	.019
	ISFC	-.085	.724	-.009	-.117	.907

a. Dependent Variable: EAP

Results on Regression of ISFN on EAP

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-3.712	8.594		-.432	.666
	ISFN	1.704	.683	.191	2.495	.014

a. Dependent Variable: EAP

Regression of ISFM, ISFC and ISFN on EAP

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-3.388	11.059		-.306	.760
	ISFM	.547	.614	.070	.891	.002
	ISFC	-.448	.725	-.048	-.617	.538
	ISFN	1.638	.716	.184	2.286	.024

a. Dependent Variable: EAP

APPENDIX B

Results on Regression of ISFM with cofounders on EAP

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.183	14.430		.013	.990
	Is the firm a limited liability company?	10.959	13.377	.057	.819	.414
	What is the extent of government interest in the firm?	8.509	13.921	.044	.611	.542
	Does your firm have a foreigner as member of your board?	1.781	4.372	.041	.407	.684
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	1.026	4.460	.024	.230	.818
	Is your firm listed on the Ghana stock exchange?	-13.601	4.066	-.266	-3.345	.001
	AUDIT	22.518	3.636	.505	6.192	.000
	ISFM	-.017	.563	-.002	-.030	.031

a. Dependent Variable: EAP

Results on Regression of ISFC with cofounders on EAP

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-4.136	14.673		-.282	.778
	Is the firm a limited liability company?	10.864	13.324	.056	.815	.416
	What is the extent of government interest in the firm?	8.812	13.580	.046	.649	.517
	Does your firm have a foreigner as member of your board?	1.858	4.347	.043	.427	.670
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.507	4.518	.012	.112	.911
	Is your firm listed on the Ghana stock exchange?	-15.054	4.693	-.294	-3.208	.002
	AUDIT	22.698	3.578	.509	6.344	.000
	ISFC	.460	.752	.050	.611	.542

a. Dependent Variable: EAP

Results on Regression of ISFN with cofounders on EAP

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6.638	15.195		-.437	.663
	Is the firm a limited liability company?	11.268	13.313	.058	.846	.399
	What is the extent of government interest in the firm?	10.931	13.840	.057	.790	.431
	Does your firm have a foreigner as member of your board?	1.487	4.353	.034	.342	.733
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.646	4.453	.015	.145	.885
	Is your firm listed on the Ghana stock exchange?	-13.433	4.032	-.262	-3.331	.001
	AUDIT	22.142	3.584	.496	6.178	.000
	ISFN	.553	.655	.062	.845	.002

a. Dependent Variable: EAP

Results on Regression of ISFM, ISFC and ISFN with cofounders on EAP

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-7.671	16.668		-.460	.646
	Is the firm a limited liability company?	10.931	13.431	.057	.814	.417
	What is the extent of government interest in the firm?	10.207	14.185	.053	.720	.473
	Does your firm have a foreigner as member of your board?	1.674	4.405	.038	.380	.704
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.204	4.587	.005	.045	.965
	Is your firm listed on the Ghana stock exchange?	-14.626	4.855	-.286	-3.013	.003
	AUDIT	22.477	3.704	.504	6.069	.000
	ISFM	-.121	.576	-.016	-.210	.012
	ISFC	.337	.789	.036	.427	.670
	ISFN	.497	.686	.056	.725	.023

a. Dependent Variable: EAP

APPENDIX B

Results on Regression of Cofounders on EAP

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.775E-14	12.995		.000	1.000
	Is the firm a limited liability company?	10.989	13.297	.057	.826	.410
	What is the extent of government interest in the firm?	8.597	13.549	.044	.635	.527
	Does your firm have a foreigner as member of your board?	1.768	4.336	.041	.408	.684
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	1.038	4.425	.024	.235	.815
	Is your firm listed on the Ghana stock exchange?	-13.587	4.025	-.265	-3.376	.001
	AUDIT	22.498	3.556	.504	6.327	.000

a. Dependent Variable: EAP

Results on Regression of Composite ISF and cofounders on EAP

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-6.624	16.520		-.401	.689
	Is the firm a limited liability company?	11.410	13.336	.059	.856	.394
	What is the extent of government interest in the firm?	10.674	13.943	.055	.766	.445
	Does your firm have a foreigner as member of your board?	1.544	4.358	.035	.354	.724
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.811	4.447	.019	.182	.856
	Is your firm listed on the Ghana stock exchange?	-14.014	4.085	-.274	-3.431	.001
	AUDIT	22.195	3.593	.498	6.178	.000
	ISF	.207	.318	.048	.651	0.04

