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Managerial Attitude Towards the Natural Environment and Environmental Sustainability Expenditure

Samuel Adomako^{1,3}, **Joseph Amankwah-Amoah²**

¹ School of Management, University of Bradford, Bradford, United Kingdom Email: S.Adomako@bradford.ac.uk

² Kent Business School, University of Kent, UK. Email: J.Amankwah-Amoah@kent.ac.uk

Abstract

Drawing on environmental sustainability and indigenous conservationism literature, we examine the influence of chief executive officers' (CEOs) beliefs on firms' sustainability expenditure through the mediating mechanism of managerial attitudes towards the natural environment. Using data collected from 494 small and medium-sized enterprises in a developing country, we found that superstition positively affects managerial attitudes towards the natural environment and this relationship is moderated by gender, such that the relationship is amplified for female chief executive officers (CEOs). In addition, the results suggest that the effect of superstition on sustainability expenditure is mediated by managerial attitudes towards the natural environment. The implications for sustainability literature and practices are discussed.

Key words: Africa; Ghana; environmental sustainability; superstition; managerial attitudes.

1. Introduction

Many scholars and practitioners have explored avenues to better accelerate the shift towards a “green economy” and halting environmental degradation (Bergius et al., 2020). Policymakers and stakeholder groups continue to impose pressure on businesses to pay attention to social and environmental practices (Amankwah-Amoah, 2020; Boso et al., 2017; Leonidou, Christodoulides & Thwaites, 2016). For example, consumer demand for more transparency, and strict regulations have influenced businesses to consider sustainability as a competitive priority. These pressures have prompted many businesses to balance their economic goals strategically with their societal and environmental goals. Accordingly, businesses are increasingly using sustainability matrices to demonstrate their concern for the environment (Brown, Dacin, Pratt & Whetten, 2006).

Apart from these pressures, chief executive officers (CEOs) also tend to have greater influence on firm strategy, resource deployment and behaviours which can have direct and indirect impact on sustainability. Thus, the success of a firm's sustainability strategy and initiative is impacted by the support of executive leadership in those firms (Huang, 2013; Lewis, Walls & Dowell, 2014). For example, executives tend to see environmental issues as opportunities or threats when the firm's strategic leaders legitimize environmentally significant behaviours by institutionalizing them within the firm's identity (Afshar, Jahanshahi, Brem &

Bhattacharjee, 2017; Sharma, 2000). Executives are often guarded by their traditional beliefs and values which drive the organization's behaviour (Tsang, 2004b) such that new research may provide information to supplement theory on drivers or barriers to sustainability in the literature.

However, despite the significant impact CEOs bestow on sustainability practices of firms, we still do not know enough about whether managers' superstitious beliefs could influence the firm's sustainability activities. Although superstition is rooted in cultural traditions and has often been the central pillar of environmental sustainability (Mawere & Awuah-Nyamekye, 2015), there remains limited understanding of how superstition influences environmental sustainability expenditure. Moreover, whilst it is widely recognised that superstition endures in society (Tsang, 2004a; Wang, Hernandez, Minor & Wei, 2012; Ya'akov, Ruffle & Shtudiner, 2018) and that superstition predicts attitudes (Chen, 2018 Tsang, 2004b), to date we know little about how these constructs work in concert with one another to influence sustainability expenditure of firms. This issue is particularly important given that superstition is inextricably interwoven with environmental protection (Mawere & Awuah-Nyamekye), and superstition and attitudes are pivotal features of many societies in developing countries (see Tsang, 2004). Thus, the purpose of this paper is to examine the mediating mechanism of the relationship between superstition and sustainability expenditure and proposes gender as a moderating variable on this relationship.

The present study contributes to a more nuanced understanding of how superstition influences a firm's sustainability expenditure. First, building on superstition literature (Gallup & Newport, 1991; Hernandez, Wang, Minor & Liu, 2008; Mowen & Carlson, 2003), we examine the direct impact of CEOs' superstition on their attitudes towards the natural environment. In addition, we examine the indirect influence of CEOs' superstition on environmental sustainability expenditure. This enquiry is critical because despite the growing

research into environmental sustainability (Adedoyin et al., 2020; Adomako et al., 2019; Asongu, Agboola, Alola & Bekun, 2020; Helfaya & Whittington, 2019), scholarly effort to investigate how executives' superstition influence a firm's sustainability expenditure lacks theoretical precision. We argue that when CEOs' enduring cultural beliefs (religion, morals and superstition) are greater, they are more likely to develop a positive attitude towards the natural environment. The attitudes towards the natural environment, in turn, are more likely to translate into greater sustainability expenditure.

