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EFFECTS OF INSTITUTIONAL PRESSURES, ORGANISATIONAL RESOURCES, AND CAPABILITIES ON ENVIRONMENTAL MANAGEMENT ACCOUNTING FOR SUSTAINABILITY COMPETITIVE ADVANTAGE

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ABSTRACT

This study investigates the primary role of institutional pressure specifically (coercive, mimetic, and normative pressures) to implement environmental management accounting (EMA) among SMEs in Kenya, and how such influences are affected by organisational resources and capabilities, with a focus on the function of EMA, on sustainable competitive advantage (SCA). Using an online survey, random samples of 1,162 Kenyan manufacturing SMEs provided the data. The empirical findings indicate that normative and coercive forces have a substantial and direct relationship with EMA adoption. However, there was no correlation between mimetic pressure and the adoption of EMA. In addition, the results revealed that only environmental innovation capability positively and substantially mitigated the effect of coercive and normative pressure on EMA adoption. Our PLS analysis discovered a significant and direct relationship between EMA and SCA. In conclusion, the current research expands our understanding of how firms create EMA through the interaction of institutional forces (i.e., coercive and normative constraints) and environmental innovation potential. Furthermore, this study highlights the relevance and use of EMA in giving information to Kenyan SMEs to conduct superior SCA.

***Keywords*:** Institutional Pressure, Natural Resource Based View, EMA, SCA, SMEs, Kenya

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1. INTRODUCTION

The industrialization of global economies has recently started to operate under intense competitive pressure (Henri et al., 2016). Along with population evolution, infrastructure needs, utilities and foods increase the demand for non-renewable inputs from raw materials, energy, and water (Mokhtar et al., 2016). They were ultimately contributing to ecological degradation, such as pollution (Pondeville et al., 2013). Unfortunately, the current global economy generates over 2 billion tons of urban waste annually and is predicted to rise to about 3.40 billion tons by 2050 (Silva et al., 2021). About 63% of this pollution is contributed by developing countries, compared with only 37% from developed countries (Abubakar & Dano, 2020). Nevertheless, there is no doubt that a significant percentage of this pollution results from industrialization. For instance, in the case of Kenya, the third-largest economy in Africa, the country suffered from pollution and a low environmental performance index, as the Yale Center for Environmental Law and Policy (2020) reported. Manufacturing sectors are considered the second-most causes of pollution after transportation in Kenya compared with agriculture, urbanization and others (Macharia et al., 2022; Failler et al., 2016).

Consequently, the Kenyan government announced the Kenyan Vision 2030 development initiative in 2008. It is intended to assist the country in becoming a newly industrializing, middle-income nation that offers its residents a good quality of life in a safe and clean environment (Kibe, 2021). Consequently, many companies, especially SMEs, which account for 98% of all businesses in Kenya, recognized the significance of operating following the government's vision in order to increase their sales share on the global market, achieve better community relations and enhance their overall image (Osano, 2019). Businesses in industrialized nations such as the European Union (EU) place a high focus on adopting green manufacturing processes and sustainable technology. These corporations tend to avoid doing business with other corporations in developing nations whose activities and practices negatively affect the environment (Baah et al., 2020; Qian et al., 2015; Massoud et al., 2010). This circumstance may explain why the export of Kenyan commodities to EU countries over 2015-2019 has been unstable (Raga et al., 2021). Companies pursuing industrialization, sustainable development, and sustainable competitive advantage (SCA) must now respond to legislative pressure and reduce the negative environmental effects of manufacturing industries in order to achieve these objectives (Gunarathne et al., 2021; Wang et al., 2019).

On the other side, few scholars indicated that organizations, even facing external pressures, must have adequate resources and capabilities that affect firms' production and operation decisions for environmental protection behavior and thus adopting Environmental Management Accounting (EMA) (Latan et al., 2018; Wijethilake, 2017). Otherwise, with limited resources and capabilities, a company is less likely to proactively respond to stakeholder pressures to be environmentally compliant, and EMA adoption is more likely to be reactive or passive serving as a greenwashing [1] (Kang & He, 2018). Or they will follow the policy of wait and see attitude and they may resist changing to ecological protection measurement. The adoption of environmental management strategies is expensive, and the benefits are ambiguous in the short term (Brammer et al., 2012). For instance, due to a lack of financial and manpower resources in DRAM manufacturer Taiwanese

[1] According to Oxford Dictionary greenwashing is described as; -disinformation disseminated by an organisations so as to present an environmentally responsible public image.

computer memory company, the company was incapable of converting their conventional accounting system with Environmental Costing Accounting (ECA).

Given that manufacturing SMEs in Kenya are subjected to massive ecological pressures, and are thus required to search for a solution to align their environmental and economic objectives (Qian et al., 2015). In addition, considering the need for companies to deal with the current pace of natural resources scarcity and the necessary to obtain sufficient resources and capabilities (Martín-de Castro et al., 2016), In this scenario, EMA can play a substantial role as an auxiliary to corporations to construct a groundwork for better consciousness of the conflict between environmental impact and economic growth, and the possibilities for decreasing environmental impacts while improving SCA (Gunarathne et al., 2021). EMA aims to translate a company's environmental operation activities into higher performance through an efficient configuration of organizational and behavioral systems with organizational vision, missions and core value drivers (Asiaei et al., 2022). It provides rich information in order to control and measure a firm's internal operational activities for better decision-making processes. EMA targets improving innovative products (i.e. cleaner production), more complicated technological processes, and improved cost structures (Ferreira et al., 2010).

In spite of this, discussion among previous studies about EMA is primarily theoretical and constrained to developed industrialized countries and a few Asian countries such as China and the Philippines (Qian et al., 2015). As one of the largest sub-Saharan Africa, Kenya has not so far been carried into the central part of such discussion. Although, there is growing recognition that Kenya seeks to shift its economic and industrial model from low efficiency and high contamination to high efficiency and low contamination (Macharia et al., 2022). In addition, scholars for a long time have proposed an urgent need to focus more on the integration of sustainability and environmental accounting into the practices of SMEs. This issue persists in more recent empirical studies which concentrated on the practices and activities of EMA in larger organisations, a trend that leaves the role of this area amongst SMEs relatively scarce, hence expanding the gap between theory and practice (Wang et al., 2019).

Furthermore, some prior research employed new institutional sociology (NIS) to examine the correlation between institutional pressures and EMA implementation. Nevertheless, very limited studies shed light on the impact of NIS related to foreign markets-focused aspects and EMA adoption (Qian et al., 2015). Likewise, the natural resource based-view (NRBV) has also been suggested as a theoretical underpinning to interpret the integration of certain resources in constantly enhancing firms' environmental performance via EMA adoption (Latan et al., 2018). However, to what extent the integration of companies' resources and capabilities impacts SCA via the adoption of EMA has been very scarce explored (Latan et al., 2018: Hart & Dowell, 2011). To sum up, to the best of a researcher's knowledge, there are no empirical survey-based studies examining the influence of institutional pressures and organisational resources and capabilities on EMA adoption and SCA across Kenyan SMEs.

In accordance with leading arguments, a recent study attempts to develop a multilevel theoretical framework that combines institutional theories (i.e., NIS) and NRBV in order to provide a definitive explanation and understanding of EMA adoption across Kenyan SMEs, which ultimately leads to SCA. Interestingly, this framework has not gained much attention in environmental accounting studies but will be the central focus of this study. This study's primary purpose is to

determine the extent to which institutional pressure (i.e., coercive, mimetic, and normative pressures) influences EMA adoption among SMEs in Kenya. The study also intends to investigate the extent to which organisational resources and capacities influence the impact of institutional pressure (i.e., coercive, mimetic, and normative pressures) on EMA adoption among SMEs in Kenya. The final objective of this study is to determine the extent to which EMA implementation affects sustained competitive advantage. The present investigation is structured as follows. The section that follows describes the conceptual framework and hypothesis. The methodology is presented in the ensuing part, which also contains the sample definition, data collecting, and variable measurement, followed by the study's discussion and conclusion.

2. THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

A theoretical framework of a recent study, as shown in Figure 1, is based on a fusion of two theories namely NIS and NRBV. The NIS perspective explains the influences of institutional pressures on EMA. However, not every company responds to the same pressure in the same way. Ex ante heterogeneity among originalities is a significant factor influencing their responses to institutional constraints. Specifically, each firm takes into account its unique set of circumstances when formulating its response (Wang et al., 2017). A major driver that contributes to the diversity in enterprises' reactions to institutional constraints is the disparity in the availability of resources and capabilities among these firms. Therefore, the NRBV theory is also employed as a different theoretical perspective to assist in answering the question – why do some corporations embrace some accounting practices but not others in the same environment? NRBV posits that, firms can improve their competitive advantages and business performance if they possess resources that have characteristics of being rare, valuable, non-substitutable and imperfectly imitable capabilities and considering the interconnection with the natural environment (Hart & Dowell, 2011). Meanwhile, the strategy and action plans of firms are contingent upon and limited by available resources. Resources provide organizations with flexibility in the selection and adaptation of strategies in response to external and internal circumstance changes. Accordingly, the two theoretical perspectives (i.e. NIS and NRBV), with complementary emphasis on institutional pressure vs. competencies, are anticipated to provide more holistic explanations about the determinants that contribute to EMA being embraced or abandoned across Kenyan SMEs. The perspectives ultimately drive toward SCA that fail to be in the spotlight of environmental accounting studies but will be the primary focus of this research.