a. Dependent Variable: EAP

APPENDIX C

Results on Regression of ISFM with Cofounders on EMAT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.193	.532		4.122	.000
	Is the firm a limited liability company?	.639	.493	.093	1.294	.197
	What is the extent of government interest in the firm?	-.265	.513	-.038	-.515	.607
	Does your firm have a foreigner as member of your board?	.070	.161	.045	.431	.667
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.160	.164	.103	.973	.332
	Is your firm listed on the Ghana stock exchange?	-.456	.150	-.249	-3.040	.003
	AUDIT	.548	.134	.344	4.085	.000
	ISFM	.006	.021	.021	.284	.777

a. Dependent Variable: EMA

Results on Regression of ISFC with Cofounders on EMAT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.389	.521		2.668	.008
	Is the firm a limited liability company?	.602	.473	.087	1.272	.205
	What is the extent of government interest in the firm?	-.251	.482	-.036	-.521	.603
	Does your firm have a foreigner as member of your board?	.093	.154	.060	.602	.548
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.044	.160	.028	.273	.785
	Is your firm listed on the Ghana stock exchange?	-.769	.167	-.421	-4.619	.000
	AUDIT	.597	.127	.375	4.705	.000
	ISFC	.097	.027	.292	3.620	.000

a. Dependent Variable: EMA

Results on Regression of ISFN with Cofounders on EMAT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.118	.534		2.095	.038
	Is the firm a limited liability company?	.676	.468	.098	1.446	.150
	What is the extent of government interest in the firm?	.105	.486	.015	.215	.830
	Does your firm have a foreigner as member of your board?	.026	.153	.017	.168	.867
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.088	.156	.057	.564	.573
	Is your firm listed on the Ghana stock exchange?	-.434	.142	-.238	-3.068	.003
	AUDIT	.494	.126	.310	3.926	.000
	ISFN	.095	.023	.299	4.133	.000

a. Dependent Variable: EMA

Results on Regression of ISFM, ISFC and ISFN with cofounders on EMAT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	.765	.571		1.339	.183
	Is the firm a limited liability company?	.624	.460	.090	1.354	.178
	What is the extent of government interest in the firm?	.005	.486	.001	.011	.991
	Does your firm have a foreigner as member of your board?	.058	.151	.037	.386	.700
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.001	.157	.001	.008	.994
	Is your firm listed on the Ghana stock exchange?	-.691	.166	-.378	-4.151	.000
	AUDIT	.554	.127	.348	4.359	.000
	ISFM	-.013	.020	-.048	-.681	.497
	ISFC	.075	.027	.228	2.789	.006
	ISFN	.080	.024	.252	3.406	.001

a. Dependent Variable: EMAT

Results on Regression of ISFN with cofounders on EMAT Control

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	17.142	5.537		3.096	.002
	Is the firm a limited liability company?	9.193	5.133	.124	1.791	.075
	What is the extent of government interest in the firm?	-1.745	5.342	-.024	-.327	.744
	Does your firm have a foreigner as member of your board?	.838	1.678	.050	.499	.618
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	3.822	1.711	.231	2.234	.027
	Is your firm listed on the Ghana stock exchange?	-4.824	1.560	-.247	-3.092	.002
	AUDIT	4.161	1.395	.244	2.982	.003
	ISFM	.078	.216	.026	.361	.718

a. Dependent Variable: EMA_CS

Results on Regression of ISFC with cofounders on EMAT Control

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	9.838	5.461		1.802	.074
	Is the firm a limited liability company?	8.806	4.959	.119	1.776	.078
	What is the extent of government interest in the firm?	-1.740	5.054	-.024	-.344	.731
	Does your firm have a foreigner as member of your board?	1.075	1.618	.064	.664	.507
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	2.714	1.682	.164	1.614	.109
	Is your firm listed on the Ghana stock exchange?	-7.786	1.747	-.398	-4.458	.000
	AUDIT	4.655	1.332	.273	3.496	.001
	ISFC	.907	.280	.256	3.242	.001

