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TOP MANAGEMENT BACKGROUND AND CORPORATE GREEN ENERGY INVESTMENT

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Abstract

This paper evaluates the association between top management academic background and the extent of corporate green energy investment. The approach is quantitative and data collection was from the sustainability reports of twenty companies from the FTSE/JSE Responsible Investing Index. Using a cross-sectional data, findings from a linear regression analysis show a significant association (at a p value of less than 0.001) between top managements' academic background and percentage of green energy investment within the sample of companies. Therefore, within the limits of this study, the findings provide a clue to show that managers' academic background may have an influence on the level of corporate green energy investment. This paper opens an agenda for a follow-up research to expand the length and breadth of this research area to find out the most likely group of top managements' academic discipline that may favour more green energy investment. It contributes to the literature on corporate green energy investment by initiating the idea of relating green energy investment with top managements' background.

Keywords: Management background; Green energy; green investment; Green Corporate

1. Introduction

The emergence and awareness of environmental sustainability has brought to fore the current pressure on organisations to be pragmatic and integrate ecological responsibility in organisational processes and operations (Möller et al. 2014). Transforming modern organisations toward ecological consciousness requires transformational managers who are imbued with environmental values including carbon ethics (Egri & Herman, 2000). Such managers are best suited to drive the green energy mandate of environmentally responsibility organisations (Luque-Vílchez et al., 2019). Corporate investment in green energy is part of modern business strategies toward reducing carbon emission; it is also part of corporate environmental accountability and sustainability. Environmental accountability is an aspect of the mainstream managerial function devoted to the

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incorporation of environmental exigencies with the economic objectives in contemporary business decisions and operations (Ferry & Lehman, 2018). Recently, some literature has suggested a linkage between managers' profession and business environmental responsibility (Beugelsdijk et al., 2017).

Ecocentrism and anthropocentrism are ecological philosophies that connote divergent human interests about the natural environment (Mikkelson, 2019). On the one hand, managers' positive attitude to the environment, which ensures low carbon emission and environmental preservation, is regarded as ecocentrism; on the other hand, managers' value for nature, which is based solely on how nature could be exploited for the benefit of humankind, is referred to as anthropocentrism (Thompson & Barton, 1994). Given the evolution of environmentalism in business, both environmental economics and environmental accounting advocate the incorporation of environmental ethics into business, such as the ethics of energy production through investment in low carbon or green energy.

Whether managers are imbued with green energy ideology after acculturation in their various professional disciplines is an aspect of green energy research that seem to be eluding the attention of researchers in the field of green energy investment. Unravelling this phenomenon is highly essential for improving low carbon emission in organisations through investment in green energy. Therefore, this paper focusses on examining the likelihood that top managements' academic background may relate with corporate level green energy investment. This research is an initial enquiry in this aspect of linking green energy investment with top management academic background and may bolster future theoretical and research discussions in this area of corporate green energy literature.

2. Problem statement

Research indicates that some managers from certain professional background are more disposed to corporate environmentalism (Cordano et al., 2010). Despite the bourgeoning research on corporate green energy investment, there is a dearth of research on how top managements' academic background might related to the level of corporate green energy investment. This paper is thus significant as it bridges this existing gap in knowledge and makes a new contribution to the literature by initiating a research discussion on the linkage between top managements' academic background and the level of corporate green energy investment. Therefore, the objective of this paper is to evaluate possible association between top managements' academic background and corporate green energy investment. Hence, the research question, which underpins this paper, is whether there is a relationship between top managements' academic background (educational discipline) and corporate green energy investment. Hence, this paper aims to initiate a new angle of research discussion on corporate green energy investment.