Second, several scholars have called for additional research efforts to be dedicated to understanding the ways in which superstition of CEOs impact their firms' sustainability expenditure (Appiah-Opoku, 2007; Mawere & Awuah-Nyamekye, 2015). For example, given the limited progress in transitioning to efficient sources of energy, minimizing waste, reducing global degradation activities, and protecting the natural environment, there have been increasing calls to turn to local traditions and norms to motivate and incentivize organizational leaders, communities and businesses to embrace and spearhead contemporary sustainability efforts (see Appiah-Opoku, 2007; Mawere & Awuah-Nyamekye, 2015). Previous research has not examined the underlying mechanisms through which CEOs' superstition influences sustainability expenditure of firms. The current study sought to obtain evidence on this question from a developing nation to investigate the potential mediating role of attitudes towards the natural environment in this nexus.

Third, beyond examining the theoretical relationship between CEOs' superstition and firms' sustainability expenditure, we examine the boundary conditions under which this relationship is more effective or optimal by introducing gender as a moderating variable. This is an important enquiry because extant research shows that women are more superstitious than men (Gallup & Newport, 1991; Mowen & Carlson, 2003). For example, superstition, which is often considered as irrational, requires moderation to cope with uncertainty and ambiguity

(Hernandez, Wang, Minor & Liu, 2008). Thus, we derive insights from the social role theory (e.g., Eagly, 1987; Eagly, Wood & Diekmann, 2000) to examine how gender can help explain variations in the effect of CEOs' superstition on their attitudes towards the natural environment. Our contention is that individuals behave in ways that conform to the societal norms of the gender role, as such the positive effect of superstition on managerial attitudes towards the natural environment will be more positive for female-led firms.

The paper proceeds in the following manner. In the next section, the theoretical models and hypotheses are examined accompanied by the analysis of the research methods and data collection procedures. Following this, we outline the findings, limitations and directions for future research.

2. Related literature

In the last two decades, a substantial amount of research attention has been devoted to environmental sustainability issues. Particularly, the renewed attention reflects the importance of superstition (Peng, Ahlstrom, Carraher & Shi, 2017) and national institutions (Roxas & Coetzer, 2012). Arguably, extant research indicates that strategically pursuing an environmental sustainability agenda in resource-constrained settings such as those found in emerging markets yields positive outcomes for firms (Adedoyin et al., 2020; Danso et al., 2019a, 2019b). This line of inquiry is rooted in the institution-based view (Peng, 2017; North, 1990; Nyame-Asiamah et al., 2020) which offers a potentially useful mechanism for expanding our understanding of how superstitions which are rooted in cultural traditions influence firm outcomes. The institutional environment comprises formal and informal institutions (North, 1990). Formal institutions reflect regulations, laws and rules enacted by the state while informal institutions are the norms, cultures, and ethics (Meyer, Estrin, Bhaumik & Peng, 2009; North, 1990; Peng, 2017; Peng et al., 2017). While previous research has examined the effect of formal

institutions in driving sustainability and social performance (Adomako, Obeng, Opoku & Danso, 2016; Roxas & Coetzer, 2012), our understanding relating to how informal institutions such as culture and superstition shape sustainability of small firms is not well developed.

The *Webster's New World College Dictionary* defines superstition as: "...any belief, based on fear or ignorance, that is inconsistent with the known laws of science or with what is generally considered in the particular society as true and rational, such as beliefs in charms, omens, the supernatural, etc.". This definition suggests that superstition is an irrational belief in objects, actions or circumstances which is not logically connected to a course of action that influences its outcome. These irrational beliefs remain a pivotal dimension of culture (Park et al., 2007) and there is a link between religious spirituality and the wider social embrace of care for the environment (Kinsley, 1995). Traditional rituals, beliefs and magical practices are also key aspects of superstitions (Ya'akov et al., 2018).

Indigenous conservationism is often attributed to "spiritual respect for, and a practical understanding of, the natural world" and is manifest in forms such as "animistic religious beliefs conceptualizing other species as social beings, and the relatively higher richness of biodiversity" (Negi, 2010, pp. 259–266). As Wahab, Odunsi and Ajiboye (2012) observed, cultural differences exist across societies with different meanings attached to events and rituals, and these become more apparent when two or more cultures are juxtaposed. In many societies the ability to develop and flourish is predicated on "how knowledge is generated and disseminated", as demonstrated in areas of conservation where indigenous knowledge systems are central in advancing societal goals (Awuah-Nyamekye, 2014, p. 47). By accumulating knowledge about people and their environment, society becomes well positioned to advance environmental protection (Kimmerer, 2002). Indeed, many individuals and organizations have turned to harnessing culture for combating the climate agenda. Indeed, extant research into cultural beliefs and sustainability offers two schools of thought. First, research suggests that

cultural beliefs are rooted in social norms and attitudes (see Hernandez, Wang, Minor & Liu, 2008) and can be harnessed to combat climate change effectively. This view emphasises the importance of traditions and norms in locking in behaviours and mobilizing communities to engage in this important issue. Accordingly, compliance and non-compliance with environmental demands can be attributed to the responsibilities and role of "individuals" (Petts, Herd, Gerrard & Horne, 1999). Individuals often have latitude in deciding whether to adhere to local customs and guidelines, and society also has a responsibility to sanction those who fail to abide by their principles.