a. Dependent Variable: EMA_CS

Results on Regression of ISFN with cofounders on EMAT Control

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.478	5.618		1.331	.185
	Is the firm a limited liability company?	9.495	4.922	.128	1.929	.056
	What is the extent of government interest in the firm?	1.536	5.117	.021	.300	.764
	Does your firm have a foreigner as member of your board?	.452	1.609	.027	.281	.779
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	3.142	1.646	.190	1.908	.058
	Is your firm listed on the Ghana stock exchange?	-4.647	1.491	-.238	-3.117	.002
	AUDIT	3.696	1.325	.217	2.789	.006
	ISFN	.877	.242	.257	3.622	.000

a. Dependent Variable: EMA_CS

Results on Regression of ISFM, ISFC and ISFN with cofounders on EMAT Control

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.937	6.048		.651	.516
	Is the firm a limited liability company?	9.047	4.874	.122	1.856	.065
	What is the extent of government interest in the firm?	.718	5.147	.010	.140	.889
	Does your firm have a foreigner as member of your board?	.741	1.598	.044	.464	.643
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	2.346	1.664	.142	1.410	.161
	Is your firm listed on the Ghana stock exchange?	-7.037	1.762	-.360	-3.995	.000
	AUDIT	4.225	1.344	.248	3.144	.002
	ISFM	-.101	.209	-.034	-.483	.630
	ISFC	.709	.286	.200	2.477	.014
	ISFN	.733	.249	.215	2.942	.004

a. Dependent Variable: EMA_CS

APPENDIX D

Results on Regression of ISFM with cofounders on EMAT SEA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	24.077	6.265		3.843	.000
	Is the firm a limited liability company?	2.624	5.808	.034	.452	.652
	What is the extent of government interest in the firm?	2.815	6.044	.036	.466	.642
	Does your firm have a foreigner as member of your board?	.243	1.898	.014	.128	.898
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	1.226	1.936	.070	.633	.528
	Is your firm listed on the Ghana stock exchange?	-3.586	1.765	-.174	-2.032	.044
	AUDIT	5.660	1.579	.315	3.585	.000
	ISFM	.357	.244	.114	1.460	.146

a. Dependent Variable: EMA_SEA

Results on Regression of ISFC with cofounders on EMAT SEA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	19.187	6.238		3.076	.002
	Is the firm a limited liability company?	1.716	5.665	.022	.303	.762
	What is the extent of government interest in the firm?	1.364	5.774	.018	.236	.814
	Does your firm have a foreigner as member of your board?	.709	1.848	.040	.383	.702
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-.180	1.921	-.010	-.094	.926
	Is your firm listed on the Ghana stock exchange?	-7.017	1.995	-.340	-3.517	.001
	AUDIT	6.536	1.521	.364	4.296	.000
	ISFC	.979	.320	.262	3.064	.003

a. Dependent Variable: EMA_SEA

Results on Regression of ISFN with cofounders on EMAT SEA

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	17.083	6.441		2.652	.009
	Is the firm a limited liability company?	2.441	5.643	.031	.433	.666
	What is the extent of government interest in the firm?	4.746	5.867	.061	.809	.420
	Does your firm have a foreigner as member of your board?	.055	1.845	.003	.030	.976
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.309	1.888	.018	.164	.870
	Is your firm listed on the Ghana stock exchange?	-3.638	1.709	-.177	-2.128	.035
	AUDIT	5.524	1.519	.307	3.636	.000
	ISFN	.910	.278	.254	3.278	.001

a. Dependent Variable: EMA_SEA

APPENDIX E

Results on Regression of ISFM, ISFC and ISFN with cofounders on EMAT SEA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.941	6.939		1.577	.117
	Is the firm a limited liability company?	2.464	5.591	.032	.441	.660
	What is the extent of government interest in the firm?	5.207	5.905	.067	.882	.379
	Does your firm have a foreigner as member of your board?	.160	1.834	.009	.087	.931
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-.257	1.909	-.015	-.134	.893
	Is your firm listed on the Ghana stock exchange?	-5.862	2.021	-.284	-2.901	.004
	AUDIT	5.744	1.542	.320	3.726	.000
	ISFM	.178	.240	.057	.743	.459
	ISFC	.727	.328	.195	2.213	.028
	ISFN	.713	.286	.199	2.496	.014