2.1. Institutional Pressures

In an attempt to explain antecedent variables prompting EMA adoption, institutional pressure could be appropriate and relevant for the current study. It offers clarification as organizations pursue to align with prevailing norms, values, and expectations in their external environment (Malmi & Granlund, 2009). From the institutional theory perspective, changes in the institutional environments of organizations in the broad social context are likely to drive a company's development to stimulate or hinder the adoption of new practices, including EMA. By doing so, the company will be seen as proper and legitimate by other members of the social institutions (Qian et al., 2011; Chang, 2007). Institutional pressures motivate organizations to adopt related corporations' management structure and internal processes, thus becoming isomorphic (Testa et al., 2018). It emphasizes how formal and informal components, such as general regularities or

society, affect these structures and practices on corporations to embrace EMA (Jalaludin et al., 2011); DiMaggio & Powell, 1983). Organizations need to integrate suitable, adequate, and necessary components to be institutionalized, regardless of whether these components drive toward efficiency, especially in the early adoption (Jalaludin et al., 2011). In simple terms, the corporations' decision is not necessarily driven by efficiency and rationality, but it also concerns regulatory compliance. Otherwise, corporations that reject responding to the conformity with surrounding pressures to be environmentally compatible are expected to be isolated by most society members (Wang et al., 2019).

This impact will gradually lead to homogeneity, promoting the implementation of novel management accounting techniques, such as EMA (Chang, 2007). The well-known categorization scheme for pinpointing processes that achieve organizational homogenization (or institutional isomorphism) is perhaps the one established by (DiMaggio & Powell, 1983). They proposed three pillars (coercive, mimetic, and normative). These pillars primarily occur from companies' stakeholders (e.g., general regularities, non-governmental organizations, suppliers, and customers) (Wang et al., 2017). Each of them forces companies to seek compliance from different angles and different mechanisms (Qian et al., 2015). For instance, coercive pressure results from political impact. It arises from the government and regulatory bodies as they intervene and impact companies to adhere to existing regulations of various associations (Jamil et al., 2015). Mimetic pressure comes from the standard response to uncertainty. In this case, firms attempt to resemble the response of similar elite organizations in initiatives seeking legitimacy (Masocha & Fatoki, 2018). In contrast, normative pressure occurs primarily from professionalism. It often stems from formal education or the foundation of professional bodies (DiMaggio & Powell, 1983). Scott, (2005) indicated that although the three pillars related to institutional pressures are often operated simultaneously, they demonstrate divergent degrees, and their relevance is context-specific. Further discussions on these institutional pressures and their impacts on EMA adoption will be presented in the following subsections.

2.1.1. The Impact of Coercive Pressure and EMA Adoption

Coercive pressure could be derived from various institutions, namely, the government, licensed authorities, or dependency-based bodies such as parent companies (Qian et al., 2015). Previous studies indicated that expanding enforcement of regulatory and policy directives on environmental protection, and environmental protection provide directly encourages and pressures business corporations to recognize and adopt EMA (Qian et al., 2015). On the other hand, without regulatory pressure, organizations are expected to be less motivated to adopt EMA (Jalaludin et al., 2011). Firms normally have superior impetuses to fulfil the requirements of the statutory law when they encounter a higher possibility of being non-compliant, thus, being exposed to harder sanctions (Berrone et al., 2013). They assume to obtain various catalysts and motivations, such as decreasing taxes and bank loans and getting permission to access scarce and necessary resources (DiMaggio & Powell, 1983). Therefore, firms are inclined to embrace EMA if they are well aware of the threats and opportunities resulting from regulatory pressures (Wang et al., 2019).

In the case of Kenya, the government, especially with its Vision 2030, took it upon itself to enhance the country's environmental situation (Kibe, 2021). It improves energy efficiency in the manufacturing sector. Further, it has attempted to increase the control and exploitation of natural resources in partnership with the local governance systems such as *Njuri Ncheke* (Meru

Community) and *Kaya* (Mijikenda) (Kibe, 2021). The findings of previous studies display mixed results. Jalaludin et al., (2011) found a low level of EMA adoption across Malaysian corporations due to the insignificant influence of coercive pressures. However, Jamil et al. (2015) revealed that Malaysian SMEs were more willing to adopt EMA because of the increasing regulatory pressures. Similarly, Qian et al. (2015) concluded that corporations in China seemed more responsive toward EMA development as they were subject to regulatory pressures. The basic justification for these inconsistent findings could be time. Ecological issues are becoming more concerning and prevalent over time. Governments have a growing interest in stressing companies to adopt EMA to manage their business environmental influences (Mokhtar et al., 2016). Therefore, the first hypothesis is designed as follows:

H1: There is a positive relationship between coercive pressures and the extent of EMA adoption.

2.1.2. The Impact of Mimetic Pressure and EMA Adoption

In general, implementing ecological innovation among various organizations involves high uncertainty. This uncertainty stems from the inability of these organizations to predict their customers' desires, competitors' challenges, and operating technologies (Pondeville et al., 2013). Therefore, several organizations bear the risk by capitalizing on environmental practices to meet and control pollution prevention on the rewards of sustainable development. In comparison, others wait until the uncertainty gradually disappears, even if they have the necessary resources and capabilities to build (Bansal, 2005). Minimizing uncertainty across the surrounding environment of an organization could be attained by imitating well-established practices and procedures executed by other similar companies or competitors (Jalaludin et al., 2011). If firms realize few values from certain practices that are considered to be a new-found industry standard, they may mimic rather than ask for this practice's value (Chang, 2007). In other words, companies are willing to emulate those players and reap the fruit of success once they recognize the good consequences of the EMA adoption. Otherwise, mimetic pressure would not happen (Wang et al., 2019).

The key actors and players in formulating mimetic pressure consist of competitors, multinational organizations, leading industry companies, and other industrial organizations (Wijethilake et al., 2017; Jalaludin et al., 2011; Colwell & Joshi, 2011). In some cases, SME managers may suffer from imitating international green practices and EMA. The reason refers to resistance from workers at the lower management level who prefer to perform their jobs routinely without considering the aspiration of the management at a high level to be environmentally accredited (Qian et al., 2015). Thereby such SMEs are suspended from accessing the global market. On the other hand, once SMEs have access to international markets that are more concerned with ecological issues, they become more uncertain due to their capability to fulfil their clients' demands, and this reflects potential adoption lateness in the overall market (Rao & Holt, 2005). For instance, Masocha and Fatoki, (2018) indicated that South African SMEs are positively and significantly impacted by mimetic pressures, particularly their main competitors for sustainable development with the entire dimensions, namely economic, environmental, and social. In a similar context, some firms hesitate because of the high cost of EMA adoption. Wang et al. (2019) reported that manufacturing companies in China did not mimic the leading company in the industry. The reason could be attributed to the companies' belief in the high cost of implementing EMA in the short term as no clear benefits could be attained. The following hypothesis has been formulated:

H2: There is a positive relationship between mimetic pressures and the extent of EMA adoption.

2.1.3. The Impact of Normative Pressure and EMA Adoption

Normative pressure arises from cooperation with commercial and business associations and different bodies, such as media, suppliers, and customers (Wang et al., 2019; Colwell & Joshi, 2011). The interactions of trade and industry associations through memberships in skilled associations play important roles in generating basic norms for EMA adoption (Wang et al., 2019). If the companies do not respond to the prepared norms, they will lose their good reputation and image among the public. Therefore, companies will be ready to adopt EMA to improve their reputation and increase their profit for an extended period (Wang et al., 2017; Gunarathne et al., 2021). Wang et al. (2019) reported that many corporations in the Chinese industrial zone would likely to adopt EMA more under normative pressures. Therefore, it maintains good partnerships with stakeholders and boosts reputation. In other respects, they would be constrained by their stakeholders, suffer the loss of external resources, and lose the market.

EMA promotion across accounting bodies and professional associations has formed a few normative pressures for organizations, mainly in the manufacturing industries, to offer environmental reporting or adopt some form of EMA (Chang, 2007). However, some interviews with accountants observed that they suffered from a lack of training and education which can make it difficult to lead organizational transformation for environmental management (Qian et al., 2015). Similarly, Jamil et al. (2015) shed light on the lower contribution of normative pressures to EMA due to a lack of appropriate guidelines and training. On the other hand, Jalaludin et al. (2011) revealed that normative pressures substantially impacted EMA usage across manufacturing companies in Malaysia. They indicated that "the education and training those accountants obtained, in addition to their membership of the accounting association, were strong factors that influence the way they work in every sense." Under this circumstance, the third hypothesis is developed as follows:

H3: There is a positive relationship between normative pressures and the extent of EMA adoption.

2.2. Natural Resource Based-View

The resource based-view (RBV) hypothesis inspired the development of the NRBV (Hart, 1995). It is regarded as one of the most important contributions to the environmental and sustainable areas because it incorporates resource management and eco-development assumptions within the same framework. NRBV involves three major strategic capabilities namely, pollution prevention, product stewardship, and sustainable development (Hart & Dowell, 2011). Pollution prevention is the initial process of decreasing the generation of emissions and wastes through internal operations (Darnall & Edwards, 2006). Pertinently, it does not involve activities such as output recycling or reuse, waste treatment, and disposal of waste, because in each of these activities, waste is first generated and then treated or controlled. Instead, it contains activities such as minimizing the use of raw materials or using resource substitutions, process changes and decreasing compliance and liability costs (Hart & Dowell, 2011; Darnall & Edwards, 2006). On the other hand, the responsibility of environmental aspects in terms of production stewardship extends to external operations looking for conservation, abandonment of harmful substances and recyclability via the

value chain or life cycle analysis (LCA) approach (Mcdougall et al., 2019)[2]. Whilst, sustainable development stimulates the contemplation of economic, environmental and social activities on a global scale (Hart & Dowell, 2011)[3].