Second, cultural norms are often unenforceable in the legal channels and therefore require legally binding targets and measures to combat climate change. This is important given that companies and individuals can simply deviate from non-legally binding measures to the detriment of wider communities and society. A major conclusion is that sustainability requires a multi-pronged approach that mobilizes a plethora of measures including culture, legal systems, activists, and other stakeholder pressures to help usher in essential reforms for society.

2.1 Conceptual model and hypotheses

In this study, we argue that superstition can influence their attitudes towards the natural environment. Superstitious individuals tend to alleviate their anxiety and discomfort associated with uncertainty. In this way, they are more likely to develop a positive attitude towards the natural environment. The development of positive environmental attitudes stems from their local traditions, norms and aspects of history which are potentially fruitful avenues to help instil and enlighten the culture of environmental stewardship as a potent mechanism for mitigating some of the effects of climate change (Appiah-Opoku, 2007). We also argue that attitudes towards the natural environment mediate the relationship between superstition and sustainability expenditure because superstition may be too distant from firm outcomes.

Therefore, a linking attitudinal mechanism is required through which superstition may lead to sustainability expenditure. In addition, we contend that the effect of superstition on managerial attitude towards the natural environment may depend on gender, as females have been found to be more superstitious than their male counterparts.

2.2 Superstition and managerial attitudes

There has been a renewed interest in local traditions and preservation of the natural environment via local customs. We build on previous studies (Roxas & Coetzer, 2012; Schultz et al., 2004) on attitudes towards the natural environment. Managerial attitudes towards the natural environment reflect “the collection of beliefs... and behavioural intentions a business owner-manager holds regarding environmentally related activities or issues” (Roxas, & Coetzer, 2012, p. 463). As Negi (2010, pp. 259–266) observed, “in traditional societies, sustainable natural resource management is driven by the beliefs and behaviours of human communities, and local cultures are strengthened by their intimate connections to the natural environment that sustains them”, whereas today’s societies are increasingly shaped by new scientific knowledge.

One effective mechanism through which the effects of culture are manifest is via symbols as a means of impacting past knowledge and norms. Historically, in Ghana, for instance, ancestors, local chiefs and leaders were aware of the importance of protecting local rivers and forests and mitigating the spread of diseases. In Ghana’s Ashanti tradition, “*There is a general belief that divinities and spirits or lesser gods were created by the Supreme Being to perform certain functions on Earth ... the exploitation of these resources is approached with caution in the day-to-day activities*” (Appiah-Opoku & Mulamootil, 1997, p. 165). From its inception, waste management has also remained an area where erosion of national and tribal cultures has paved the way for activities such as unsuitable disposal of waste, indiscriminate burning of waste and discharge of liquid waste into local rivers. Some rivers are regarded as living beings and

individuals were forbidden from discharging dirty waste into them. Another argument for embracing cultural norms as a vehicle for combating climate change in the Ghanaian context is observed by one commentator below: “In the past, the deep forests were also regarded as a place ... of the gods and the dead ancestors. Such places were highly revered and worshiped” (Acheampong, 2010, p. nd). In this regard, some areas of local rivers are often demarcated for bathing and animals. Superstition encompassed often irrational norms and belief in bad and good-luck items (Hernandez, Wang, Minor & Liu, 2008). Accordingly, we hypothesise that:

H1: *Superstition will be positively related to positive attitudes towards the natural environment.*

The foregoing discussion on the relationship between superstition, managerial attitudes towards the natural environment and sustainability expenditure indicates that superstition influences the development of attitudes towards the natural environment which together influence sustainability expenditure. Building on this, we argue that the demonstration of positive environmental attitudes stems from irrational belief that the environment represents an important symbol or idol in society. This belief is strongly tied to cultures and the source of many superstitions (Vyse, 1997). Harnessing cultural and historical beliefs can be an effective mechanism for advocating environmental sustainability. Therefore, arguments about the destruction of the locality have an intuitive appeal to many cultures and thereby help to shepherd in the wider embrace of environmental sustainability. For example, in Ghana, local rivers, which are considered gods, have been depleted due to environmental degradation and deforestation. Perhaps the most interesting feature in Ghanaian culture is illustrated by the following quote: “*People feared the gods and hence adhered strictly to these directives and preserved the water bodies better than what pertains in contemporary Ghana.*” (Acheampong, 2010, p. nd). Thus, we argue that in the literature on sustainability, superstition is a critical precursor of environmental attitudes that eventually leads to sustainability expenditure of firms.