a. Dependent Variable: EMA_SEA

Results on Regression of ISFM with cofounders on EMAT CBA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	19.395	4.933		3.932	.000
	Is the firm a limited liability company?	5.000	4.573	.083	1.093	.276
	What is the extent of government interest in the firm?	-5.608	4.759	-.093	-1.178	.240
	Does your firm have a foreigner as member of your board?	.491	1.494	.036	.328	.743
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-.768	1.525	-.057	-.504	.615
	Is your firm listed on the Ghana stock exchange?	-3.407	1.390	-.213	-2.451	.015
	AUDIT	4.779	1.243	.342	3.844	.000
	ISFM	-.127	.192	-.052	-.659	.511

a. Dependent Variable: EMA_CBA

Results on Regression of ISFC with cofounders on EMAT CBA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	10.179	4.844		2.101	.037
	Is the firm a limited liability company?	4.992	4.399	.082	1.135	.258
	What is the extent of government interest in the firm?	-4.525	4.484	-.075	-1.009	.314
	Does your firm have a foreigner as member of your board?	.562	1.435	.041	.392	.696
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-1.676	1.492	-.124	-1.124	.263
	Is your firm listed on the Ghana stock exchange?	-6.074	1.549	-.379	-3.920	.000
	AUDIT	4.999	1.181	.358	4.232	.000
	ISFC	.869	.248	.300	3.502	.001

a. Dependent Variable: EMA_CBA

Results on Regression of ISFN with cofounders on EMAT CBA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	8.034	4.983		1.612	.109
	Is the firm a limited liability company?	5.647	4.365	.093	1.294	.198
	What is the extent of government interest in the firm?	-1.426	4.538	-.024	-.314	.754
	Does your firm have a foreigner as member of your board?	-.029	1.427	-.002	-.021	.984
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-1.259	1.460	-.093	-.862	.390
	Is your firm listed on the Ghana stock exchange?	-3.068	1.322	-.192	-2.321	.022
	AUDIT	4.086	1.175	.293	3.477	.001
	ISFN	.830	.215	.298	3.868	.000

a. Dependent Variable: EMA_CBA

Results on Regression of ISFM, ISFC and ISFN with cofounders on EMAT CBA

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	6.252	5.303		1.179	.240
	Is the firm a limited liability company?	4.846	4.273	.080	1.134	.259
	What is the extent of government interest in the firm?	-3.193	4.513	-.053	-.707	.480
	Does your firm have a foreigner as member of your board?	.403	1.402	.030	.287	.774
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-2.246	1.459	-.166	-1.539	.126
	Is your firm listed on the Ghana stock exchange?	-5.656	1.545	-.353	-3.662	.000
	AUDIT	4.855	1.178	.348	4.120	.000
	ISFM	-.305	.183	-.126	-1.667	.097
	ISFC	.719	.251	.248	2.866	.005
	ISFN	.719	.218	.258	3.294	.001

a. Dependent Variable: EMA_CBA

Results on Regression of ISFM with cofounders on EMAT AUDIT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	7.379	2.104		3.507	.001
	Is the firm a limited liability company?	2.976	1.951	.104	1.526	.129
	What is the extent of government interest in the firm?	-3.665	2.030	-.128	-1.806	.073
	Does your firm have a foreigner as member of your board?	.584	.637	.090	.916	.361
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.680	.650	.106	1.046	.297
	Is your firm listed on the Ghana stock exchange?	-2.314	.593	-.304	-3.903	.000
	AUDIT	2.382	.530	.359	4.492	.000
	ISFM	-.125	.082	-.109	-1.528	.129

a. Dependent Variable: EMA_AEI

Results on Regression of ISFC with cofounders on EMAT AUDIT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.855	2.126		1.813	.072
	Is the firm a limited liability company?	3.136	1.930	.109	1.625	.106
	What is the extent of government interest in the firm?	-2.884	1.968	-.100	-1.466	.145
	Does your firm have a foreigner as member of your board?	.534	.630	.082	.847	.398
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.501	.655	.078	.765	.446
	Is your firm listed on the Ghana stock exchange?	-2.968	.680	-.390	-4.365	.000
	AUDIT	2.329	.518	.351	4.492	.000
	ISFC	.238	.109	.173	2.189	.030

a. Dependent Variable: EMA_AEI

Results on Regression of ISFN with cofounders on EMAT AUDIT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.058	2.153		.956	.341
	Is the firm a limited liability company?	3.367	1.886	.117	1.785	.076
	What is the extent of government interest in the firm?	-1.609	1.961	-.056	-.820	.413
	Does your firm have a foreigner as member of your board?	.320	.617	.049	.519	.605
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.544	.631	.084	.861	.390
	Is your firm listed on the Ghana stock exchange?	-2.115	.571	-.278	-3.702	.000
	AUDIT	2.014	.508	.304	3.965	.000
	ISFN	.329	.093	.248	3.541	.001