NRBV demonstrates how these hypotheses might be implemented in enterprises to attain SCA and contribute to sustainable development objectives (Salvado et al., 2012, p. 9). In terms of the NRBV, a resource must fulfil the basic requirement (i.e. to be valuable and non-substitutable, rare, inimitable) and to be supported by tacit skills or socially complex organizational capabilities (Hart & Dowell, 2011). SCA-seeking corporations must satisfy most of their target market's customers' needs (Hall, 1993). In a market where customer demand for environmental initiatives is rising, businesses must acquire the appropriate tangible and intangible resources and environmental innovation capabilities (Hofman et al., 2020; Chan & Ma, 2016). Therefore, the current study logically assumes that the more adequate and proper resources and capabilities obtained by Kenyan SMEs, the greater the extent of EMA adoption. SCA would be correlated with the extent to which firms adopt EMA. More precisely, the second model anticipates that SCA is to be the extent of EMA adoption with the moderation role of resources and capabilities.

2.2.1. Moderating Effects of Financial Resources between Institutional Pressure and EMA Adoption

Indeed, the decision made to adopt EMA as a strategic response to external forces is essentially subject to financial resources availability (Brammer et al., 2012). EMA especially at the initial stage of its implementation, demands investing considerable money. This investment is important because it often involves a firm's modification throughout the entire operational process (Burnett & Hansen, 2008). Nevertheless, a significant number of SMEs lack the necessary financial resources to allocate towards environmental initiatives. Hence, this may serve as a rationale for the relatively low proportion of SMEs that can fulfil environmental efforts. However, numerous firms express scepticism over the potential benefits of environmental initiatives. This uncertainty arises from the consumer demand response, in addition to a significant time frame required to reach a favorable rate of return and the potential risk of project failure (Cuerva et al., 2014; Leonidoui et al., 2013; Schaltegger et al., 2008). However, previous research has contradicted those concerns (Leonidou et al., 2013). For instance, Brammer et al., (2012) found that SMEs recognize substantial benefits of engagement with environmental issues. Accordingly, SMEs need to increase their perceived benefits in certain ways to increase the likelihood of EMA adoption to save their image and reputation. Otherwise, a poor image and reputation resulting from weak environmental protection can damage the associations with stakeholders, the public sector, suppliers, customers, financial institutions, and the labor market, which ultimately influences their competitiveness and survival (Wang et al., 2017). Thereby, the subsequent hypotheses are formulated:

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[2] LCA or "cradle to grave" analysis assess the environmental burden (i.e. unusable outputs) of a product's entire life-cycle, and covers raw material extraction that influences the purchasing, production process, packaging, distribution and all the way down to the end of life span (Chan et al. 2014).

[3] According to Bruntland report issued by the World Commission on Economic Development (WCED), sustainable development is defined as "meeting the necessities of the present without compromising the ability of future generations to meet their own needs" (Bansal 2005).

H4a: Financial resources strengthen the correlations between coercive pressures and EMA.

H4b: Financial resources strengthen the correlations between mimetic pressures and EMA.

H4c: Financial resources strengthen the correlations between normative pressures and EMA.

2.2.2. Moderating Effects of Natural Ecological Orientation between Institutional Pressure and EMA Adoption

From an NRBV perspective, Natural Ecological Orientation (NEO) as a corporate strategic direction can be visualized as an effective intangible resource that steers strategic practices and improves performance (Chan et al., 2012). Shaping the company's strategic vision and motivating employees to become involved in environmental issues (Kang & He, 2018). It entails appreciating and respecting the natural ecology and being responsive to external stakeholders (Banerjee, 2002). Companies often exposed to various constraints (e.g., to be environmentally compatible) are imposed by different essential external institutions. For survival and to improve their SCA, companies must respond and tackle these constraints (DiMaggio & Powell, 1983; Oliver, 1997).

The correlations between institutional pressures and EMA seem to be moderated by NEO. Corporations with various levels of NEO respond unevenly to institutional influences in controlling the gateway between business activities and the natural ecology present (Kang & He, 2018). However, corporations with a low level of NEO will be less motivated to respond to external forces to take part in pro-environmental activities (e.g., EMA) to deal with the available demands (Chan et al., 2012). In addition, firms with a lower level of NEO will tend to see resource commitment and operational complexity as a potential risk, so a company's response to EMA adoption will be more likely to be reactive or passive, serving as a greenwashing (Kang & He, 2018). However, companies with a high level of NEO would expand their horizons by observing the continuous evolution of institutional forces and understanding this knowledge through cross-functional coordination. Additionally, they will consider the investment in EMA as a better use of available resources leading to SCA (Chan & Ma, 2016). In a recent empirical study conducted by (Kang & He, 2018) across manufacturing firms in China, they found that environmental orientation directly moderated the influence of institutional forces on a company's ecological management strategies.

H5a: NEO strengthens the correlations between coercive pressures and EMA.

H5b: NEO strengthens the correlations between mimetic pressures and EMA.

H5c: NEO strengthens the correlations between normative pressures and EMA.

2.2.3. Moderating Effects of Environmental Innovation Capability between Institutional Pressure and EMA Adoption

Previous scholars have ascertained that firms respond differently to external pressures when developing environmental management practices. These responses range from passive and reactive strategies, such as pollution control, to proactive behavior, such as pollution prevention and voluntary compliance (Kang & He, 2018). Firms with different strategies reflect their variances in possessing resources or capabilities (Barney, 1991). An organization that is capable to proactively

integrating environmental management practices into strategic processes, represents a choice of action by being more innovative in order to transform environmental investment into a source of competitive advantage and eventually to profit from such investment (Hart, 1995; Porter & Kramer, 2006). Porter and Van Der Linde (1995) proposed that "external forces towards improving natural environment enables firms to establish green innovation capabilities and that the benefits derived from these innovations may offset the cost of implementing environmental management practices and enable the firm to act more competitively" (Chan et al., 2016).

Environmental Innovation Capability (EIC) shows a lesser environmental footprint than precursors, either in terms of the environmental impact caused during the manufacturing stage (i.e., material usage, energy consumption, and labour, etc.) or in terms of the environmental impact of the product as it is being used over its life-cycle (i.e., product eco-innovations) (Hofman et al., 2012). It supports companies in inventing new solutions, including material exchange, recycling, improving manufacturing processes, and producing environmentally friendly goods (Yang et al., 2019). Thereby, EIC offset the cost of improving environmental impact and ending the stalemate (Porter & Van Der Linde, 1995). Environmentally friendly products play a significant role in influencing customer deeds and hence SCA (Chan et al., 2016). Although institutional forces play a vital role in shaping environmental regulations and policies, pressure alone cannot result in effective environmental management practices. Rather, using EIC as an intermediate for converting that pressure can help to enhance environmental performance (Kang & He, 2018). Therefore, if a company possesses a high degree of EIC, it is widely anticipated that it will satisfy the environmental priority by implementing EMA (Chan et al., 2016). In contrast, firms with low EIC are more likely to react reactively or passively to institutional influences. These claims were validated by Lee (2009). He said that small and medium-sized enterprises with a high EIC facilitate the creation of very advanced green management methods and operations. Further, it supports the findings of Kang and He (2018) who found that, innovation capability positively moderated the effect of institutional forces on firms' environmental management strategies among manufacturing firms in China. Based on the above-mentioned arguments, the following hypotheses were formed:

H6a: EIC strengthens the correlations between coercive pressures and EMA.

H6b: EIC strengthens the correlations between mimetic pressures and EMA.

H6c: EIC strengthens the correlations between normative pressures and EMA.

2.3. EMA Adoption and SCA

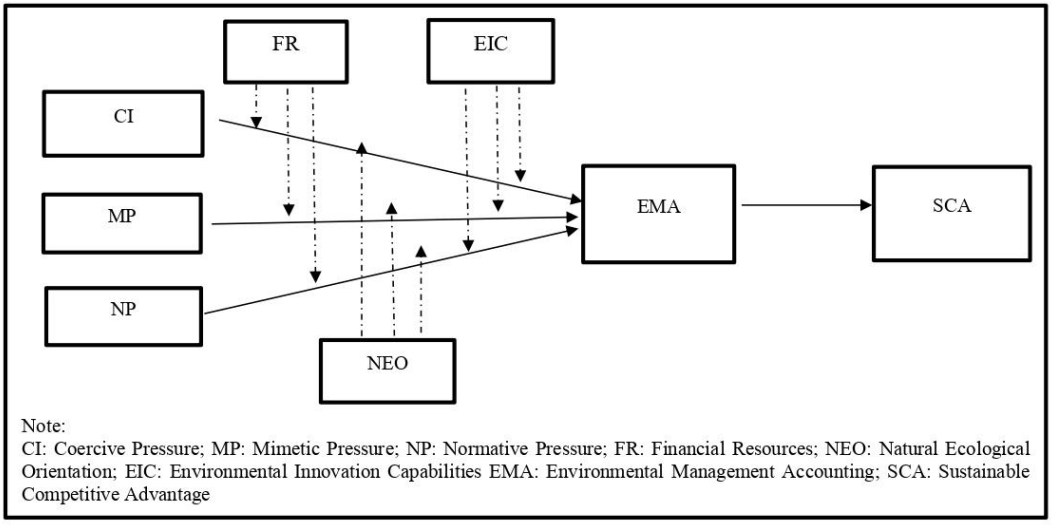
SCA could be described as a "valuable creating strategy that firms are pursuit to execute which not concurrently being performed by any recent or potential competitors and not easy to be duplicated by any other firms in order to foster the privileged market position, and the increase in market share" (Barney, 1991). Logically, corporations which pursue to obtain SCA, need to enjoy an advantage in the eyes of many of their clients in their targeted market (Hall, 1993). In a market where clients increasing the demand for cleaner production (CP), corporations must create a valuable strategy with specific attributes which involve factors such as; price, specification, reliability, availability and image that are not simultaneously being executed by any of their competitors (Barney, 1991). Furthermore, they need to generate high net profits, through greater cost leadership and product differentiation (Do & Nguyen, 2020). In this sense, SCA requests firms

to possess (resources, differential capabilities, and environmental management proactivity) that are valuable, rare, hard to be duplicated and non-substitutable (Junquera & Barba-Sánchez, 2018).