Managerial attitudes towards the natural environment provides the mechanism for small businesses to exploit their CEOs' superstition in improving their sustainability practices. Therefore, we argue that:

H2: *Positive attitudes towards the natural environment mediate the relationship between superstition and sustainability expenditure.*

In addition to the foregoing discussion, we also proposed that the positive influence of superstition on managerial attitudes towards the natural environment is moderated by gender. Anchored in the social role theory (Eagly, 1987; Eagly & Wood, 2016) is the suggestion that individual behaviors are shaped by societal norms and expectations of gender role (Kacmar, Bachrach, Harris & Zivnuska, 2011). In general, females' attitudes towards the natural environment often emanate from social perception and power within society, with women at times being communal in their approaches whilst males are believed to be agentic (Şahin, Gürbüz & Şeşen, 2017). These cultural and social norms can engender gender-stereotypical behaviour leading to different expectations of and decisions by male and female executives (Eagly, 1987). The consensus in the superstition literature is that females are more superstitious than males (Gallup & Newport, 1991; Mowen & Carlson, 2003). Thus, females and their male counterparts differ in their superstitious orientations and attitudes towards the natural environment. Given that societies in many developing countries tend to marginalize women based often on superstition and cultural traditions, it is very likely that female CEOs might possess residuals of superstition which could be manifest in the way they manage their organizations' sustainability strategy. Thus, we argue that:

H3: *The positive relationship between superstition and attitude towards the natural environment is moderated by gender, such that the relationship is stronger for female CEOs than male CEOs.*

3. Research method

3.1 Study setting

From the mid-twentieth century, when Ghana, like most African nations, gained independence, there has been policy alignment towards development which in many instances hampered environmental efforts. When Ghana gained independence, it started to enact policies to modernize industries and embrace new technology, all underpinned by government participation. Ghana, like many nations in Africa, is well endowed with natural resources such as gold, copper, and timber (Mensah, 2018).

Ghana is a member of the Economic Community of West African States (ECOWAS) and is widely regarded as a liberalizing and growing economy in Africa with long-standing aspiration since the 1990s to become “the gateway to West Africa” as a hub for foreign direct investments and businesses into Africa (Ghanaweb, 2019). From the late 1990s, slow economic growth and globalization with minimal benefits led to deforestation, pollution of local rivers and increasing waste with little recycling. These culminated in the rapid destruction of some of the natural environment. In the waning days of colonial rule in the 1950s, the nation started to move towards a greater degree of freedom for citizens (Amankwah-Amoah & Debrah, 2010). During the 1970s, the dominance of authoritarian regimes left little room for individuals to be less accepting of authority. However, it became difficult to maintain the traditional pillars that allowed those traditions to stand the test of time. Locality by locality, national culture may determine not only the rules but also the business climate.

Until recent decades, Ghana’s natural environment was well protected by local traditions. The erosion of national and local culture and traditions is prevalent, often precipitated by the forces of globalization that often compel individuals to discard their culture in favour of “global norms”. The erosion of traditions and associated fears, coupled with globalization, have provided a potent force leading to greater environmental degradation. With the dawn of

globalization, the historical “beliefs, taboos, customs and traditions have been relegated to the background and are regarded by many as fetishes and useless, though they played a key role in environmental protection” (Acheampong, 2010, p. nd). Within the last decade, despite the widespread acceptance of the importance of tree planting as a means of replacing dying trees, many logging companies have operated with little regard for local concerns and often “fell trees at will”. Although in the early 1990s many communities and environmental groups voiced concerns about the destruction of forests, pollution of local rivers and wider environmental degradation, little emerged from the policy arena to alter the course of action and behaviours of businessmen who put money ahead of protecting the natural environment. Accordingly, there is a need to utilize community leaders as change champions to serve as advocates in bringing to the fore the benefits of environmental sustainability.

3.2 Sample and data

The sampling frame for the study was derived from the Association of Ghana Industries (AGI). The sample met the following criteria to select 960 firms: (1) manufacturers of physical products; (2) firms that were not part of any company group; and (3) for-profit firms employing a maximum of 250 full-time employees as of January 1, 2019. Data were collected in two waves. In wave 1, chief executive officers (CEOs)/founders were approached with a questionnaire delivered in person to capture superstition, gender and attitudes towards the natural environment. After several visits to the head offices of the companies, 519 complete responses were obtained. Second, to attenuate for potential common method bias (Podsakoff et al., 2003), the finance managers/chief accountants of the 519 firms were approached to capture sustainability expenditure of the firms. It was detected that 13 of the firms had no finance managers or the CEOs were also the finance managers. A total of 506 responses were obtained in wave 2. Out of this, 12 of the responses were treated as missing values. Thus, 494 matched responses from waves 1 and 2 were used for this analysis (51.46%). We obtained a

high response rate due to the face-to-face survey administration procedure used in this study (see Boso, Story, & Cadogan, 2013). On average, the firms employed 37 full-time staff and the average age of the firms was 14 years.

3.3 Measure of constructs

All the multi-time constructs were taken from previous validated studies and measured on a 7-point scale ranging from 1 = strongly disagree to 7 = strongly agree.