a. Dependent Variable: EMA_AEI

Results on Regression of ISFM, ISFC and ISFN with cofounders on EMAT AUDIT

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.588	2.309		1.121	.264
	Is the firm a limited liability company?	2.974	1.860	.103	1.598	.112
	What is the extent of government interest in the firm?	-2.568	1.965	-.089	-1.307	.193
	Does your firm have a foreigner as member of your board?	.506	.610	.078	.829	.409
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.194	.635	.030	.305	.761
	Is your firm listed on the Ghana stock exchange?	-2.864	.672	-.376	-4.259	.000
	AUDIT	2.336	.513	.352	4.554	.000
	ISFM	-.188	.080	-.163	-2.360	.020
	ISFC	.183	.109	.133	1.677	.095
	ISFN	.319	.095	.241	3.359	.001

a. Dependent Variable: EMA_AEI

Results on Regression of EMA CS with cofounders on EAP HD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-3.615	11.176		-.323	.747
	Is the firm a limited liability company?	6.086	11.102	.038	.548	.584
	What is the extent of government interest in the firm?	5.370	11.209	.034	.479	.633
	Does your firm have a foreigner as member of your board?	.352	3.589	.010	.098	.922
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-.194	3.715	-.005	-.052	.959
	Is your firm listed on the Ghana stock exchange?	-9.857	3.431	-.234	-2.873	.005
	AUDIT	18.207	3.029	.495	6.011	.000
	EMA_CS	.201	.171	.093	1.176	.241

a. Dependent Variable: EAP_HD

APPENDIX F

Results on Regression of EMA SEA with cofounders on EAP HD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-10.650	11.351		-.938	.350
	Is the firm a limited liability company?	7.150	10.821	.045	.661	.510
	What is the extent of government interest in the firm?	4.590	11.023	.029	.416	.678
	Does your firm have a foreigner as member of your board?	.335	3.528	.009	.095	.924
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.200	3.602	.006	.055	.956
	Is your firm listed on the Ghana stock exchange?	-9.359	3.324	-.222	-2.816	.005
	AUDIT	16.739	3.030	.455	5.524	.000
	EMA_SEA	.380	.148	.186	2.577	.011

a. Dependent Variable: EAP_HD

Results on Regression of EMA CBA with cofounders on EAP HD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-9.176	11.079		-.828	.409
	Is the firm a limited liability company?	5.238	10.838	.033	.483	.630
	What is the extent of government interest in the firm?	7.448	11.038	.047	.675	.501
	Does your firm have a foreigner as member of your board?	.332	3.521	.009	.094	.925
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.904	3.594	.025	.252	.802
	Is your firm listed on the Ghana stock exchange?	-9.157	3.325	-.217	-2.754	.007
	AUDIT	16.707	3.015	.454	5.542	.000
	EMA_CBA	.510	.188	.194	2.711	.007

a. Dependent Variable: EAP_HD

Results on Regression of EMA_AEI with cofounders on EAP_HD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-5.853	10.954		-.534	.594
	Is the firm a limited liability company?	4.781	10.967	.030	.436	.663
	What is the extent of government interest in the firm?	7.857	11.160	.049	.704	.482
	Does your firm have a foreigner as member of your board?	.057	3.553	.002	.016	.987
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	-.195	3.635	-.005	-.054	.957
	Is your firm listed on the Ghana stock exchange?	-8.686	3.433	-.206	-2.530	.012
	AUDIT	16.892	3.070	.459	5.502	.000
	EMA_AEI	.976	.442	.176	2.209	.029

a. Dependent Variable: EAP_HD

APPENDIX G

Results on Regression of EMA CS with cofounders on EAP SD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.295	2.812		-.461	.646
	Is the firm a limited liability company?	2.434	2.794	.061	.871	.385
	What is the extent of government interest in the firm?	3.818	2.821	.096	1.354	.178
	Does your firm have a foreigner as member of your board?	1.172	.903	.131	1.298	.196
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.205	.935	.023	.220	.826
	Is your firm listed on the Ghana stock exchange?	-2.396	.863	-.228	-2.775	.006
	AUDIT	3.129	.762	.342	4.106	.000
	EMA_CS	.072	.043	.134	1.674	.096