3. Theoretical Framework – Ecocentrism and Anthropocentrism

The quest for green energy investment is in line with sustainable energy and development brought about by man's realisation of the need for environmental conservation has brought to the center stage two opposing views of environment and sustainable development. Whilst some research opine that sustainable development is attainable through anthropocentric view of nature (referred to as weak sustainability), others advocate ecocentrism (seen as strong sustainability). These two opposing environmental stance generated an intense argument during the "Hetch Hetchy Environmental Debates" in the United States. On the one hand, the conservationists believed that the environment should be used to benefit society (a view referred to as anthropocentrism), but on the other hand, the preservationists advocated that the environment should be protected and saved from human exploitation (a view referred to as ecocentrism) (The US National Archives, 2019). Given that, energy production may have a direct negative impact on the environment (if not sustainably produced), researchers have begun to associate green energy production with ecocentrism (which is a cleaner type of energy that assists in environmental sustainability). This is why Frigo (2018) developed an ecocentric philosophy of energy, wherein he links energy production with ethical implications around the politics of energy production. This indicates the interconnectivity between environmental science and, business, economics and energy policy.

Anthropocentrism became problematic for environmental preservation and accountability as the proponents of anthropocentrism regard human beings as the central point of focus in the universe (Keulartz, 2012). According to this environmental philosophy, human beings have intrinsic value and the environment should be exploited to benefit humankind. This has led to an unbridled form of anthropocentrism referred to as *cornucopia*, wherein adherents maintain that earth's natural resources are not limited (Encyclopaedia Britannica, 2019). It is not surprising that many professionals appear more inclined to anthropocentrism given that many professions can trace their origin from traditional Western philosophical inclination on anthropocentrism (Bretzlaff-Holstein, 2018; Okkonen et al., 2018). Majority of modern professions are thus rooted in ethical perspective of anthropocentrism (Stanford Encyclopedia of Philosophy, 2016; Grey, 1998) with attendant influence on professional environmental ethos. With the passage of time, in order to improve their ethical standing, some anthropocentric adherents have sought to improve their standpoint on nature exploitation and therefore developed the concept of *enlightened or prudential anthropocentrism* (Keulartz, 2012). This seemingly metamorphosed form of anthropocentrism maintain that the only practical environmental ethics is to provide moral grounds to develop social policies for protecting the environment, which is limited to the justification that human beings live in it but not for environmental concern (Stanford Encyclopedia of Philosophy, 2016). Albeit the claimed prudential stance of metamorphosed anthropocentrism, the continual domination and exploitation of nature under this self-proclaimed improved anthropocentrism is regarded by critics as *cynical anthropocentrism* (Mmoneke &

Anowai, 2018); this simply means that the new breed of anthropocentricism do not practically and significantly differ from the main anthropocentrism.

On the contrary, unlike the human centered anthropocentrism, another ecological philosophy is ecocentrism, which is nature-centered and does not view humankind as having the natural permit to plunder and destroy nature. Ecocentrism is widely seen a veritable pathway to sustainable development. Ecocentrism is perceived as the umbrella that accommodates biocentrism and zoocentrism as the three assigns value to nonhuman species with ecocentrism providing the wider version of consideration and value to nonhuman nature (Millennium Alliance for Humanity and Biosphere, 2019). Therefore, it is believed that the key ecological philosophy to sustainable growth and development is ecocentrism (Sartore-Baldwin & McCullough, 2018; Piccolo, et al., 2019). Accordingly, in an environmental risk-filled society, there is an urgent need for organisations and their managers to embrace ecocentrism in order to be resilient and competitive (Shrivastava, 1995).

4. Literature Review

The era of pro-environmentalism as a corporate culture has ushered debates about novel managerial competencies that embed in environmental behaviour and/or ethical proclivity of modern corporate managers (Chang, 2011). Accordingly, it has been proven in some empirical research that environmental penchant of managers might as well determine or affect environmental responsibility of the organisations where such managers occupy managerial positions (Flannery & May, 2000). Despite growing campaign for modern managers to imbibe environmentalism as part of their business ethics, many mangers, even after undergoing prestigious study programmes in business administration appear apathetic to environmentalism as a vital component of contemporary management ethics (Neubaum et al., 2009).