Superstitious beliefs. We use five items to measure superstition based on the literature (Hernandez et al., 2008; Jahoda, 1969; Mowen & Carlson, 2003). These items capture the superstition of the CEO. The overall mean value of the five items constitutes the superstition construct.

Attitudes towards the natural environment. The items measuring this construct were taken from Dibrell and Crain (2006) and have been validated in other studies (e.g., Dibrell, Craig & Hansen, 2011; Roxas & Coetzer, 2012). Overall, the five items capture the proclivity of the CEO to allocate firm resources to the business endeavours and natural environmental initiatives to protect the natural environment (Roxas & Coetzer, 2012). A higher mean score represents a strong positive attitude towards the natural environment.

Gender. This variable was measured with a dummy variable coded as 0 = female and 1 = male.

Sustainability expenditure. To measure a firm's sustainability expenditure, the approach suggested in previous studies was used (Boso et al., 2017; Julian & Ofori-Dankwa, 2013). Specifically, finance managers or chief accountants of the sampled firms were asked to record the: (1) percentage of total income their firms spent on sustainability activities annually; (2) percentage of total annual profit spent on sustainability activities; and (3) percentage of return-on-investment (ROI) spent on sustainability activities. The mean value of the three items constitutes the sustainability expenditure construct.

Control variables. This paper controlled firm age, size, financial resource slack, financial performance, and CEO education because these variables can potentially influence the dependent variable. Firm age was measured as the number of years since the firm's incorporation while size was measured using the number of full-time employees. Financial resource slack was measured by following Voss, Sirdeshmukh and Voss (2008) and used the firms' cash reserves at the end of the 2019 financial year to measure financial slack. These figures were obtained from the finance managers. Financial performance was controlled for, by using the following indicators: return on assets, growth in profitability and return on investment for the financial year 2019. Finally, we controlled founder/CEO age and education (1 = high school, 2 = Higher National Diploma, 3 = bachelor's degree, 4 = master's degree and 5 = doctoral degree).

3.4 Potential bias, validity, and reliability

Non-response bias was assessed by splitting the data in two: early respondents and late respondents (Armstrong & Overton 1977; Rogelberg & Stanton 2007). A comparison of the two groups in terms of firm age, size and financial performance found no substantial differences. Thus, non-response bias has no substantial influence on the study's findings.

Several ex-ante procedures were used to minimize the effect of common method variance (CMV) including collecting data from multiple respondents. In addition, ex-post statistical estimation (Podsakoff et al., 2003) was used to ensure that CMV did not influence the results of this study. First, the Harman's one-factor test was performed (Podsakoff et al., 2003) using the principal component analysis. Based on the prescriptions of this approach, CMV is indicated if a single factor emerges from the factor analysis or the first factor accounts for most of the variance. The unrotated factor results revealed three factors, with the first factor

accounting for 22.89% of the total variance, which was less than the suggested threshold value of 50% (Podsakoff et al., 2003).

Second, potential common method bias in the data was assessed using the approach suggested by Lindell and Whitney (2001) and included “Our employees are highly skilled”, an item that measures human capital as a market variable. This variable was chosen because it has no theoretical link with the dependent variable. In this study, human capital and sustainability expenditure had a non-significant correlation of .01. Thus, issues related to common method bias were substantially alleviated.

To establish validity and reliability of the constructs, we performed confirmatory factor analysis using LISREL 8.71. The item loadings were in their hypothesised direction and were larger than the recommended threshold value of 0.40 and significant at $p < .001$ (Appendix 1), suggesting convergent validity of the scales (e.g., Anderson & Gerbing, 1988). The results also revealed acceptable degrees of Cronbach’s alpha reliability, composite reliability, and discriminant validity of the measures (Bagozzi & Yi, 2012). The average variance extracted (AVE) of each construct was inspected and found that each AVE exceeded .50 and was greater than the squared correlation between each pair of constructs (see Bagozzi & Yi, 2012).

The traditional chi-square (χ^2) and other fit indices were used to examine the overall model fit. Several models were experimented with, including three factors (three variables) to one factor (three variables combined into one variable). Table 1 presents the fit indices for the overall model. The indices reported in Table 1 indicates that the full three-factor model performed better than other models such as the one factor model.

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4. Estimation and results

Table 2 presents the descriptive statistics and correlations of the variables used in this study. The variables involved in the interactions were standardised before their inclusion in the main regression to prevent multicollinearity (Aiken & West, 1991). The largest variance inflation factor (VIF) value was 3.56, which is way below the suggested cut-off value of 10 (Neter et al., 1996). Thus, we concluded that multicollinearity is not a major concern in our data. In addition, potential problems of normality and outliers were inspected, and no significant violations of these assumptions were found. Thus, the data were suitable for regression analysis.