a. Dependent Variable: EAP_SD

Results on Regression of EMA SFA with cofounders on EAP SD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-3.031	2.853		-1.062	.290
	Is the firm a limited liability company?	2.871	2.720	.072	1.056	.293
	What is the extent of government interest in the firm?	3.564	2.770	.090	1.286	.200
	Does your firm have a foreigner as member of your board?	1.180	.887	.132	1.331	.185
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.373	.905	.042	.412	.681
	Is your firm listed on the Ghana stock exchange?	-2.327	.835	-.221	-2.785	.006
	AUDIT	2.775	.762	.303	3.643	.000
	EMA_SEA	.108	.037	.212	2.918	.004

a. Dependent Variable: EAP_SD

APPENDIX H

Results on Regression of EMA CBA with cofounders on EAP SD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1.638	2.833		-.578	.564
	Is the firm a limited liability company?	2.610	2.771	.066	.942	.348
	What is the extent of government interest in the firm?	4.111	2.822	.104	1.457	.147
	Does your firm have a foreigner as member of your board?	1.201	.900	.134	1.334	.184
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.537	.919	.060	.585	.560
	Is your firm listed on the Ghana stock exchange?	-2.448	.850	-.233	-2.879	.005
	AUDIT	3.015	.771	.329	3.912	.000
	EMA_CBA	.091	.048	.139	1.892	.060

a. Dependent Variable: EAP_SD

APPENDIX I

Results on Regression of EMA AEI with cofounders on EAP SD

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.796	2.799		-.284	.776
	Is the firm a limited liability company?	2.661	2.802	.067	.950	.344
	What is the extent of government interest in the firm?	4.060	2.852	.102	1.424	.157
	Does your firm have a foreigner as member of your board?	1.172	.908	.131	1.291	.199
	Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?	.373	.929	.042	.402	.688
	Is your firm listed on the Ghana stock exchange?	-2.455	.877	-.234	-2.799	.006
	AUDIT	3.140	.784	.343	4.004	.000
	EMA_AEI	.133	.113	.096	1.176	.241

a. Dependent Variable: EAP_SD

APPENDIX J

UNIVERSITY OF CAPE COAST

SCHOOL OF BUSINESS

QUESTIONNAIRE FOR ACCOUNTANTS/FINANCE OFFICERS/MANAGEMENT ACCOUNTANTS IN ENVIRONMENTALLY SENSITIVE FIRMS

ON

ISOMORPHIC FACTORS IN CORPORATE ENVIRONMENTAL MANAGEMENT ACCOUNTING IMPLEMENTATION AND ENVIRONMENTAL ACCOUNTABILITY IN GHANA

Introduction

The purpose of this survey is to examine the nature and extent to which isomorphic factors influence Environmental Accountability. It is further to determine whether environmental management accounting technique implementation mediate the relationship between isomorphic factors and environmental accountability. This study is in partial fulfilment for the award of Doctor of Philosophy in Business Administration. Please, could you help us by completing the questionnaire? It should take you less than 20 minutes to complete the questionnaire. Confidentiality and anonymity are assured.

SECTION 1: BACKGROUND OF THE FIRMS

Please tick (/) the applicable box and fill in the relevant space.

1. Which industry would you place your firm? (Please tick one box only)

   [ ] Mining

   [ ] Manufacturing

[ ] Construction

[ ] Oil and gas

[ ] Transport

[ ] others……... (please specify)

2. Which position do you hold in your firm?

[ ] Finance manager/accountant

[ ] Manager

[ ] Environmental officer

[ ] others……... (please specify)

3. Is the firm a limited liability company?

[ ] Yes

[ ] No

4. What is the extent of government interest in the firm?

[ ] Less than 50%

[ ] Above 50%

5. Does your firm have a foreigner as member of your board?

[ ] Yes

[ ] No

6. Which one of the following is the Auditors of your firms?

[ ] PwC LLP

[ ] Deloitte LLP

[ ] Ernest & Young LLP

[ ] KPMG LLP

[ ] others, please specify……...