Despite reaching cost leadership and differentiation strategy are normally incompatible, because it is very costly to attain product differentiation strategy (Do & Nguyen, 2020). The notion of green differentiation rests on the concept that decreasing contamination will result in better demand by environmentally aware consumers, whose purchase decisions are influenced by the product's environmental features. The environmental result can support an innovation-based competitive advantage to be attained thanks to product differentiation, selling contamination control system, creating entry barriers and improving novel opportunities and better market access. (Junquera & Barba-Sánchez, 2018). For instance, Toyota an automotive company has developed a hybrid engine technology as an eco-friendly alternative that may save 10% of the environmental pollution emissions compared to conventional vehicles while consuming half the amount of gas. (Porter & Kramer, 2006). Regarding cost leadership, the practicing of EMA implies complying with legislation, lessening or evading legal responsibilities and the amount of waste, and also enhancing efficiency and productivity (Do & Nguyen, 2020), by reporting environmental cost information and associated opportunities that organizations and competitors do not generally determine (Gunarathne & Lee, 2015). On the other hand, environmental costs in conventional cost accounting are either hidden in overhead accounts or not recorded (Jasch, 2006). For instance, the environmental costs under a traditional cost accounting system in one Lithuanian textile SMEs were identified as €348,000. However, after applying EMA, the environmental costs were properly re-evaluated and assigned, which amounted to five times higher than the conventional cost of €1.7 million. The result obtained motivated the company to take a decision and implement innovative cleaner production which reduces the overall costs by 10% in the first year. This action enhances a firm's competitiveness in the market and could have a positive impact on the company's future success (Staniskis & Stasiskiene, 2006). As a result, the following hypothesis was established as follows:

H7: There is a positive relationship between the extent of EMA adoption and SCA.

Figure 1 Research Model**.**



3. RESEARCH METHODOLOGY

3.1. Survey Design and Administration

To examine the associations between institutional pressure, organizational resources, capabilities, EMA adoption, and SCA, a survey was administered to gather data from samples of 1,162 Kenyan manufacturing SMEs from the Kenyan Exporters Association membership as well as the Union of Chambers of Commerce, and the industry partners database. The reason for choosing an online survey is that it can reach a big random sample in a very minimum time, with a lower cost and economic scale (Dillman et al., 2014). Further, in EMA studies, no database still includes relevant information regarding EMA and SCA (Henri et al., 2016). This research focuses on the manufacturing sectors due to their high visibility in natural environmental problems (Banerjee et al., 2003). Moreover, due to their use of non-renewable raw materials, they are under substantial force from many stakeholders to modify their management control system to reflect the environmental practices (Pondeville et al., 2013).

Before a real questionnaire distribution, a pre-test analysis was implemented by passing a draft copy of a questionnaire to four academicians (i.e., senior management accounting lecturers) and five managers as a process of construct validity (Henri & Journeault, 2010). Such a process is necessary to understand each instrument's constructs and questions, introductory body text, and the phrasing of questions and response options (Ax & Greve, 2017). Minor adjustments were obtained and considered regarding wording, ordering, and presentation. Finally, the questionnaire was then revised and refined. CEO or senior manager was initially targeted in this study, due to their deep understanding of the firm's environmental management accounting. The online questionnaire was personally emailed providing response instructions and guaranteeing anonymity. In total, 266 valid questionnaires were obtained, for a response rate of 22.9%, close to

the rates revealed in prior environmental management practice studies (Henri et al., 2016; Henri et al., 2014). Kline (2011) indicated that a sample size of about 200 cases is sufficient for studies utilizing Structural Equation Modeling (SEM). Further, the least sample size for a Partial Least Squares model ought to be identical to the greater of about ten times the largest amount of formative indicators used to assess one construct (Hair et al., 2014).

3.2. Measurement of Constructs

The components in this study were assessed using several indicators and operationalized using multiple-item Likert scale questions. Multi-item constructs boosted survey completion and reduced ambiguity, enhancing research tools' validity (Ferreira et al., 2010). The full collection of items was rated on a five-point Likert scale, with 1 indicating strong disagreement and 5 indicating strong agreement. Respondents were asked to indicate their level of agreement or disagreement with each statement. Adoption of the EMA was determined by adopting the modified scales of Wang et al. (2019) and Latan et al. (2018), together with the addition of two items provided by Jamil et al. (2015). Respondents were asked to rate their agreement concerning the application of the fourteen items to their organisation (see table 1). Respondents ' responses were evaluated using a descriptive analysis based on mean scores. A higher mean score suggested that their accounting systems estimated greater environmental expenses.

The coercive, mimetic, and normative institutional pressures were measured using the scales of Shibin et al. (2020), Wang et al. (2019), and Masocha and Fatoki (2018). Similarly, a higher score indicated that the firm was subjected to a great deal of pressure to implement EMA due to the three processes. The seven-item scale developed by Roxas and Chadee (2012) was used to quantify financial resources. A higher score indicated the company's financial health. EIC was measured using the scales of Hofman et al. (2020), and Saeidi and Othman (2018). This study employed Chan et al. (2012) scale for NEO. SCA was assessed using the scale developed by (Severo et al., 2017).

3.3. Data Analysis

Structural equation modelling (SEM) was utilised to evaluate the research model. Using PLS Graph Version 3.0, Partial Least Squares (PLS) estimates for the measurement and structural parameters of the proposed structural model were derived (Chin, 1998). In management accounting research, the PLS application is seen as more acceptable, particularly for models with complicated linkages (multiple components, indicators, and relationships) (Salim et al., 2018; Ylinen & Gullkvist, 2014; Pondeville et al., 2013; Ferreira et al., 2010). Consequently, the full study goals (1 to 3) would be evaluated simultaneously. PLS is suited for small samples and does not need multivariate normal data. In addition, it establishes basic standards for measurement levels (Chin, 1998). Nevertheless, the minimum acceptable sample size for PLS analysis should be fewer than 100 instances (Latan et al., 2018). In addition, PLS uses the iteration algorithm approach after a series of simple or multiple ordinary least squares regression studies (Hair et al., 2014).

The interpretation of the route coefficient might be equivalent to the standardisation of regression coefficients. Moreover, the measure loadings on a structural model's respective constructions constitute factor loadings (Pondeville et al., 2013). In summary, the relationship of a model's construct analyses would undergo the following phases in the current study: I assessing the

reliability and validity of a measurement model for each construct's variables; ii) evaluating the structural model for representing the model's suitability with observational data; and iii) examining the direct correlation effect between independent variables (i.e., institutional pressures) and the dependent variable, EMA. This study ultimately examined the indirect correlation impact between independent variables and outcome, modified by financial resources, NEO, and EIC, and mediated by EMA.

Table 1: List of Measurement Items

Constucts	Measurement Items	Code
Coercive Pressures	Carry out legislated standards for carbon emissions; threat of legal prosecution.	CP1
	Reduce the threat from the legislated standards and/or environmental regulations by EMA adoption.	CP2
	Environmental regulations are very important to EMA adoption.	CP3
	Environmental standards have been set by local government.	CP4
	Impose several fines and penalties if it violates environmental standards and regulations.	CP5
	losing brand value and goodwill if it does not meet environmental standards and regulations.	CP6
Mimetic Pressures	The leading companies set an example in the field of EMA adoption.	MP1
	The leading companies are well-known for EMA adoption.	MP2
	The leading companies are intending to reduce their impacts on the environment by EMA adoption.	MP3
	The leading companies have obtained sustainable competitive advantages by EMA adoption.	MP4
	The main competitors that adopt EMA are perceived favorably by customers.	MP5
	The main competitors that adopt EMA have benefited greatly from its adoption.	MP6
	The main competitors that adopt EMA are more competitive than the rest.	MP7
Normative Pressure	Adopt EMA due to the increasing consumers' environmental perception.	NP1
	Environmental responsibility and disclosure of environmental information	NP2
	Adopt EMA to reduce the pressure from trade and/or professional associations.	NP3
	My company pursues EMA to reduce the pressure from firms or groups of firms that are already complying with environmental regulations and standards.	NP4
	My company may be at risk of being not supported by stakeholders due to not using EMA	NP5

Financial Resources	My company has sufficient financial resources to support business activities.	FR1
	My company has no problem in obtaining access to loans and credits from financial institutions.	FR2
	My company has a positive cash flow.	FR3
	My company can raise funds to support future plans of expanding its production capacity.	FR4
	My company has sufficient financial resources to support the training and development of all employees.	FR5
	My company has sufficient financial resources to purchase new production machinery or equipment when required.	FR6
	My company has excess financial resources to take part in environmental protection programs.	FR7
Natural Environmental Orientation	My company's business activities are impacted by developments within the natural environment.	NEO1
	The financial situation of my company relies on the natural environment's state.	NEO2
	Environmental preservation is crucial to the survival of my company.	NEO3
	My company tries to preserve the environment so that it can satisfy the expectations of external stakeholders.	NEO4
	My company makes a concerted effort to allow all employees to comprehend the value of environmental preservation.	NEO5
	My company has explicit policy statements that demand environmental awareness in all areas of operations.	NEO6
	Environmental preservation is significantly valued by the members of my company.	NEO7
	Environmental preservation is a core corporate value in my company.	NEO8
Environmental Innovation Capability	My company has introduced enhanced products and services that are more environmentally friendly compared to the ones available in the market.	EIC1
	My company has made minor changes to its products that primarily involve some modification in available technologies and products with a minor decrease on environmental impact.	EIC2
	My company has slightly changed its products to decrease the environmental impact.	EIC3
	My company has created eco-innovations that led to the removal of certain hazardous substances during production.	EIC4
	My company intentionally talks about if a product is easy to reuse, recycle, and decompose when designing it.	EIC5
	My company has made great changes in the production processes that decrease the emission of hazardous waste	EIC6