We utilized the hierarchical regression estimation technique to test our hypotheses. We present the results of the regression in Table 3. The dependent variable in Models 1–4 is managerial attitudes towards the natural environment. In Model 1, we included all the control variables. The results show that firm size positively relates to managerial attitudes ($\beta = .16, p < .01$) while firm age negatively influences managerial attitudes towards the environment ($\beta = -.14, p < .05$). Model 2 added superstition and it has a significant effect on managerial attitudes ($\beta = .20, p < .01$). The results in Model 2 provide support for Hypothesis 1. We then added gender in Model 3. The results suggest that the influence of superstition on managerial attitudes is still significant ($\beta = .20, p < .01$). Model 4 added the interaction terms between superstition and gender. The interaction term is negative and significant ($\beta = -.43, p < .01$). The negative coefficient of the interaction term suggests that the relationship between superstition and managerial attitudes towards the environment is stronger for female CEOs than for male CEOs. This result provides support for Hypothesis 3. To explain the nature of the significant

interaction effect of superstition on managerial attitudes, we plotted a graph that indicates female and male CEOs (Aiken & West, 1991). As shown in Figure 1, the effect of superstition on managerial attitudes is more pronounced in female CEOs than male CEOs.

In Models 5–8, the dependent variable is sustainability expenditure. The results in Models 5–8 test the mediating Hypothesis (H2). To test the mediating hypothesis, we use the classic Baron and Kenny’s (1986) approach. According to this method, mediation is established when three major conditions are met: (1) the independent variable significantly predicts the dependent variable; (2) the independent variable significantly influences the mediation variable; and (3) the simultaneous inclusion of the independent and the mediating variables in the regression equation allows the mediating variable to account for a significant variation in the dependent variable and that the influence of the independent variable on the dependent variable is reduced or eliminated. This method has been used in recent studies to establish mediation (An et al., 2018; Zhao, Lynch and Chen, 2010).

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Insert Table 3 about here
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First, in Model 6 the independent variable (superstition) positively relates to the dependent variable (sustainability expenditure) ($\beta = .29, p < .01$). Second, the results in Model 2 show that the relationship between superstition and managerial attitudes (mediator) was positively related ($\beta = .20, p < .01$). Third, in Model 8 the effect of the independent variable on the dependent becomes insignificant ($\beta = .02, ns$) when the independent variable and the mediating variable are simultaneously included in the regression equation. These results suggest that

managerial attitudes mediate superstition and sustainability expenditure relationships. Thus, H2 received support.

To establish robustness of our findings, we performed a PROCESS analysis (see Hayes, 2013). This approach allowed us to establish the mediation effect when the moderating variable (gender) is added. Table 4 presents the conditional indirect effect of managerial attitudes towards the environment at different values of gender. The results suggest that the mediation effect is significant at all values of the moderator. When gender is high, the bootstrapped confidence interval around the indirect effect contains non-zero values [.11–.31]. In addition, when gender is low, the bootstrapped confidence interval around the indirect effect contained no zero [.01–.25]. This result provides support for Hypothesis 2, which argues that managerial attitude towards the natural environment mediates the relationship between superstition and sustainability expenditure.

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5. Discussion and conclusion

Despite substantial interest in environmental sustainability from both researchers and policymakers, insights relating to how executives' superstition drive a firm's sustainability expenditure are far from complete in the sustainability literature. To advance the current frontiers of scholarly knowledge, we build on the literature related to cultural orientation and sustainability to explore how executives' superstition influences sustainability expenditure through the mediating mechanism of managerial attitudes towards the natural environment. Based on a sample of 494 small and medium-sized enterprises in a developing country, we found that superstition positively relates to managerial attitudes towards the natural

environment. This finding shows the importance of the previous unexamined role of executives' superstition in driving their attitudes towards the natural environment. In addition, we also found that managerial attitudes mediate the relationship between superstition and sustainability expenditure highlighting the mechanism through which superstition influences sustainability expenditure. Moreover, the role of gender in the relationship between superstition and managerial attitudes was tested in our final hypothesis as a moderator. The results suggest that gender moderates the relationship between superstition and managerial attitudes such that the relationship is more significant for firms led by female CEOs.

The findings offer several important theoretical implications. First, the findings extend our current understanding of the role played by superstition in facilitating managerial attitudes. Specifically, we build on prior studies (Adomako et al., 2019; Helfaya & Whittington, 2019; Gupta & Gupta, 2020) to offer a nuanced understanding of the relationship between cultural beliefs/superstition and managerial attitudes. The literature on superstition has often been linked to customer information processes and behaviour (Gallup & Newport, 1991; Hernandez, Wang, Minor & Liu, 2008; Jahoda, 1969; Mowen & Carlson, 2003). By integrating recent studies in superstition (Hirshleifer, Jian & Zhang, 2018; Mowen & Carlson, 2003; Ya'akov et al., 2018), the study provided insights on whether cultural or religious connections derived from superstition are an important source of managerial attitudes. Contrary to the previous studies, the current study complements extant superstition research by proposing that superstition could drive managerial attitudes towards the natural environment. This is because managerial attitudes could be derived from superstition and these beliefs facilitate attitudes towards the natural environment. By this extension, we provide a more comprehensive understanding of superstition and how it influences managerial attitudes.

In addition, although culture underpins societal norms and often advocates for the protection of nature, we know little on how cultural characteristics may foster environmental

sustainability. By emphasizing and examining CEOs' superstition and attitudes towards the natural environment, our study advances the literature on environmental sustainability. Thus, this paper adds to the current knowledge by incorporating cultural traditions to better understand how sustainable practices could be fostered in small firms in a developing country. We also extend our understanding of the boundary conditions of the influence of superstition. Though the influence of superstition has been previously examined, especially in the consumer behaviour literature (Hernandez, Wang, Minor & Liu, 2008; Jahoda, 1969), we still do not have sufficient knowledge on the conditions under which superstition is effective in driving managerial attitudes. Particularly, the finding from hypothesis 3 indicates that gender is such a boundary condition.

Beyond the theoretical implications, this study has some practical implications. First, the findings suggest that CEOs' superstition plays a critical role in a firm's sustainability expenditure. Thus, in seeking to contribute to the discourse on climate change, managers are advised to recognise the role played by top executives' superstition. Thus, apart from protecting the natural environment through the legal system, managers can also harness cultural orientation and superstition of CEOs. Second, the results suggest that gender moderates the relationship between superstition and managerial attitudes towards the environment. Specifically, superstition is more positively related to managerial attitudes for female-led firms. Thus, in tackling environmental issues and ushering in a new era of environmental sustainability, managers are encouraged to pay substantial attention to female managers who can be considered sustainability champions in organizations. Third, sustained climate awareness and education campaigns are needed to impact knowledge and mobilize individuals to protect their local environment. All-encompassing actions including tapping into local traditions and culture to help get individuals on board in championing the climate-change agenda appears to be an effective mechanism. It is suggested that culture and traditions can be

harnessed to champion the wider climate-change agenda and incentivize individuals to act. Organizations can be compelled to focus on sustainability and realign their strategy to pressing environmental demands. Government policy could be redirected towards igniting and instilling environmental sustainability orientations in firms and organizational leaders.

6. Limitations and directions for future research

Despite the theoretical and practical implications outlined in this study, the current study has some limitations. First, the use of Ghana as a study setting limits the generalizability of findings. Given that Ghana has multiple cultural traditions and superstitions, the interpretation of the findings doesn't necessarily reflect all the numerous ethnic groups and cultural traditions in Ghana. Future research should have a more robust within-country and cross-country design to address the issue. Second, although we collected data in two waves, we cannot make causal claims with confidence. Future research should therefore use a longitudinal research design. Third, we could not measure national culture to include this in our research model. Future studies should answer the question concerned with the role of governments in developing and nourishing a culture of sustainability in society without overextending the hands and influence of government. In suggesting that local culture can be ignited to deliver sustainability, our study takes a step forward in reinforcing the need for a wider array of policy options in delivering environmental justice.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author, [author initials], upon reasonable request.

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Appendix 1. Constructs, measurement items and reliability and validity tests

Item description	Loadings (t-values)
Superstitious beliefs: $\alpha = .90$; CR = .91; AVE = .70	
Cutting trees attracts bad luck	.78(1.00)
Going to fishing in rivers/seas on Tuesday brings bad luck	.85 (15.11)
Polluting rivers and seas can bring bad luck	.87 (16.21)
Rivers are gods that must be protected	.90(21.11)
Starting bush fires can be considered bad omen	.89(20.37)
Attitudes towards the natural environment: $\alpha = .95$; CR = .96; AVE = .83	
Businesses need to spend more resources on environmental protection	.89(1.00)
Resources should not be devoted to environmental protection because a firm's profitability will be harmed (r)	.75 (11.28)
In the future environmental protection should be seen as part of a firm's 'bottom line'	.90 (18.16)
Business leaders ought to be leading environmental protection efforts	.81 (14.18)
We must protect the environment even if it means that jobs in our community will be lost	.77 (12.09)
Sustainability expenditure: $\alpha = .86$; CR = .88; AVE = .78	
% of total income spent on environmental sustainability activities annually	.88(1.00)
% of total annual profit spent on environmental sustainability activities	.94 (25.13)
% of return-on-investment (ROI) spent on environmental sustainability activities	.95 (26.25)

r =reverse coded

Table 1. Results of confirmatory factor analysis

	χ^2/df	CFI	NNFI	RMSEA	SRMR
Recommended values	≤ 3	$\geq .90$	$\geq .90$	$\leq .08$	$\leq .08$
Full model CFA	1.39	.96	.97	.06	.07
One-factor model CFA	2.19	.68	.63	.10	.12

Note: CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean square error of approximation; and SRMR = standard root mean-square residual

Table 2: Descriptive statistics and correlations

	Variables	Mean	S.D.	1	2	3	4	5	6	7	8
1.	Firm size (employees)	37.42	21.82								
2.	Firm age (years)	14.24	7.28	-.09							
3.	Gender	.49	.50	-.04	.00						
4.	Financial resource slack ^a	16.94	43.21	.23**	-.12	.01					
5	Education	3.28	1.03	.04	.00	.09	.03				
6.	Financial performance	4.29	0.99	-.11	-.18**	-.03	.33**	.06			
7.	Superstition	3.67	0.56	-.08	.00	.11	.00	-.14*	-.06		
8.	Managerial attitudes	4.74	0.51	.20**	-.19**	.08	.21**	.06	.15**	.28**	
9.	Sustainability expenditure	4.91%	6.79%	.14*	-.23**	.13	.20**	.11	.39**	.19**	.33**

*p < .05; **p < .01 (2-tailed test); S.D. = Standard Deviation. ^a The mean value for this construct can be interpreted as a percentage

Table 3. Regression results

<i>Control variables</i>	Models 1–4: Managerial Attitudes				Models 5–8: Sustainability Expenditure			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Firm size (employees)	.16***	.17***	.17***	.14**	.14**	.14**	.14**	.16***
Firm age	-.14**	-.13**	-.12*	-.10*	-.11*	-.11*	-.12*	-.11
Financial resource slack	.11*	.11*	.12*	.08*	.16***	.16***	.17***	.18***
Financial performance	.09*	.10*	.09*	.10*	.24***	.24***	.25***	.25***
Education	.05	.05	.06	.06	.04	.04	.06	.05
Independent variable								
Superstition		.20***	.20***	.21***		.29***		.02
Moderator								
Gender			.14**	.14***	.12*	.12*	.14**	.16***
Interaction								
Superstition * Gender				-.43***				
Mediator								
Managerial attitudes							.30***	.30***
<i>Model fit statistics</i>								
F-value	1.24	3.99***	5.89***	7.11***	2.66**	3.83***	5.89***	6.17***
R ²	.10	.19	.24	.33	.12	.17	.23	.29
ΔR ²	-	.09	.05	.09	-	.05	.06	.06
Largest VIF	2.31	1.18	2.40	1.09	3.56	2.29	3.11	1.94

N = 494; * $p < .10$.; ** $p < .05$; *** $p < .01$; standardized coefficients are shown.

Table 4. Test of conditional indirect effects at values of gender (moderator)

Mediating variable	Value of gender	Effect	Boost SE	95% confidence interval	
				Lower	Upper
Managerial attitudes	3.03	.15	.06	.01	.25
Managerial attitudes	3.39	.17	.04	.08	.29
Managerial attitudes	4.37	.22	.04	.11	.31

Results are based on 1,000 bootstrap sample

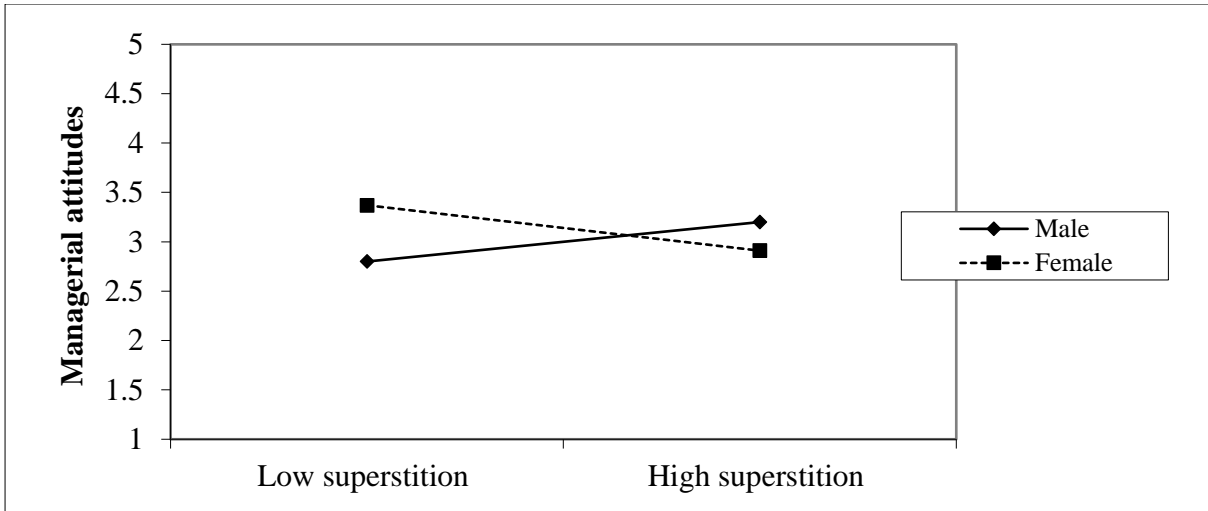


Figure 1: Interaction of superstition and gender on managerial attitudes