7. Is your firm a subsidiary or related to another firm with head office located outside the region of Ghana?

   [ ] Yes

   [ ] No

8. Is your firm a subsidiary or affiliated to another firm that has its origin outside Ghana?

   [ ] Yes

   [ ] No

9. Is your firm listed on the Ghana stock exchange?

   [ ] Yes

   [ ] No

SECTION 2: ISOMORPHIC FACTORS

10. Please tick (/) to indicate the extent to which the following influence your firm's decisions in terms of practices and structure:

Never	Rarely	Sometimes	Often	Very Often
1	2	3	4	5

A	**In the face of uncertainties, our firm's decisions in terms of practice and structure is influence by:**	**1**	**2**	**3**	**4**	**5**
	Strategy of industry leaders					
	Strategy of industry peers					
	Strategies of our competitors					
B	**Indicate the extent to which your firm operational activities are influence by:**					
	EPA Ghana					
	Ghana stock exchange					
	Other Industry specific regulatory bodies					
C	**Indicate the extent to which the following relate to your firm:**					
	Our staff are encouraged to adhere to professional codes of ethics of their respective professions.					
	Our industrial association emphasizes adherence to professionalism.					
	Our organization considers professional qualification in their recruitment policy.					

SECTION 3: ENVIRONMENTAL MANAGEMENT ACCOUNTING (EMA)

11. Please tick (/) the level of usage your firm makes of the following:

Never	Rarely	Sometimes	Often	Very Often	N/A
1	2	3	4	5	

A	**The inclusion of environmental information within the following management accounting and control systems:**	1	2	3	4	5	N/A
	The costing system						
	The budgeting system						
	Capital budgeting and expenditure						
	Investment appraisal						
	Performance measurement and appraisal						
	Internal reporting mechanisms						
	Risk assessment						
	Purchasing policy						
	Plant maintenance						
B	**The quantification of the following specific environmental issues (i.e. standalone environmental accounting procedures):**						

	Waste, emissions and effluents						
	Raw materials usage						
	Energy usage						
	Recycled materials usage						
	Returnable packaging/containers						
	Pollution (i.e., air, water, land)						
	Land remediation/Accounting for rehabilitation						
	Environmental contingent liabilities						
	Life cycle cost analysis in product development						
	Compliance costs of environmental regulations						
	Environmental costs in production costs						

C	**The inclusion of environmental information in the following areas of cost-benefit analysis:**						
	Energy efficiency						
	By product use						
	Recyclable containers/packaging						
	Waste management						
	Environmental contingent liabilities						
	Environmental compliance						
	Site contamination						
	Site cleanup						
D	**The undertaking of the following audits concerning environmental issues impacting on the firm as a result of the firm's activities**						
	General environmental audit						
	Waste audit						
	Energy audit						

ENVIRONMENTAL ACCOUNTABILITY PRACTICE

GRI based environmental disclosure index

	Panel A: HARD DISCLOSURE
A1	**Governance Structure and Management Systems (maximum score is 6)**
1	Existence of a Department for pollution control and/or management positions for environmental management (0-1)
2	Existence of an Environmental and/or a Public Issues Committee on the board (0-1)
3	Existence of terms and conditions applicable to suppliers and/or customers regarding environmental practices (0-1)
4	Stakeholder involvement in setting corporate environmental policies (0-1)
5	Implementation of ISO14001 at the plant and/or firm level (0-1)
6	Executive compensation is linked to environmental performance (0-1)
A2	**Credibility (maximum 10)**
1	Adoption of GRI sustainability reporting guidelines or provision of a CERES report (0-1)
2	Independent verification/assurance about environmental information disclosed in the EP report (0-1)
3	Periodic independent verifications/audits on environmental performance and/or systems (0-1)
4	Certification of environmental programs by independent agencies (0-1)
5	Product Certification with respect to environmental impact (0-1)

6	External Environmental Performance Awards and/or inclusion in a Sustainability Index (0-1)
7	Stakeholder involvement in the environmental disclosure process (0-1)
8	Participation in voluntary environmental initiatives endorsed by EPA or Department of Energy (0-1)
9	Participation in industry specific associations/initiatives to improve environmental practices (0-1)
10	Participation in other environmental organizations/assoc. to improve environmental practices (if not awarded under 8 or 9 above) (0-1)
A3	**Environmental Performance Indicators (EPI) (maximum score is 60)**
1	EPI on energy use and/or energy efficiency (0-6)
2	EPI on water use and/or water use efficiency (0-6)
3	EPI on greenhouse gas emissions (0-6)
4	EPI on other air emissions (0-6)
5	EPI on NPI (land, water, air) (0-6)
6	EPI on other discharges, releases and/or spills (not TRI) (0-6)
7	EPI on waste generation and/or management (recycling, re-use, reducing, treatment and disposal) (0-6)
8	EPI on land and resources use, biodiversity and conservation (0-6)
9	EPI on environmental impacts of products and services (0-6)
10	EPI on compliance performance (e.g., exceedances, reportable incidents) (0-6)