It has been found that corporate culture where professionals work may influence their level of ethical behaviour and environmental ideology (Bansal & Song, 2017). Organisational and professional culture refers to norms, ethos, values and beliefs, which has been configured as corporate or professional identify. Accordingly, leaders, managers and staff members in organisations and professions adjust and condition themselves to fit in within the setting to be compliant; this suggests that corporate and professional values influence the behaviour of managers (Bennett & James, 2017). This is because managers modify their leadership and behavioural styles and mannerism to achieve corporate objectives. This suggests that if managers are not properly immersed in pro-environmentalism behaviour during their training programmes, they may not be able to instil required environmental ethics in the organisations where they manage (Ghoshal, 2005). Other researchers have evaluated how national culture affect managers ethical behaviour. For example, Hofstede (1980) explored the consequences of culture on the varied differences on work related behavioural issues that subsists amongst international businesses and found that the culture of a manager's country of origin does have aninfluence on the work related ethical behaviour of managers. This

finding has spawned numerous cultural related studies in business and environmental management, indicating the importance of culture in influencing ethical behaviour needed to manage modern organisations.

Since environmental ethics may not necessarily exist at the same level with all managers, some literatures have sought to understand the factors that affect managers' ethical behaviour. Beugelsdijk et al. (2017) find that manager's ethical behaviour could influence corporate behaviour and that corporate behaviour could as well influence managers' ethics. This indicates that, in some instances, ethical behaviour of some managers may be acquired before joining an organisation whilst some managers might become immersed in the existing organisational ethical norms. For instance, a research, which examined managers' environmental values in North America found that professionals that manage profit and non-profit organisations, which provide environmental services and products are more imbued by ecocentric values than professionals in other sectors (Egri & Herman, 2000). A related empirical research indicates that managers with social and environmental values are more predisposed to improve organisational social and environmental disclosure (Luque-Vílchez et al., 2019).

This suggests the importance of hiring the right managers with environmental ethics to improve the environmental responsibility of organisations. In another study, which evaluated the effect of business community culture on corporate environmental sustainability, Gallego-Álvarez and Ortas (2017) found that the pressure from stakeholders affects the extent of environmental commitment and disclosure by businesses. Dunphy (2014) research on professional appreciation of environmental conservation indicate that professional level of environmental responsibility is jointly determined by their organisational profit priority and professional limitations, which thus tames different professions to respond to immediate need of their organisations and professions. A related research indicates that social norms, which includes professional norms is one of the key factors responsible for professionals' inaction on environmental sustainability (Griggs et al., 2017). A study of accountants' professional ethics found that accountants' moral ethics standing is influenced by their professional ethical codes (Douglas et al., 2001). Other closely related research laments that there is some ethical failure amongst some accounting practitioners; these include lack of human feeling and lack of pragmatic environmental concern (Gray et al., 1994; McPhail, 2001; Bebbington et al., 1994). Similar research found that public administrators concur that environmental goals lack clear definition (Bell & Park, 2006), which affects environmental commitment by public administrators. Accordingly, Mathews (1997) highlight that the world is in urgent need of motivated professionals to take proper control of environmental conservation in private and public sectors.

The exigency of environmental responsibility and sustainable development has wide ramifications for different professions across many disciplines regarding their professional practice and their role in organisational environmental responsibility (Martin et al., 2005). Whilst some professions such as engineers, health professional and others are involved with health and safety, they are also confronted with the

responsibility of using environmental resources sustainably in order to reduce environmental impacts such as carbon emissions and wastes (Martin et al., 2005). Given the current impetus about environmental accountability, the corporate needs to know which category of managers they need to put in charge of their environmental management position. Therefore, examining the degree of appreciation of environmental sustainability by different professions is very pertinent to assist organisations recruit the suitable professionals that would elevate the state of environmental responsibility of organisations. The sections below present the method and findings.

5. Method

Firstly, the paper reviewed the foregoing related literature, followed by next sections on analysis of data, which was conducted quantitatively using cross sectional data of twenty companies on top management (proxy by CEO and board chair) educational background and green energy investment. Data were analysed quantitatively using the linear regression analysis. Data were collected randomly from twenty companies listed in the FTSE/JSE Responsible Investment Index (RI). These companies appear under the RI Index as they commit to pursuing environmental sustainability goals such as energy efficient, cleaner energy and other responsible business commitments. However, this paper focussed on companies that have committed to and actualising investment in green energy. Hence, the dependent variable for this research is percentage of green energy invested by a company. The independent variable is top management educational background (discipline). Therefore, the independent variable was categorised into two major groups and denoted with a dummy variable. The first group comprised companies having a CEO or board chairs with academic background in (science related discipline or law). This group is assigned a value of 'one' (1).

The other group comprised of companies having a CEO or board chair with academic background in (business related discipline or other disciplines). This group is assigned a value of 'zero' (0). The dependent variable appeared in percentages (i.e. percentage of total green energy invested so far by a company).

6. Results

Table 1 presents the regression results, which show that within the sample of this study, top management academic background has a positive and significant relationship with green energy investment at a p-value of 0.00001, which is much below the alpha level of 0.05. Furthermore, the heteroskedasticity and normality tests suggest there is no heteroskedasticity and that the data is normally distributed.

Accordingly, based on this initial result, the practical and theoretical implication of this finding for corporate green energy pursuit and environmental image seems to suggest that top managements' academic discipline may play an important role in corporate

clean energy strategy (pending future and further wider analysis of this results using larger data set).

Tentatively, it can be theorised for further study that organisations that intend to improve their green energy orientation may place emphasis on the professional background of potential managers. The findings of this paper corroborate the findings about the existence of different environmental ethos amongst diverse professionals (Singhapakdi et al., 1994; Karahanna et al., 2005). Furthermore, the findings from Nikolaou and Loizou (2015) reveal that academic background of managers contributes to their carbon footprint reduction ideology.

Table 1: OLS, using observations 1-20, Dependent variable: GreenEnergy Investement

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	36.25	2.13139	17.0077	<0.00001	***
CEO-Chair Background	20.4167	2.75161	7.4199	<0.00001	***

Mean dependent var	48.50000	S.D. dependent var	11.82103
Sum squared resid	654.1667	S.E. of regression	6.028482
R-squared	0.753610	Adjusted R-squared	0.739921
F(1, 18)	55.05478	P-value(F)	7.04e-07
Log-likelihood	-63.25507	Akaike criterion	130.5101
Schwarz criterion	132.5016	Hannan-Quinn	130.8989

Source: Authors computation

Table 2: heteroskedasticity & normality Tests

White's test for heteroskedasticity -
Null hypothesis: heteroskedasticity not present
Test statistic: LM = 2,20405
with p-value = P(Chi-Square(1) > 2,20405) = 0.137649

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 0.284253
with p-value = 0.867512

Source: Authors computation

7. Conclusions

This paper set out to examine different professionals' inclination to corporate green energy investment. It sought to determine whether managers' professional academic background could be associated with the level of corporate percentage of green energy investment, and hence compliant with environmental theory of of ecocentrism. This paper is pertinent given little previous research on how different professionals differ on

their green energy ideology. Few researches such as Singhapakdi et al. (1994), Karahanna et al. (2005) and Nikolaou Loizou (2015) had found that managers' professional background might affect their environmental strategies. However, there is scarcity of research that has gleaned light directly on managers' academic background and corporate green energy investment. This paper contributes by bridging this gap and examines whether managers' educational discipline can affect energy efficiency investment. Therefore, applying the regression statistics, results from the analysis of data show that a positive relationship exists between corporate level of green energy investment and their managers' educational background. Drawing from the findings, the paper recommends the need for companies that intend to bolster green energy accountability to consider that academic specialisation of potential managers they intend to recruit does have an impact on the level of green energy investment. The limitation of this paper is that it did not investigate which group of managers' academic background may favour greater investment in green energy. This thus opens an avenue for a follow-up research to expand the length and breadth of this research area to find out the most likely group of top managements' academic discipline that may favour more green energy investment.

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