	Great changes were made during a production process which recycled emissions and waste.	EIC7
	My company made significant changes in the production processes which reduced the utilization of water, coal, electricity, and oil.	EIC8
EMA	My company records the physical outputs and inputs	EMA1
	My company creates environment-related cost accounts	EMA2
	My company allocates environmental costs involved in production.	EMA3
	My company allocates environmental costs involved in production.	EMA4
	My company estimates environmental-related liabilities.	EMA5
	My company identifies environmental-related liabilities.	EMA6
	My company performs physical environmental investment appraisal.	EMA7
	My company performs physical environmental budgeting.	EMA8
Constucts	**Measurement Items**	**Code**
	My company evaluates the product life cycle costs.	EMA9
	My company considers product inventory analysis.	EMA10
	My company considers product improvement analysis.	EMA11
	My company considers product environmental impact analysis.	EMA12
	My company employs environment-related key performance indicators.	EMA13
	My company evaluates potential environmental effects involved in capital investment decisions.	EMA14
Sustainability Competitive Advantage	My company's revenue with new products is better compared to its competitors.	SCA1
	My company's operation costs in production and service delivery are lower than its competitors.	SCA2
	The profitability of my company's new products is better compared to its competitors	SCA3
	My company's new products use knowledge and concepts in EMA.	SCA4
	My company's new products are produced following green Entrepreneurial EMA principles.	SCA5

4. RESULTS

4.1. Assessing Psychometric Properties

This study included many studies to confirm the measurement model's sufficiency in terms of reliability, convergent validity, and discriminant validity. Cronbach's alpha, composite reliability and average variance extracted (AVE) were utilised to evaluate measurement model reliability. In addition, convergent and discriminant validity was performed to validate the variable validity of

the constructs (Hair et al., 2014; Chin, 1998). Cronbach's alpha varied from 0.630 to 0.906 according to the PLS analysis, composite reliability/rho A ranged from 0.757 to 0.924, and AVE ranged from 0.351 to 0.636 (see Table 2). Cronbach's alpha > 0.60, composite reliability/rho A > 0.70, and AVE > 0.50 were met, as suggested by Chin (1998), and Fornell and Larcker (1981). On the other side, several indicators had AVE values smaller than 0.50. As long as the composite dependability is better than 0.6. Fornell and Larcker (1981) noted that an AVE less than 0.5 and larger than 0.4 is still acceptable (Huang et al., 2013).

The factor loading value is used to evaluate convergent validity. Most loadings indicators to their respective constructs were significant at the p 0.01 level and more than the benchmark value of 0.60, as shown in Table 2. (Hulland, 1999). The suggested indicator loading and cross-loading threshold value should be greater than 0.70. (Hair et al., 2014). Nonetheless, it is usual for distinct measurement parameters in a predictable model to have loading values less than 0.7, particularly when new items or significantly better scales are employed (Hulland, 1999). When an item's weight is unimportant, and its outer loading is less than 0.50, a researcher must eliminate it (Hair et al., 2014). For assessing discriminant validity, the Fornell-Larcker criteria were applied (Pondeville et al., 2013). This method involved comparing the square root of the AVE values to the latent variable correlations. Specifically, the square root of every component's AVE must be greater than its highest correlation with other variables (Hair et al., 2014). According to Table 3, the item intercorrelations in this investigation did not surpass the constructions' square root of AVE. Therefore, the instruments' psychometric characteristics supported the interpretation of the suggested structural model.

Table 2: Psychometric Properties of Measures

Construct	Items	Factor Loading	Cronbach's Alpha	rho_A	Composite Reliability	AVE
CP	CP1	0.589	0.63	0.653	0.757	0.351
	CP2	0.639				
	CP3	0.605				
	CP5	0.673				
	CP6	0.662				
MP	MP1	0.802	0.881	0.886	0.908	0.589
	MP2	0.785				
	MP3	0.669				
	MP4	0.831				
	MP5	0.614				
	MP6	0.826				
	MP7	0.814				
NP	NP1	0.501	0.748	0.768	0.834	0.507
	NP2	0.741				
	NP3	0.759				
	NP4	0.803				
	NP5	0.716				
FR	FR1	0.718	0.906	0.942	0.924	0.636
	FR2	0.768				
	FR3	0.806				

	FR4	0.835				
	FR5	0.808				
	FR6	0.848				
	FR7	0.792				
NEO	NEO3	0.617	0.818	0.851	0.855	0.434
	NEO4	0.756				
	NEO5	0.794				
	NEO6	0.744				
	NEO7	0.698				
	NEO8	0.670				
EIC	EIC1	0.678	0.818	0.825	0.863	0.444
	EIC2	0.671				
	EIC3	0.672				
	EIC4	0.691				
	EIC5	0.614				
	EIC6	0.744				
	EIC7	0.741				

Construct	**Items**	**Factor Loading**	**Cronbach's Alpha**	**rho_A**	**Composite Reliability**	**AVE**
EMA	EMA1	0.560	0.892	0.896	0.909	0.416
	EMA2	0.614				
	EMA3	0.642				
	EMA4	0.689				
	EMA5	0.692				
	EMA6	0.703				
	EMA7	0.684				
	EMA8	0.683				
	EMA9	0.616				
	EMA10	0.576				
	EMA11	0.569				
	EMA12	0.665				
	EMA13	0.654				
	EMA14	0.663				
SCA	SCA1	0.677	0.751	0.796	0.826	0.492
	SCA2	0.523				
	SCA3	0.762				
	SCA4	0.737				
	SCA5	0.778				

Table 3: Correlation of Latent Variables and Sqaure Root of AVE (on Diagonal)

CONSTRUCT	1	2	3	4	5	6	7	8
1. CP	**0.593**							
2. MP	0.489	**0.767**						
3. NP	0.473	0.667	**0.712**					
4. FR	0.331	0.382	0.346	**0.797**				
5. NEO	0.273	0.213	0.213	0.265	**0.659**			
6. EIC	0.444	0.574	0.548	0.407	0.410	**0.666**		
7. EMA	0.329	0.248	0.306	0.206	0.445	0.381	**0.645**	
8. SCA	0.317	0.566	0.476	0.301	0.184	0.439	0.217	**0.701**

4.2 Descriptive Statistics

Descriptive statistics regarding the main constructs are presented in Table 4. On average, the statistics showed high EMA adoption levels; the mean score was 4.24. In addition, the three pillars of institutional theory (i.e., coercive pressure [CP], mimetic pressure [MP], and normative pressure [NP]) recorded mean of 4.21, 3.94, and 4.07, respectively. It seems that the Kenyan government is taking a proactive stance on protecting the environment, and their efforts are having a significant impact in promoting eco-friendly practices and pro-environmental behavior decision-making of manufacturing SMEs. Furthermore, it seems that, the involvement of industry associations, trade associations, professional bodies, and other social actors plays a significant role in encouraging SMEs to boost their environmental position, consequently maintaining sound relationships with stakeholders and enhancing good reputation. However, mimetic pressure indicated a moderate level of pressure. Likewise, financial resources denoted an average mean score of 3.91. In contrast, NEO and EIC carried a high mean level of 4.26 and 4.12, respectively. This finding could support prior researchers who agreed that intangible resources are more likely to drive toward SCA through EMA than tangible resources (Wang et al., 2019; Latan et al., 2018; Wijethilake, 2017). Intangible resources encompass distinctive attributes (i.e., rare, valuable, inimitable, and non-substitutable), which make them difficult to be obtained or copied by other competitors (Kristandl & Bontis, 2007; Surroca et al., 2010). SCA recorded the least response with a moderate mean level (3.85), proposing that the SMEs still had the potential to enhance SCA, especially through EMA precepts application.

Table 4: Descriptive Statistics

Variables	Actual Range		Mean	Std. Deviation
	Minimum	Maximum		
CP	1	5	4.21	0.697
MP	1	5	3.94	0.843
NP	1	5	4.07	0.759
FR	1	5	3.91	0.896
NEO	1	5	4.26	0.707
EIC	1	5	4.12	0.693
EMA	1	5	4.24	0.636
SCA	1	5	3.85	0.818

Notes: Theoretical ranges for all the variables are from 1 to 5

4.3. Hypothesis Testing and Result Analysis

A high correlation among independent variables might increase the potential of multicollinearity. For that reason, this study tested the multicollinearity of the structural model before analyzing the results. Variable inflation factor (VIF) was used to identify the level of multicollinearity. It is recommended that VIF values should be lesser than 5 to accept all variable predictors in the model (Hair et al., 2017). The results in Table 5 exhibited no serious multicollinearity problem interfering with the results. In addition, the statistical power of the model (R^2 or adjusted R^2) in analyzing interaction effects with a product indicator method was evaluated using Cohen's criteria (Cohen, 1988). R^2 represented the coefficient of determination that reflected the value of variance in the endogenous variables that entire exogenous constructs could clarify. Cohen, (1988) indicated that R^2 values ranging between (0.02-0.12), (0.12-0.25), and (0.25-1) represent a small, moderate, and significant effect size. Table 6 showed that the predictor constructs could describe EMA and SCA with adjusted R^2 0.412 and 0.049. It is implied that EMA had a substantial effect size. While SCA had a weak effect size (Cohen, 1988). To sum up, the associations among the constructs had adequate statistical power to explain the model of this study.

Table 5: Collinearity Statistics Test and Model Result

Variables	Standardized Coefficients	Collinearity Statistics
		VIF
CP	0.126	1.599
MP	-0.052	2.408
NP	0.167	2.234
FR	0.059	1.474
NEO	0.148	1.602
EIC	0.156	1.872

The results of testing the research hypotheses, including the effects and statistical significance of the parameters, were evaluated by non-parametric techniques. A bootstrapping process with replacement applying 1,000 resamples – created from the original dataset – was undertaken, as proposed by Chin, (1998). Table 6 presents the structural model and outlines the results of the hypothesis testing. It involved path coefficients, their significance (at the p = 0.01 and 0.05 level), and the multiple R-square values. First, the initial research model test without the moderator variables FR, NEO, and EIC indicated a significant effect of CP on EMA, which obtained a t-value of 1.708 for a two-tailed test with a p-value < 0.01. NP (t-value = 2.495, p < 0.01) was also positively and significantly related to EMA adoption. These results were similar to Wang et al., (2019) and Jalaludin et al., (2011). However, the results of MP revealed an insignificant impact with EMA but with t-value = 0.728. The moderator and mediator effects were also examined by using PLS-SEM. EIC was only positive and substantially moderated the association between CP and EMA adoption (t-value = 1.65, p < 0.01). These findings meant that the positive effects of CP on EMA adoption could be improved if environmental innovation capabilities were raised.

However, hypotheses H4a, H4b, H5a, H5b, H5c, H6a, and H6c were contrary to the authors' expectations. Moderation was not supported. Although CP and NP were found to significantly impact EMA adoption, the interaction influence of both pressures with tangible and intangible resources made such relation insignificant. This excluded EIC on the CP and EMA adoption and EIC on the association between NP and EMA adoption. It is implied that the effect of CP and NP on EMA adoption did not demand other catalysts. It can be noticed that the t-value for the EMA->SCA relation was 2.948. Further, the current study used Cepeda et al., (2017) method to compute the specific indirect impacts and the various confidence intervals. This method uses the Excel technique to acquire the power of mediator impacts ($a_1 \times b_2 + a_1 \times b_2$) in the association between EMA and SCA. Consequently, there were significant associations observed between the CP, NP and EMA adoption. In addition, the impact of this phenomenon may be heightened in instances where the EIC is elevated. This is because EIC is important for SMEs to adopt EMA. Furthermore, EMA drives to support SCA.

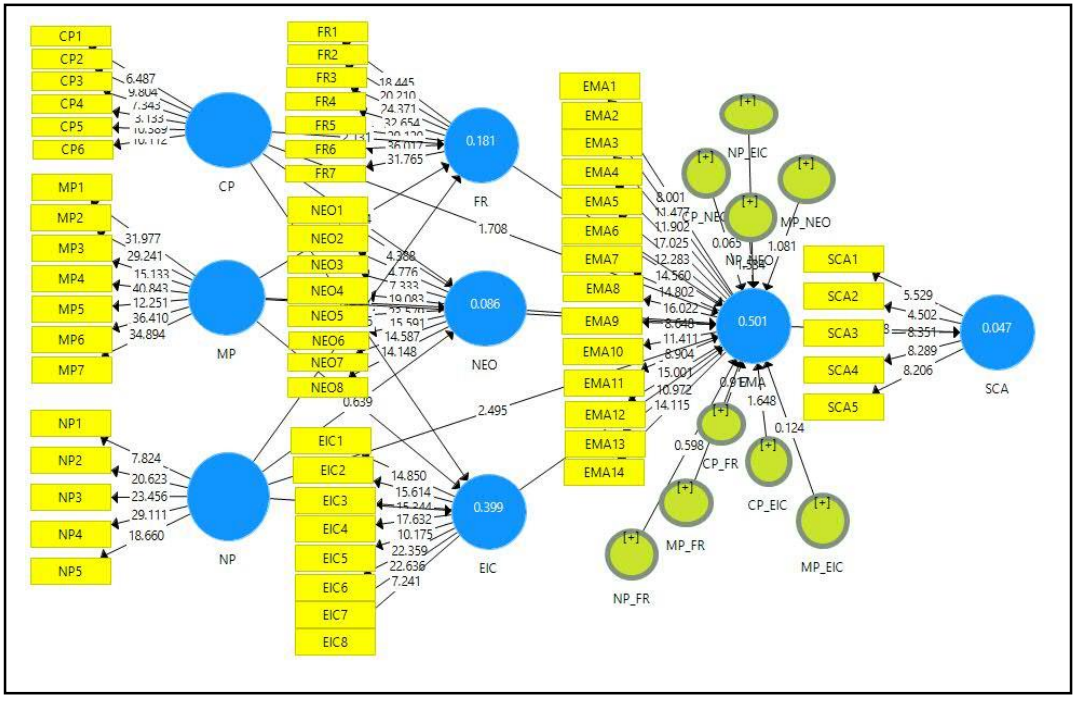
Table 6: Hypotheses Test Results, R^2

Hypothesis	Relationship	Coef (ß)	P-Value	T-Value	Results
H1	CP -> EMA	0.126**	0.088	1.708	Supported
H2	MP -> EMA	-0.052	0.467	0.728	Not supported
H3	NP -> EMA	0.167**	0.013	2.495	Supported
H4(a)	CP-> FR -> EMA	0.112	0.359	0.917	Not supported
H4(b)	CP-> NEO -> EMA	0.007	0.948	0.065	Not supported
H4(c)	CP-> EIC -> EMA	0.197**	0.098	1.65	Supported
H5(a)	MP-> FR -> EMA	0.053	0.577	0.558	Not supported
H5(b)	MP-> NEO -> EMA	-0.212	0.28	1.081	Not supported
H5(c)	MP-> EIC -> EMA	-0.011	0.901	0.124	Not supported
H6(a)	NP-> FR -> EMA	0.084	0.379	0.881	Not supported

H6(b)	NP-> NEO -> EMA	0.056	0.55	0.598	Not supported
H6(c)	NP-> EIC -> EMA	0.149*	0.125	1.534	Partially supported
H7	EMA -> SCA	0.217**	0.003	2.948	Supported
R^2	EMA	0.412			
R^2	SCA	0.049			

Note: **, * statistically significant at the 1 percent, 5 percent levels, respectively

Figure 2: Evaluation of PLS path model.



5. DISCUSSION

The results of this study underlined the importance of CP and NP being independently and individually the key forms of control in EMA adoption. The effect of MP was however somewhat different. The findings also indicated that EMA appeared to interact with NP, CP, and CP with the availability of EIC and SCA. However, the results highlighted no significant impetus for tangible and intangible resources on the association between institutional mechanisms and EMA, except on the interaction association between CP and EMA adoption via EIC. In-depth findings are displayed in Figure 2 and will be discussed in more detail below.

Regarding study objective (1), it was supposed that institutional pressure (i.e., CP, MP, and NP) could positively and directly affect EMA adoption across Kenyan SMEs. The analysis results regarding CP and NP provided evidence to support H1 and H3 fully. These findings confirmed that NP had a major influence on EMA adoption. It is implied that NP, which results from interactions between trade and industry associations via membership in professional associations, may have a greater influence on EMA adoption than CP, which reflects standards and regulations designed by the government and general regularities. This finding was perhaps due to the perspective of Kenyan SMEs about the significant role of trade and industry associations in increasing their export shares globally if they adopted EMA, despite the high efforts carried out by the Kenyan government in protecting nature.

More globally, these findings, to a certain degree, supported the view and general conclusions of prior emerging research in environmental accounting (Wang et al., 2019; Jamil et al., 2015; Jalaludin et al., 2011), which partially supported the impact of institutional pressures. For instance, Jalaludin et al. (2011) explained that coercive and mimetic pressures did not impact EMA adoption. There was a significant and positive relationship between normative pressure and EMA adoption. Jamil et al. (2015) reported that regulatory pressures increased the likelihood of Malaysian SMEs adopting EMA, while normative and mimetic pressures had limited contributions to EMA. However, these findings were inconsistent with previous empirical evidence Gunarathne et al. (2021); Testa et al. (2018) which revealed that institutional isomorphisms with the three pillars increased the likelihood of companies adopting EMA.

The second study objective examined the extent to which organizational resources and capabilities moderated the effect of institutional pressure on EMA adoption. Surprisingly, the results did not support the indirect impact of organizational resources on EMA adoption through institutional pressure. Nevertheless, the moderating effect of EIC on the association between CP and EMA adoption and the moderating EIC on the association between NP and EMA adoption showed full support of H4c and partial support of H6c, respectively. These results demonstrated that the impact of CP or NP on EMA adoption was strengthened when environmental innovation capabilities increased. This result was partly in line with (Kang & He, 2018), who found that both environmental orientation and innovation capability positively moderated the effect of institutional forces on the firms' environmental management system. As such, firms need to adopt EMA. Companies with high EIC are more oriented to possess stronger abilities and stimulus to exercise EMA. Thereby, when firms encountered coercive forces applied by powerful public authorities, at the same time, such firms faced the normative pressure carried out from customers' perceptions, industry associations, and trade associations. Firms with high EIC are more prone to implement EMA to comply with coercive and normative pressures and preserve good associations with related parties and reputation. Otherwise, the government would penalize them, their stakeholders perhaps isolate them, and they would suffer from external resource loss and then lose the market (Wang et al., 2019). The third study objective concerned whether EMA adoption affected SCA. This objective relates to the investigation of H7, which was fully supported. EMA seems to contribute significantly to the enterprises' economic gain and differentiation. Furthermore, it is also shown that SCA can result from EMA adoption, since such adoption systematically decreases production costs and waste, as well as resource consumption (Severo et al., 2017).

6. CONCLUSION

The current study has three objectives: (1) to determine the extent to which the three pillars of institutional pressure, namely coercive pressures, mimetic pressures, and normative pressures, influence EMA adoption; (2) to determine the extent to which organisational resources and capabilities moderate the effect of institutional pressure on EMA adoption; and (3) to determine the extent to which EMA adoption influences SCA. Using data from an online survey of manufacturing SMEs in Kenya, correlation analysis revealed that coercive and normative pressures were highly and directly connected to EMA adoption. However, there was no correlation between mimetic pressure and the use of EMA. In addition, the findings revealed that EIC might only encourage using EMA under coercive or normative coercion. PLS discovered a strong and direct relationship between EMA and SCA. Therefore, the outcomes were weaker than anticipated.

These results had a significant implication for the stream of research, particularly cost accounting and EMA from the theoretical and practical angles, by underlining the role of EMA in achieving the environmental performance of companies. This study highlighted that incorporating environmentally friendly business tends to pay off in terms of long-term sustainability and competitive advantage for the management. In EMA practices, an accounting information system is a supporting method by providing useful data for accomplishing SCA decision-making, planning, and control purposes. Theoretically, institutional pressures involving regulatory and normative pressures positively impact companies to adopt EMA. Meanwhile, this improves the recognition of external variables' impacts on EMA adoption. Furthermore, this study employed the NRBV theory to investigate the synergy influences of institutional pressures, financial resources, NEO, and EIC on EMA adoption. More notably, this study highlights how enterprises responded to institutional pressures in reliance of the conditions that they are facing. Specifically, the influence of institutional factors on EMA application ought to be considered when enterprises are equipped with EIC.

Practically, this work indicated that corporations are concerned with self-interest and association interests. Organizations are ready to be subjected to surrounding pressures in order to maintain good relationships with stakeholders. Therefore, the legislators and related government organizations, such as Kenya’s Environmental Protection Agency, can enact industry-specific legislation and law enforcement procedures. Firms were motivated by normative pressures to improve corporate reporting and sustainability practices, especially in Kenya. As such, the government can create an appreciation of ecologically leading companies that reveal a quantifiable influence on environmental sustainability. This effort can involve a program of national environmental awards, tax concessions, soft loans, and other benefits. Next, the lack of correlation between mimetic pressures and EMA adoption could be explained by the fact that companies have access to policies and guidance from consultants who specialize in environmental issues. This means that companies do not need to imitate each other when trying to deal with uncertainties related to management accounting and environmental practices (Jalaludin et al., 2011). Eventually, the findings offer an understanding to a high management level to improve the capabilities regarding institutional pressures, apply EMA tools and consequently, boost a company's sustainable competitive advantage.

Despite the beneficial implications of the findings of this empirical study, a few limitations need to be summarized. First, this study was designed using an online survey-based approach

considering social desirability bias. Future literature may utilize a mixed methods approach (i.e., survey and interview) to validate and strengthen the findings. Further, the current research collected data from exporter SMEs in Kenya. Many companies have certain environmental management practices due to their trade connection with developed industrialized countries. However, other company types (i.e., large and medium-sized industries and even the entire type of SMEs) are required to be involved as future studies to reflect a larger number of business entities. Furthermore, the study's sample concentrated on Kenya, which limits the generalizability of findings due to the country's specific institutional settings. As a result, more research on developing countries covering a wide range of geographical regions is needed to assess the model's validity.

Furthermore, this study depended on specific moderator variables: financial resources, NEO, and EIC. Prior research indicated that environmental strategy, top management, and supplier cooperation are all significant for corporations to carry out EMA Christ & Burritt, 2013; Latan et al., 2018; Wamba & Shahbaz, 2018; Salim et al., 2018); Wang et al., (2019). Future empirical studies may investigate how these variables affect the institutional pressures on EMA adoption. Despite those limitations, this research reveals a deeper understanding of management accounting's roles and contributions in the context of sustainable development.

REFERENCES

Abubakar, I. R., & Dano, U. L. (2020). Sustainable urban planning strategies for mitigating climate change in Saudi Arabia. *Environment, Development and Sustainability*, *22*(6), 5129–5152.

Asiaei, K., Bontis, N., Alizadeh, R., & Yaghoubi, M. (2022). Green intellectual capital and environmental management accounting: Natural resource orchestration in favor of environmental performance. *Business Strategy and the Environment*, *31*(1), 76–93.

Ax, C., & Greve, J. (2017). Adoption of management accounting innovations: Organizational culture compatibility and perceived outcomes. *Management Accounting Research*, *34*, 59–74.

Baah, C., Opoku-Agyeman, D., Acquah, I. S. K., Agyabeng-Mensah, Y., Afum, E., Faibil, D., & Abdoulaye, F. A. M. (2020). Examining the correlations between stakeholder pressures, green production practices, firm reputation, environmental and financial performance: Evidence from manufacturing SMEs. *Sustainable Production and Consumption*, *27*, 100–114.

Banerjee, S. B. (2002). Corporate environmentalism: The construct and its measurement. *Journal of Business Research*, *55*(3), 177–191.

Banerjee, S. B., Iyer, E. S., & Kashyap, R. K. (2003). Corporate Environmentalism: Antecedents and Influence of Industry Type. *Journal of Marketing*, *67*(2), 106–122.

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, *26*(3), 197–218.

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120.

Berrone, P., Fosfuri, A., Gelabert, L., & Gomez-Mejia, L. R. (2013). Necessity as the mother of "green" inventions: Institutional pressures and environmental innovations. *Strategic Management Journal*, *34*(8), 891–909.

Brammer, S., Hoejmose, S., & Marchant, K. (2012). Environmental Management in SMEs in the UK: Practices, Pressures and Perceived Benefits. *Business Strategy and the Environment*, *21*(7), 423–434.

Burnett, R. D., & Hansen, D. R. (2008). Ecoefficiency: Defining a role for environmental cost management. *Accounting, Organizations and Society*, *33*(6), 551–581.

Cepeda, G., Nitzl, C., & Roldán, J. L. (2017). Mediation analyses in partial least squares structural equation modeling: Guidelines and empirical examples. *Partial Least Squares Path Modeling: Basic Concepts, Methodological Issues and Applications*, *January*, 173–195.

Chan, H. K., Yee, R. W. Y., Dai, J., & Lim, M. K. (2016). The moderating effect of environmental dynamism on green product innovation and performance. *International Journal of Production Economics*, *181*, 384–391.

Chan, R. Y. K., He, H., Kai, H., & Wang, W. Y. C. (2012). Industrial Marketing Management Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Industrial Marketing Management*, *41*(4), 621–630.

Chan, R. Y. K., & Ma, K. H. Y. (2016). Environmental Orientation of Exporting SMEs from an Emerging Economy : Its Antecedents and Consequences. *Management International Review*, *56*(5), 597-632.

Chang, H.-C. (2007). Environmental Management Accounting and Environmental Accountability Within Universities: Current Practice and Future Potential. In *Environmental management accounting for cleaner production* (pp. 301-320). Dordrecht: Springer Netherlands. Chin, W. W. (1998). The partial least squares approach to structural equation modelling. In Marcoulides G. A. (Ed.). *Modern Methods for Business Research*, *295*(2), 295–336.

Christ, K. L., & Burritt, R. L. (2013). Environmental management accounting: The significance of contingent variables for adoption. *Journal of Cleaner Production*, *41*, 163–173.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. Routledge.

Colwell, S. R., & Joshi, A. W. (2011). Corporate Ecological Responsiveness: Antecedent Effects of Institutional Pressure and Top Management Commitment and Their Impact on Organizational Performance. *Business Strategy and the Environment, 22(2), 73-91.*

Cuerva, M. C., Triguero-Cano, Á., & Córcoles, D. (2014). Drivers of green and non-green innovation: Empirical evidence in Low-Tech SMEs. *Journal of Cleaner Production*, *68*, 104–113.

da Silva, T. R., de Azevedo, A. R. G., Cecchin, D., Marvila, M. T., Amran, M., Fediuk, R., Vatin, N., Karelina, M., Klyuev, S., & Szelag, M. (2021). Application of plastic wastes in construction materials: A review using the concept of life-cycle assessment in the context of recent research for future perspectives. *Materials*, *14*(13).

Darnall, N., & Edwards, D. (2006). Predicting the cost of environmental management system adoption: The role of capabilities, resources and ownership structure. *Strategic Management Journal*, *27*(4), 301–320.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2014). *Internet, phone, mail, and mixed-mode surveys:* The tailored design method. United Kingdome; John Wiley & Sons.

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational fields. *American Sociological Review*, *48*(2), 147–160.

Do, B., & Nguyen, N. (2020). The Links between Proactive Environmental Strategy , Competitive Advantages and Firm Performance : An Empirical Study in Vietnam. *Sustainability*, *12*(12), 4962.

Failler, P., Karani, P., & Seide, W. (2016). *Assessment of the Environment Pollution and its impact on Economic Cooperation and Integration Initiatives of the IGAD Region*, National Environment Pollution Report – Uganda.

Ferreira, A., Moulang, C., & Hendro, B. (2010). Environmental management accounting and innovation: An exploratory analysis. *Accounting, Auditing and Accountability Journal*, *23*(7), 920–948.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research This*, *18*(1), 39–50.

Gunarathne, A. D. N., Lee, K. H., & Hitigala Kaluarachchilage, P. K. (2021). Institutional pressures, environmental management strategy, and organizational performance: The role of environmental management accounting. *Business Strategy and the Environment*, *30*(2), 825–839.

Gunarathne, N., & Lee, K.-H. (2015). Environmental Management Accounting (EMA) for Environmental Management and Organizational Change: An Eco Control Approach. *Journal of Accounting & Organizational Change*, *11*(3), 362–383.

Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *European Business Review*, *26*(2), 106–121.

Hair, J., Hult, G. T., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* (2nd Edition). Sage publications.

Hall, R. (1993). A Framework Linking Intangible Resources and Capabilities to Sustainble Competitve Advantage. *Strategic Management Journal*, *14*(8), 607–618.

Hart, S. L. (1995). A natural-resource-based-view of the firm. *Academy of Management Review*, *20*(4), 986–1014.

Hart, S. L., & Dowell, G. (2011). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, *37*(5), 1464–1479.

Henri, J. F., Boiral, O., & Roy, M. J. (2014). The Tracking of Environmental Costs: Motivations and Impacts. *European Accounting Review*, *23*(4), 647–669.

Henri, J.-F., Boiral, O., & Roy, M.-J. (2016). Strategic cost management and performance: The case of environmental costs. *The British Accounting Review*, *48*, 269–282.

Henri, J.-F., & Journeault, M. (2010). Eco-control: The influence of management control systems on environmental and economic performance. *Accounting, Organizations and Society*, *35*(1), 63–80.

Hofmann, K. H., Theyel, G., & Wood, C. H. (2012). Identifying Firm Capabilities as Drivers of Environmental Management and Sustainability Practices - Evidence from Small and Medium-Sized Manufacturers. *Business Strategy and the Environment*, *21*(8), 530–545.

Huang, C.-C., Wang, Y.-M., Wu, T.-W., & Wang, P.-A. (2013). An Empirical Analysis of the Antecedents and Performance Consequences of Using the Moodle Platform. *International Journal of Information and Education Technology*, *3*(2), 217–221.

Jalaludin, D., Sulaiman, M., & Ahmad, N. N. N. (2011). Understanding environmental management accounting (EMA) adoption: A new institutional sociology perspective. *Social Responsibility Journal*, *7*(4), 540–557.

Jamil, C. Z. M., Mohamed, R., Muhammad, F., & Ali, A. (2015). Environmental Management Accounting Practices in Small Medium Manufacturing Firms. *Procedia - Social and Behavioral Sciences*, *172*, 619–626.

Jasch, C. (2006). Environmental management accounting (EMA) as the next step in the evolution of management accounting. *Journal of Cleaner Production*, *14*(14), 1190–1193.

Junquera, B., & Barba-Sánchez, V. (2018). Environmental Proactivity and Firms ' Performance : Mediation Effect of Competitive Advantages in Spanish Wineries. *Sustainability*, *10*(7), 2155.

Kang, Y., & He, X. (2018). Institutional Forces and Environmental Management Strategy: Moderating Effects of Environmental Orientation and Innovation Capability. *Management and Organization Review*, *14*(3), 577–605.

Kibe, L. (2021). The Role of Indigenous Knowledge in Attaining Kenya ' s Vision 2030 : A Literature Review. *A. Management*, *2*, 110–124.

Kline, R. B. (2011). *Principles and Practice of Structural Equation Modeling* (3rd edition). New York, NY: Guilford publications.

Kristandl, G., & Bontis, N. (2007). Constructing a definition for intangibles using the resource based view of the firm. *Management Decision*, *45*(9), 1510–1524.

Latan, H., Chiappetta Jabbour, C. J., Lopes de Sousa Jabbour, A. B., Wamba, S. F., & Shahbaz, M. (2018). Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: The role of environmental management accounting. *Journal of Cleaner Production*, *180*, 297–306.

Lee, K. H. (2009). Why and how to adopt green management into business organizations?: The case study of Korean SMEs in manufacturing industry. *Management Decision*, *47*(7), 1101–1121.

Leonidou, L. C., Leonidou, C. N., Fotiadis, T. A., & Zeriti, A. (2013). Resources and capabilities as drivers of hotel environmental marketing strategy : Implications for competitive advantage and performance. *Tourism Management*, *35*, 94–110.

Macharia, K. K., Gathiaka, J. K., & Ngui, D. (2022). Energy efficiency in the Kenyan manufacturing sector. *Energy Policy*, *161*(November), 112715.

Malmi, T., & Granlund, M. (2009). In search of management accounting theory. *European Accounting Review*, *18*(3), 597–620.

Martín-de Castro, G., Amores-Salvadó, J., & Navas-López, J. E. (2016). Environmental Management Systems and Firm Performance: Improving Firm Environmental Policy through Stakeholder Engagement. *Corporate Social Responsibility and Environmental Management*, *23*(4), 243–256.

Masocha, R., & Fatoki, O. (2018). The role of mimicry isomorphism in sustainable development operationalisation by SMEs in South Africa. *Sustainability*, *10(4)*, 1264..

Massoud, M. A., Fayad, R., El-Fadel, M., & Kamleh, R. (2010). Drivers, barriers and incentives to implementing environmental management systems in the food industry: A case of Lebanon. *Journal of Cleaner Production*, *18*(3), 200–209.

Mokhtar, N., Jusoh, R., & Zulkifli, N. (2016). Corporate characteristics and environmental management accounting (EMA) implementation: evidence from Malaysian public listed companies (PLCs). *Journal of Cleaner Production*, *136*, 111–122.

Oliver, C. (1997). Sustainble Competitive Advantage: Combining Institutional and Resource-Based Views. *Strategic Management Journal*, *18*(9), 697–713.

Osano, H. M. (2019). Global expansion of SMEs: role of global market strategy for Kenyan SMEs. *Journal of Innovation and Entrepreneurship*, *8*(1). 13

Pondeville, S., Swaen, V., & De Rongé, Y. (2013). Environmental management control systems: The role of contextual and strategic factors. *Management Accounting Research*, *24*(4), 317–332.

Porter, M. E., & Kramer, M. R. (2006). The link between competitive advantage and corporate social responsibility. *Harvard Business Review*, *84*(12), 78–92.

Porter, M. E., & Van Der Linde, C. (1995). Green and Competitive: Ending the Stalemate Harvard Business Review 73 Sept.

Qian, W., Burritt, R., & Chen, J. (2015). The potential for environmental management accounting development in China. *Journal of Accounting and Organizational Change*, *11*(3), 406–428.

Qian, W., Burritt, R., & Monroe, G. (2011). Environmental management accounting in local government: A case of waste management. *Accounting, Auditing and Accountability Journal*, *24*(1), 93–128.

Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations & Production Management*, *25*(9), 898–916.

Roxas, B., & Chadee, D. (2012). Environmental sustainability orientation and financial resources of small manufacturing firms in the Philippines. *Social Responsibility Journal*, 8(2), 208-226. Saeidi, S. P., & Othman, M. S. H. (2018). The moderating role of environmental management accounting between environmental innovation and firm financial performance. *International Journal of Business Performance Management*, *19*(3), 326.

Salim, K. M. A., Mohd Amir, A., & Sulaiman, M. (2018). Material Flow Cost Accounting, Perceived Ecological Environmental Uncertainty, Supplier Integration and Business Performance: A Study of Manufacturing Sector in Malaysia. *Asian Journal of Accounting and Governance* , 8(Special Issue), 107-121.

Salvado, J. A., Castro, G. M. de, Lopez, J. E. N., & Verde, M. D. (2012). *Environmental innovation and firm performance: A natural resource-based view*. Palgrave Macmillan.

Schaltegger, S., Bennett, M., Burritt, R. L., & Jasch, C. (2008). Environmental management accounting for cleaner production.

Scott, W. R. (2005). Institutional theory: contributing to a theoretical research program. *Great Minds in Management: The Process of Theory Development*, *37*(2), 460–485.

Severo, E. A., Guimarães, J. C. F. de, & Dorion, E. C. H. (2017). Cleaner production and environmental management as sustainable product innovation antecedents: A survey in Brazilian industries. *Journal of Cleaner Production*, *142*(September), 87–97.

Staniskis, J. K., & Stasiskiene, Z. (2006). Environmental management accounting in Lithuania: exploratory study of current practices, opportunities and strategic intents. *Journal of Cleaner Production*, *14*(14), 1252–1261.

Surroca, J., Tribo, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal*, *31*(5), 463–490.

Testa, F., Boiral, O., & Iraldo, F. (2018). Internalization of environmental practices and institutional complexity: Can stakeholders pressures encourage greenwashing? *Journal of Business Ethics*, *147*(2), 287–307.

Wang, S., Li, J., & Zhao, D. (2017). Institutional Pressures and Environmental Management Practices: The Moderating Effects of Environmental Commitment and Resource Availability. *Business Strategy and the Environment*, *27*(1), 52–69.

Wang, S., Wang, H., & Wang, J. (2019). Exploring the effects of institutional pressures on the implementation of environmental management accounting: Do top management support and perceived benefit work? *Business Strategy and the Environment*, *28*(1), 233–243.

Wijethilake, C. (2017). Proactive sustainability strategy and corporate sustainability performance: The mediating effect of sustainability control systems. *Journal of Environmental Management*, *196*(July), 569–582.

Wijethilake, C., Munir, R., & Appuhami, R. (2017). Strategic responses to institutional pressures for sustainability: The role of management control systems. *Accounting, Auditing and Accountability Journal*, *30*(8), 1677–1710.

Yang, D., Wang, A. X., Zhou, K. Z., & Jiang, W. (2019). Environmental Strategy, Institutional Force, and Innovation Capability: A Managerial Cognition Perspective. *Journal of Business Ethics*, *159*(4), 1147–1161.

Ylinen, M., & Gullkvist, B. (2014). The effects of organic and mechanistic control in exploratory and exploitative innovations. *Management Accounting Research*, *25*(1), 93–112.