A4	**Environmental Spending (maximum score is 3)**
	Summary of dollar savings arising from environment initiatives to the company (0-1)
	Amount spent on technologies, R&D and/or innovations to enhance environmental performance and/or efficiency (0-1)
	Amount spent on fines related to environmental issues (0-1)
	Panel B: SOFT DISCLOSURE
A5	**Vision and Strategy Claims (maximum score is 6)**
1	CEO statement on environmental performance in letter to shareholders and/or stakeholders (0-1)
2	A statement of corporate environmental policy, values and principles, environmental codes of conduct (0-1)
3	A statement about formal management systems regarding environmental risk and performance (0-1)
4	A statement that the firm undertakes periodic reviews and evaluations of its environmental performance (0-1)
5	A statement of measurable goals in terms of future environmental performance (if not awarded under A3) (0-1)
6	A statement about specific environmental innovations and/or new technologies (0-1)
A6	**Environmental Profile (maximum score is 4)**
1	A statement about the firm's compliance (or lack thereof) with specific environmental standards (0-1)
2	An overview of environmental impact of the industry (0-1)

3	An overview of how the business operations and/or products and services impact the environment. (0-1)
4	An overview of corporate environmental performance relative to industry peers (0-1)
A7	**Environmental Initiatives (maximum score is 6)**
1	A substantive description of employee training in environmental management and operations (0-1)
2	Existence of response plans in case of environmental accidents (0-1)
3	Internal Environmental Awards (0-1)
4	Internal Environmental Audits (0-1)
5	Internal certification of environmental programs (0-1)
6	Community involvement and/or donations related to environ. (if not awarded under (0-1)

The scoring scale for each item in category A3 ranges from 0 to 6. A point is awarded for each of the following items:

1. performance data are presented;
2. performance data are presented relative to peers/rivals or the industry;
3. performance data are presented relative to previous periods (trend analysis);
4. performance data are presented relative to targets;
5. performance data are presented both in absolute and normalized form; and
6. performances data are presented at disaggregate level (i.e. plant, business unit, geographic segment).

APPENDIX K

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF HUMANITIES AND LEGAL STUDIES
SCHOOL OF BUSINESS
DOCTOR OF PHILOSOPHY (BUSINESS ADMINISTRATION) PROGRAMMES

Telephone (03321) 32440/32444 Ext. 219/220
Direct (03321) 36435
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Email: *sobphd_ba@ucc.edu.gh*
*Telex:*2552,GH.

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our ref: SB/PHDBA/1.1/P.121
Your ref:

11th February, 2020

The Chair

Institutional Review Board

University of Cape Coast

Cape Coast

Dear Sir/Madam,

INTRODUCTORY LETTER: GILBERT KWABENA AMOAKO

The bearer of this letter is a PhD (Business Administration) student of the School of Business. In partial fulfilment of the requirements for the programme, he is conducting a study on the topic; **"Isomorphic Factors in Corporate Environmental Management Accounting Implementation and Environmental Accountability in Ghana"** and would need ethical clearance from your outfit.

We would be grateful if he is offered the necessary assistance to enable him carry out the research.

We count on your usual cooperation.

Rev. George Tackie **(PhD)**
HEAD

APPENDIX L

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
INSTITUTIONAL REVIEW BOARD SECRETARIAT
TEL: 0558093143 / 0508878309/ 0244207814
E-MAIL: irb@ucc.edu.gh
C/O Directorate of Research, Innovation and Consultancy

OUR REF: UCC/IRB/A/2016/728
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

26TH JUNE, 2020

Mr. Gilbert Kwabena Amoako
Department of Management
University of Cape Coast

Dear Mr. Amoako,

ETHICAL CLEARANCE – ID (UCCIRB/CHLS/2020/17)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted **Provisional Approval** for the implementation of your research protocol **Isomorphic Factors in Corporate Environmental Management Accounting Implementation and Environmental Accountability in Ghana.** This approval is valid from 26th June, 2020 to 25th June, 2021. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST