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EXAMINING THE PRINCIPAL/AGENT INTERESTS IN SOEs RELATED TO ENERGY SECURITY: A CASE STUDY OF ESKOM AND NESCO

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ABSTRACT

South Africa and Nigeria are the leading economies on the African continent and should lead the energy generation frontier, even to the extent of competing with other global actors and supporting the development of other African countries. Nevertheless, due to corruption, lack of maintenance and political interference, among others, they are unable to do so. Slow economic growth, an enduring energy crisis, and other structural challenges continue to undermine productivity and broader development outcomes in South Africa and Nigeria. The principal-agent relationship has guided the running of SOEs and, in some instances, their demise. Hence, the study underpins the agency theory (principal-agent interests) to argue that the interests of these stakeholders contribute to the collapse of SOEs related to energy security. The study presents a theoretical description perusing the issues, factors, and validations of principal-agent interests in SOEs. In outlining the energy crisis of Nigeria and South Africa, the study notes political interventions, disintegrating infrastructure and lack of sustainable solutions. A qualitative case study design was employed using Eskom in South Africa and NESCO in Nigeria to understand these SOEs' responses to the energy crisis in their respective countries. Qualitative document review enriched the analysis, description, and understanding of the phenomena under study. Hence, the study concludes that principal-agent interests have a vast influence on the operation of SOEs, as is the case in Nigeria and South Africa. In addition, the study notes the necessity of having SOEs in the energy sector and includes the influences of political intervention and disintegrating infrastructure on the ability of SOEs to provide sustainable solutions to the energy crisis.

KEYWORDS: Agency Theory, SOE, Nesco, Eskom, and Energy Security.

1. INTRODUCTION

The paper argues a theoretical description perusing the issues, factors, and validations of principal-agent interests in SOEs related to energy security in Nigeria and South Africa. In outlining the energy crisis of these countries, the paper notes the political interventions, disintegrating infrastructure and lack of sustainable solutions. These are crucial factors integral to the study as it sought to understand better the principal-agent interests' role in energy security SOEs. Therefore, the point of departure is to discuss the agency theory and its core principles and show how it was applied to the study. In addition, the study analysed the necessity of having SOEs in the energy sector and included the influences of political intervention and disintegrating infrastructure on the ability of SOEs to provide sustainable solutions to the energy crisis.

The agency theory (in some instances referred to as the principal-agent theory, which will be used interchangeably in this study) notes that if there is any form of conflict between the agent and the principal owner, the entity will not perform well due to underlying management issues. Influenced by Ross (1973) and Mitnick (1973), the agency theory came about explains the relationship between the agents (managers) of corporations and their principals, also known as owners (Pierce Jr, 1989; Nielson and Tierney, 2003; Shapiro, 2005). The principal-agent theory was later embraced by scholars for its core principles of depicting, explaining, and resolving the dynamic relationship problems between principal owners and their agents or managers (Eisenhardt, 1989; Tan, 2014). The scholars also highlighted the ripple effects of institutional decision-making in the principal-agent theory.

Eisenhardt (1989) and Tan (2014) further note that there are three primary relations within agency theory: shareholders and company executives, investors and fund managers, and boards of directors and CEOs (Ross, 1973; Mitnick, 1973). The relationship between shareholders and company executives is informed by having shareholders as the principals and company executives as the agents. The relationship between an investor and a fund manager has the investor as a principal and the fund manager as an agent (Bowie and Freeman, 1992). Lastly is the relationship between the board of directors (principal) and the CEO (agent). All three are important as they depict the relevance of the theory in studying an organisational setting (Shogren, Wehmeyer and Palmer, 2017).

In addition, some leading causes of the principal-

agent problem include self-interests, knowledge, moral hazard and attitude (Ross, 1973; Mitnick, 1973; Bowie and Freeman, 1992). The agents may choose to follow selfish ambitions instead of those of the organisation, which causes the entity not to run efficiently and not succeed. Regarding knowledge, the principal must find as much knowledge about the agent as possible, because lack of information may cause mistrust and hinder their working relationship (Bowie and Freeman, 1992).

Bowie and Freeman (1992) further note that a moral hazard refers to the extent to which the principal and the agent are equally morally inclined and placing the organisation's and employees' needs to ensure a successful organisation (Bhattacharjee, 2012). 'Attitude' refers to the inclination of risk-taking that an agent may have and contributes to the entity's success. However, it is also important to note the aspect of the principals, as they may seek to employ a person with either no risks or minimal risks (Shaturaev, 2022). Although the agent may not be a risk taker, they are still expected to grow the entity regardless. These are essential underpinnings of the agency theory, which will assist in understanding its application to the study.

2. LITERATURE REVIEW ON THE RIPPLE EFFECTS OF INSTITUTIONAL DECISION-MAKING IN THE PRINCIPAL-AGENT THEORY

When an individual decides on institutions, it will likely affect several actors and people (Panda and Leepsa, 2017). For instance, the decision to implement load shedding and power cuts at Eskom or NESCO will affect society and business, as neither party will receive enough power to continue with daily activities. For society, electricity is used to cook and boil water for bathing, among other vital activities, so failure to have this resource will disrupt the normal functioning of society's daily lives. Similarly, businesses use power to produce their products, and power cuts will result in periodic working at the firm, thus affecting profit and productivity. Therefore, when an agent who is a manager at an SOE makes a corrupt decision, it is likely to affect the nation, which is the one that benefits from the entity as shareholders. On another note, the agency theory also deduces that the principal may act against the agent's recommendations, thus causing agency problems (Eisenhardt, 1989; Hall, 1998; Tan, 2014). A principal going against the recommendations of agents ensures that organisational issues are not solved efficiently. Even in the case of the energy crisis over

the years, the agents have noted that the two countries would face an energy provision crisis, yet the principals did not take measures to address this in time (Inglesi and Pouris, 2010; Sebitosi, 2010).

Linder and Foss (2015) assert that the agency theory concerns the problems and solutions regarding delegating tasks from owners to managers. Therefore, owners are likely to devise a solution to solve issues arising within the organisation and then delegate to managers to solve the problem (Panda and Leepsa, 2017). Therefore, although owners may delegate specific duties to managers, they still indirectly give managers an idea of how to deal with the problem. However, the solution will likely fail or not be adopted due to a conflict of interests between the two parties or issues, particularly on the agents' side. This is because agents are generally supposed to pursue the organisation's solutions, as that is their delegated job. Hence, it becomes a problem when owners intervene in the organisation's day-to-day running, causing conflict. Therefore, agency theory views that the principal should delegate duties to the agents in the organisation, and they should be tasked with coming up with solutions for the entity in times of crisis (Panda and Leepsa, 2017). What is also essential is that agents not only be concerned with solving organisational issues but also seek to grow the entity. Bhattacharjee (2012) concurs with Panda and Leepsa (2017) that the entity's growth can be in monetary, infrastructural and employee capacity development. In addition, the vision to meet the entity's growth is delegated from the principal to the agent.

2.1. Conflict of Interests at the Core of the Principal-Agent Theory

The theory assumes a conflict of interests between the agents and principals concerning the direction and critical decision-making for the sustainability and operations of the corporation. Agency theory is about determining who should benefit from the two parties involved in the corporation (Ross, 1937; Mitnick, 1973). In essence, the decisions taken by either the principal/owners or the agents should benefit either of the two parties. When the agents make decisions which increase the organisation's sales, they also likely increase their chances of receiving bonuses, which boosts the relationship between the agent and owner.

Similarly, even external parties, such as customers, benefit. Being able to end load shedding successfully will result in businesses and industries functioning at total capacity to increase productivity. Society will also be able to trust the reliability of

either Eskom or NESCO such that they will use their services fully, increasing customers to the organisation and thus boosting profits. This is clear as the theory depicts that having a principal-agent problem means the two parties have different ambitions (Ross, 1973; Mitnick, 1973), which could affect the organisation's productivity. Thus, to solve this problem, the theory suggests that the right incentives or environment should be created to promote the agents' growth and how they can benefit from the organisation's success (Linder and Foss, 2015). These incentives include bonuses to boost employee morale, creating a safe space for employees to thrive and having principals/owners consider agents' best interests.

The theory aims to understand the extent to which agents promote and protect the owners' interests and how they act when faced with cooperation issues. Do agents use their skills and positions to bring solutions, act upon the owners' suggested solutions, or focus on the conflict between the two parties (Mitnick, 1975)? Inglesi and Pouris (2010) and Sebitosi (2010) warn that agents' selfish interests would soon cause citizens to suffer by having to pay the entity's debt, experiencing load shedding, and having deteriorating infrastructure due to poor maintenance. Likewise, Linder and Foss (2015) argue that what is evident in most cases is that the agents act according to their selfish ambitions to enrich themselves. They create more issues for a corporation than responding to the crisis as they disregard their duties and focus on their agenda of either looting or misusing resources. Thus, shifting the focus to a personal agenda inhibits cooperation to solve crises.

2.2. Criticisms of the Principal-Agent Theory

Therefore, applying the theory to the study implies that although principal owners come up with solutions to respond to the energy crisis succinctly, agents' selfish agendas/interests impede the success of these solutions (Greiling and Spraul, 2010). These solutions include allowing private entities to produce their power to add to the grid, refocusing on renewable energy as a cheaper energy source, and employing other power sources, such as nuclear and solar energy. Hence, the selfish ambitions which cause the conflict of interest for the agents hinder the success of the entity, as documented by Mitnick (1975), Linder and Foss (2015) and Panda and Leepsa (2017).

In addition, Crutchley and Hansen (1989) document that although there is a business and personal relationship between the principal/owners and agents. Their inability to get along hampers the

organisation's success. This makes evident that the selfish interests of agents who work in SOEs, which are majorly owned by the states, hinder their responsibility to give back to the nation, and instead, they take from the state (Panda and Leepsa, 2017). In most cases, agents are corrupt and allow their networks to infiltrate the organisation to enrich themselves and those around them.

For instance, Mandonsela (2019) highlights the Zuma-Gupta relationship as one of those relationships that pursued selfish interests at SOEs. Madonsela (2019) depicts the relationships of political elites such as Malusi Gigaba, Brian Molefe, Mosebenzi Zwane, and Anoj Singh; the entrepreneurs or brokers Eric Wood, Salim Essa, Ashok Narayan, and Iqbal Sharma; and the dealers as examples of principal-agent relations pursuing selfish interests (Swilling, 2017).

Drawing from the above statement, the government under the Department of Energy has not made means or taken steps to prepare for the crisis. The agents hired at the SOE were not so much focused on solving the crisis at this entity. Instead, the CEO would buy coal from his friends at exorbitant prices at the entity's expense while enriching himself. This has perpetuated the energy crisis and caused others to contribute to the problem, hence the need for an urgent response (Kennedy-Darling, Hoyt, Murao, and Ross, 2008). For instance, failure to maintain the power stations over the years has resulted in generating units being unable to function at full capacity.

In addition, during his tenure as president, Mbeki warned the ANC that Eskom would soon be unable to supply enough energy where needed. Hence, maintaining existing and building new power stations or focusing on other forms of producing power was necessary. Kennedy-Darling et al. (2008) agree with Kamal (2012) that the energy crisis may be caused by the lack of maintenance and proper vision for the power utility to function, severely compromising energy provision for future generations.

3. PRESENTATION OF FINDINGS

3.1. *Political Intervention in Soe Operations and Decision Making*

Selfish ambitions, chasing personal interests, corruption, SOE mismanagement, and conflict between principals and agents threaten energy security (Abotsi, 2015). Political intervention has been one of the foremost challenges to global development, particularly in underdeveloped countries. Political intervention can be understood as

political elites' ability to interfere with an organisation's day-to-day running, hijacking its operations and dictating its mandate (Okhmatovskiy, 2010; Lazzarini and Musacchio, 2018). Their intervention may be motivated by the need to enrich themselves or ensure they influence government decisions.

In most cases, they are the cause of SOEs' downfall. Political elites deploy cadres to serve in SOEs without the requisite knowledge, contributing to some SOEs' downfall. Even in first-world countries such as China, challenges with political interventions in developing SOEs are a reality (Zhou, Guo, Hua and Doukas, 2015). Although this political interference can contribute positively in some cases, such as in China, which has seen a growth in industrialisation, it can be damaging in others. Within China, the agency theory advocates that the incentives placed by the government allow the agents to benefit from the entity; hence, they seek to grow their SOEs.

For instance, in China, SOE employees are given bonuses and must educate individuals to perform tasks. The negative impact of political interference in SOE operations is seen in the National Energy Regulator of South Africa's (NERSA) (2008) decision to increase electricity tariffs as requested by Eskom due to making losses. This increase is motivated by the lack of profit or productivity within Eskom; thus, increasing tariffs ensures that profits increase, even though these profits come at the expense of citizens because of the increased electricity prices (Amra, 2013). Hence, due to political intervention, the principal-agent relation affects the entity's productivity and the customers entirely.

On another note, the political intervention also opens the opportunity for political patronage and clientelism. Principals can make organisational decisions for agents and are trusted to grow the entity. Agents may use this opportunity to award business opportunities to their political, business and personal associates in exchange for money or favours. In South Africa, the ANC dominates the legislature, and the minister (principal) of public enterprises is currently a member of the ANC (Bearfield, 2009). Therefore, the minister will appoint loyalists of the ANC to serve on the board of SOEs, such as South African Airways and the South African Broadcasting Commission, among others. These are some of the factors brought about by political intervention which also contribute negatively to the growth and development of SOEs. The agents appointed to serve in these entities often do not qualify or have the competency to run such

organisations.

Bearfield (2009) notes that political patronage is noted as the right and authority of a minister to appoint individuals to an office, and in most cases, this is based on partisan loyalism. These appointments involve positions of authority, such as principal managers or politicians at the highest offices, such as ministers (Hollibaugh Jr, Horton, and Lewis, 2014). Hicken (2011) explains political clientelism as the exchange of resources through political influence in SOEs. For instance, Weingrod (1968) and Arriola (2009) argue that this exchange of clientelism can occur when political elites exchange money for lucrative and influential positions in SOEs (Hicken, 2011).

Whitfield and Therkildsen (2011) concur by noting that the patron-client (principal-agent) relationship is embedded with an exchange of jobs, political favours and money. Mahlati (2021) notes the Cyril Ramaphosa 2017 campaign during the race for the ANC presidential seat as one of the examples of the patron-client relation where those who pledged their vote to Ramaphosa would spend time in luxury hotels while they were also promised money for supporting Ramaphosa's presidential candidanship. This is a significant issue regarding SOEs, as the principals appointed for political favours are incompetent (Weingrod, 1968; Arriola, 2009).

Thus, this cronyism will see these SOEs unable to perform at maximum capacity because the managers do not know what they are doing and exhibit severe incompetence and gross negligence, most evident in the case of the energy crisis in Nigeria and South Africa. Political intervention causes political loyalists to be deployed to Eskom and NESCO, not in the interest of the entity's growth to serve citizens but in the self-enriching interests of the political parties' leaders (Hicken, 2011).

Characteristics of Energy Crisis and Security

The energy crisis in Africa is characterised by rolling blackouts, load shedding, corruption, and no clear indication of a new plan to solve the crisis (Weingrod, 1968; Arriola, 2009; Hollibaugh Jr et al., 2014; Oyelere, 2014). Aidoo and Briggs (2019) contend that rolling blackouts are now the norm for most African countries. The intentional blackouts (load shedding) are done to avoid a total power grid shutdown. Across the world, scholars such as Liu, Dong, Lohse and Petrovic (2015) note that these countries have resorted to making rolling blackouts a formal policy to reduce environmental degradation and avoid their electrical systems' total collapse. Furthermore, rolling blackouts are also a means to assist the power-producing entities to cope with the

demand (Liu et al., 2015; Jaglin and Dubresson, 2016).

Thus, electricity is provided during peak hours to ensure production and industrialisation. Then, in the evening, electricity is cut off to allow the entity to accumulate capacity for the next day. In some countries, such as South Africa, these blackouts do not occur throughout; instead, some areas are more affected than others (Liu et al., 2015; Ouedraogo, 2017). Eskom rations the energy supply to ensure that pressure on the system does not lead to dire electrical constraints, leading to total shutdown or failure (Jaglin and Dubresson, 2016). Similarly, blackouts are also common for energy providers in Nigeria (Ouedraogo, 2017).

Load shedding symbolises the African continent's energy crisis (Tiwari, Janghel, Jain and Mishra, 2013). Syadli et al., (2016) contend that load shedding is also a partial solution power utilities use to limit the constraints of the power system. In load shedding, NESCO and Eskom choose areas that will be offline for a certain period, taking turns to have electricity (Tiwari et al., 2013). With the load-shedding schedule, power utilities schedule different load-shedding stages. During stage one, electricity will only be gone for one hour, stage 2 is for two hours, and stage 3 is for three hours. These stages go up to stage 8, whereby the power constraints will be dire for the system and eventually lead to a total collapse or shutdown (Goldberg, 2015).

Moreover, corruption and having no clear policy direction are also some of the leading characteristics of the energy crisis in Africa. Omoleke et al., (2011) believe that power utility managers take advantage of the lack of accountability they have to provide to the public and use the opportunity to loot and cripple the entities. They procure their selfish ambitions, seeking to enrich themselves and fail to execute their oath of office (Kennedy-Darling et al., 2008). Kennedy-Darling et al., (2008) agree with Omoleke et al., (2011) that this includes a corrupt deal with individuals or entities to ensure their circle of influence benefits at the entity's expense. In addition, due to a lack of resources and infrastructure, the deficiency of proper policy direction, energy security, and poverty perpetuate societal issues (Kennedy-Darling et al., 2008; Kamal, 2012). For instance, Jamasb and Pollitt (2005) document that countries such as Italy, Germany, the United Kingdom, and France seek to change their power production methods and develop new ways of green energy production.

This is a significant issue for most African countries because new and green energy depends mainly on technological advances, so the lack of this

capacity causes policy confusion (Nwedu, 2021). While focusing on the state of Nigeria, Nwedu (2021) explains that it is still not clear how the government will solve the energy crisis and how the current measures will contribute to the overall solution. Even in South Africa, policy confusion is a considerable obstacle to energy security. Eskom has numerous power stations; out of all these, only one is nuclear (fully technologised) (Blignaut, 2012). However, a coal power station was built after its establishment. The Medupi power station in Limpopo was established to try to combat the electricity crisis in South Africa (Blignaut, 2012; Oboirien, North and Kleyn, 2014).

Furthermore, Oboirien et al., (2014) document that this station was said to be the fourth largest coal electricity-producing power station, contradicting the government's plans to move to nuclear energy and other forms of energy production better for the environment (Davidson, Hirst and Moomaw, 2010). Hence, this power station raised many questions as the target of stoppage of electricity production through coal was looming and this agenda is getting intensified across the globe; why does the South African government still invest in coal production (Davidson et al., 2010)?

Similarly, this does not agree or align with the 2030 National Development Plan (NDP) the country hopes to achieve (Baker, 2015). Fourie (2018) alludes that this policy or development plan seeks to create sustainable, economic, and environmental plans that will be accessible even for the upcoming generation. Baker (2011) further argues that the Medupi power station's establishment was poorly thought through and created a policy confusion crisis. It can, therefore, be regarded as a wasteful expenditure that will not help the energy crisis (Baker, 2011). The South African president has accepted monetary fund injections from international investors to assist the country with shifting policy from electricity generated from coal to a new form that will be more environmentally friendly (Sunday World, 2021).

According to Pollet, Staffell, and Adamson (2015), South Africa still had about 200 years of accessible coal in 2012, which was going to be a key strategic plan for the government to grow the economy. Hence, the South African government has also invested in the mining sector, understanding its impact on the economy and social lives, therefore playing a strategic and key role in the mission of the NDP in 2030 (Fourie, 2018). Therefore, unclarity around South Africa's policy formulation concerning the economy and energy provision is also a significant obstacle to energy security.

Even in the case of NESCO in Nigeria, corruption has gotten its claws into the government (Nwedu, 2021). Patronage and clientelism have dominated government running for years, and the impact has been economic and social (Oyelere, 2014). Nigerian politicians have sought to ensure that the government structure benefits those in their circle based on religious or political affiliations (Masungwini, 2021; Sun et al., 2002). The government has been developing multiple solutions to curb corruption, particularly concerning electricity theft. For instance, Dahunsi et al., (2021) state that the rolling out of the meter boxes will assist the government to keep track of those connected to the grid and utilise the national energy supply. Moreover, this will assist with the illegal connections constantly stealing power from NESCO and ensure that even the employees stop illegal connections. Similarly, Dahunsi et al., (2021) note that what is also noticeable is that the employees were also taking bribes to pursue illegal connections. Therefore, rolling out the new meters will also assist in curbing this corruption (Dahunsi et al., 2021).

Nwedu (2021) believes that the reality of rolling blackouts and load shedding are significant characteristics of the energy crisis in Nigeria as well. The same factors contribute significantly to the energy poverty currently experienced in the country as they contribute to the negative or insufficient energy supply (Nwedu, 2021). This will indirectly have dire and negative consequences on the growth and sustainability of the economy (Patel, 2008). The disruptions in energy supply will result in slow production and industrial growth, possibly causing a negative economic downturn (Patel, 2008). Therefore, adopting meritocracy to appoint executive members who serve on SOE boards would mitigate corruption and help solve the energy crisis, ensuring a sustainable economy and environment (Sun et al., 2002).

Similarly, even internationally, some utilities use rolling blackouts to curb energy supply and address demand challenges. In the United States of America (USA), the Midcontinent Independent System Operator (MISO) company has warned that the power grid is under severe pressure (DiSavino, 2022), meaning that the power utility would resort to rolling blackouts and load-shedding stages to ensure that the grid does not collapse. The operator indicated that the power grid supplies about 42 million people. These communities include central societies of the USA from Minnesota to Louisiana and the Canadian Province of Manitoba (DiSavino, 2022). Therefore, this evidence from the literature

depicts that rolling blackouts and load-shedding stages are a reality in developing and developed nations. Recently, the invasion of Russia into Ukraine has worsened the quest for acquiring a stable energy supply in Western states. The United States has reported that it anticipates a cold 2023 winter season and energy supply will be limited. The power grids of the US are currently strained with low fuel, gas and coal supply. Wade, Malik and Saul (2021) agree with DiSavino (2022) that the energy crisis in Europe and Asia seeks to advance to the US. These are well-developed countries with world-class utility infrastructure, such as MISO in the USA, Enel in Italy, and General Electric in Pakistan, among others, yet they are also depicting signs of energy emergence of energy scarcity (The Local, 2022).

3.2. *Change in Greenhouse Gases*

The contemporary arguments regard moving away from traditional energy production methods, particularly coal production. Ouedraogo (2017) alludes those African countries such as South Africa have many coal reserves, making it a logical choice for electricity production. However, this hinders the goals of green energy and sustainable energy production (Ouedraogo, 2017). Thus, this hinders the United Nations 2030 Millennium Development Goals (MDGs) meant to sustain the environment and build greener economies, as Lei et al., (2019) have documented. In addition, even the African Union Agenda 2063 regards the electricity supply. The agenda demands ending electricity production from burning coal (Omisore, 2018).

Omisore (2018) further notes that there is a need to address the challenges of the environment and economic growth as this will cause an interruption in the mining sector, as it is the most significant economic contributor in the African continent. Therefore, the change in greenhouse gases may cause energy poverty to increase within the continent, particularly in South Africa and Nigeria, because many people live in poverty in Africa, meaning most cannot afford energy. Energy will mainly be generated from solar systems, wind turbines, and other means, and these resources are expensive for the government to procure, so they will only be directed to those that can afford to buy and in the urban areas. Those in the rural areas will suffer and be unable to buy or procure energy; therefore, energy poverty will increase. Several first-world countries have sought to offer South Africa a R131 billion fund to assist Eskom in the transition from the traditional method of energy production (Sunday World, 2021). This aligns with the United Nations' Sustainable

Development Goal 7 (SDG7), which seeks to eradicate all energy production methods that pose a danger to the environment and future generations.

Furthermore, the greenhouse gas methods of energy supply harm the environment and are noted as contributing factors to energy poverty as they are not explored fully as means to produce energy (Ouedraogo, 2017). Hence, the failure to develop new ways to supply energy with insufficient grid capacity is also a dominating factor. Hence, first-world countries such as the United States of America and China have resorted to sustainable energy (Lei et al., 2019). Therefore, focusing on sustainable energy production is part and parcel of ending energy poverty as the world seeks to transition to greener energy production methods. However, the world remains divided around the issue of the transition from coal production and greenhouse gases to alternative means, such as nuclear and wind energy production (Bu et al., 2022). Sunday World notes that global investors have alluded that greenhouse gases are the best solution to the energy crisis while ending environmental damage and saving it for future generations.

3.3. *Deteriorating Infrastructure and Energy Crisis*

The lack of infrastructural development worldwide has been associated with a lack of industrialisation and economic growth (Srinivasu and Rao, 2013). Hence, Olaseni and Alade (2012) assert that economic development in most African countries is associated with infrastructural development, particularly SOEs. Due to the structural adjustment, Africa's circumstances and history have left most African countries highly indebted (Summers and Pritchett, 1993). Therefore, the resources of these developing countries are limited, and they cannot expand other infrastructural development nor maintain the existing ones; hence, most SOEs depend on bailouts and funding (Mills, 2012). While focusing on the Pakistani, scholars such as Kouser and Subhan (2020) agree that for countries to mature economically and industrially, there is a need to invest much capital in infrastructural development. However, in the case of most developing and underdeveloped countries, the focus becomes social and economic development, such that a limited amount of the budget goes towards infrastructural development.

For instance, Naidoo and Maré (2015) focused on South Africa's Reconstruction Development Plan (RDP) and noted it as one of the best in the world. However, due to limited resources, the policy focuses

on the social aspect, government building houses for the community and providing social security funds, but less on industrial development. Nellis (2005) notes that although most African countries seek to expand on establishing SOEs, the continent lacks infrastructural development. Nellis (2005) further argues that the low performance of most African SOEs can be linked to or blamed on inadequate or unavailability of infrastructure. Therefore, the energy crisis can be blamed on the lack of infrastructural development in the continent. There are not enough power lines to distribute energy across various communities. While in countries where there are distribution lines, the power stations are not producing enough. In essence, infrastructure development should focus on more power stations so that SOEs can meet the demand and supply of energy (Kanwal, Khan and Rauf, 2020).

Kanwal et al., (2020) assert that Pakistan's infrastructure does not allow sufficient energy production. In addition to the inadequate and deteriorating infrastructure currently available in Pakistan, energy production is limited, and the energy demand is far greater than the supply. Kanwal et al., (2020) and Nellis (2005) agree that infrastructural development is essential to SOE development. Furthermore, Khan, Akhtar and Shah (2014) also allude that there may be other energy sources or other means to procure energy. The lack and inability to develop more infrastructure deter the development of SOEs, particularly those dealing with energy supply and demand (Rafique and Rehman, 2017).

Khan et al., (2014) further argue that Pakistan's energy production comes in many forms: electricity, gas, coal, hydro, thermal, natural gas, gasoline, petrol, diesel, solar and wind. However, the lack of proper infrastructural development inhibits this sector's ability to successfully harness the potential of these resources to adequately produce enough energy for everyone (Rafique and Rehman, 2017). Hence, the energy crisis and the lack of infrastructure are overlapping issues regarding the SOEs' growth and development.

3.4. The Role of SOE's in the Energy Sector: A Hindrance or Enabler of the Security of Supply?

The role of SOE in economic and social development should be to capacitate the state and foster economic growth (Fourie, 2014; Lin et al., 2020). Therefore, it can be noted that SOEs are expected to be enablers of economic growth. Fourie (2014) contends that, in most cases, SOEs are established to bring stability and create jobs within a

country, although these may have a certain amount of private ownership. SOEs are majority-owned by the government to provide the state with the advantage of decision-making within the entity to ensure these entities contribute to the national economy while taking care of the citizens' social needs (Lin et al., 2020). Fourie (2014) also notes that their role is mainly to provide the government with an opportunity to bring welfare to its people by providing jobs or subsidising people who use the entity's product. For instance, qualifying people will be entitled to a certain number of units for free when buying electricity.

Besides subsidising, revenue collection is essential to the government's agenda to ensure service delivery, external monetary investment, and funds for economic and infrastructural development (Fourie, 2015). Hence, SOEs are at the forefront of tax payment and revenue collection. The funds collected from these entities are then expanded to focus on other governmental mandates such as providing social grants, redirecting the funds towards creating employment, and ensuring service delivery, among other services (Fourie, 2014; Fourie, 2015). In addition, it is paramount that the government invest in these entities to depict clean governance in a state of good management and contribute to economic growth (Lin et al., 2020).

Therefore, corruption emanating from these entities because of selfish ambitions will likely decrease investors' confidence in the country (Abotsi, 2015). Thus, there is likely to be a conflict between the agent and the principal. Moreover, the agency theory provides that when there is an existing conflict between the manager and agent, it is likely that the entity will not perform well (Eisenhardt, 1989; Hall, 1998; Tan, 2014). The performance of these entities is measured through less corrupt activities and yielding good profits that contribute to government income.

3.5. Energy and the Economy

In the contemporary age, economic growth and development depend on factors such as international relations, continental integration, the ability to produce a scarce commodity, and provision, among other factors (Mabeza, 2019). Therefore, energy provision and economic growth are intertwined, as one affects the other. For instance, a country's ability to secure energy and provide for its citizens and the global community improves its global relations and economic growth (Holmberg and Erdemir, 2015). However, most nations have constant conflict because of the vast availability of oil as an energy

source. This conflict may be caused by a country's internal battles where elites seek to take captive of this energy source (Hawker, Bell and Gill, 2017). On another note, it may be external conflict because of super-powerful or first-world nations seeking to neo-colonise smaller ones with this commodity to direct who receives it (Hawker et al., 2017).

Hence, the cold war for energy is still a prominent issue affecting the international market system (Lordkipanidze, 2019). Concurring with Lordkipanidze (2019), Chandler (2018) explains that the price of oil barrels, petrol and paraffin are necessary as they directly or indirectly affect energy supply. Therefore, providing energy and having vast accessibility to energy sources such as oil, nuclear, and coal will place a country in an advantageous position to either develop its economy or be a key international player (Lordkipanidze, 2019).

Most key role players are wealthy nations with stable economies with something to offer the global spectrum. Therefore, for a smaller country to have control of energy sources such as those mentioned above will make the international system more open for them and participation in the global energy market easier (Hawker et al., 2017). Similarly, having a stable energy supply that exhibits stability and growth over time will encourage society to rely on the energy grid and buy directly from the supplier (Frederiks, Stenner and Hobman, 2015). Nasreen, Anwar, and Ozturk (2017) studied South Asian economies and found that having a stable energy provision also attracts investors into a country, and these investments will be directed to several industries which rely on energy. These industries include mining for underdeveloped nations, which, like South Africa, often rely on mining and agriculture for economic growth. Above all, energy availability is critical in economic development or underdevelopment (Stern, 2019). Stern (2019) concludes that countries with a stable energy provision can build new industrial infrastructures that contribute enormously to the economy.

Therefore, a stable energy supply and constant economic development are intertwined factors that affect social lives, industrial development, stability, and politics (Frederiks et al., 2015). Tantamount is

that corruption and mismanagement lead to the fall of SOEs and cause a crisis in energy provision that affects not only one part of the society but the vast majority. Nasreen et al., (2017) state that the international community's response to an economy's growth is also affected by the stability of the energy provision in the countries. Taking cognisance that South Africa has been downgraded several times by Moody's and other rating agencies like Standard Spoor, reflecting the views of discontent from international investors (Mugobo and Mutize, 2016). Conversely, literature review evidence indicates a comfortable relationship and link between energy security and economic growth. This implies that the energy future is moving in the correct direction and that by providing stable energy, the economy can grow and influence buyer behaviour, where many citizens buy electricity from the state-owned power utility.

5. CONCLUSION

This paper has given an account of the role of the principal-agent interests in SOEs related to energy security by defining and discussing the energy crises in Nigeria and South Africa. Thus, the paper discussed political intervention, degrading infrastructure, and the change to greenhouse gasses/green energy production in outlining the energy crisis of these countries. Furthermore, the paper discussed the role of SOEs in energy security and economic development. Henceforth, questioning the inability of the power-producing giants to provide sustainable solutions as they respond to the energy crisis.

Through the discussion in the paper, it can be deduced that a nexus exists between principals' and agents' interest in SOEs. Deducting from the agency theory and existing literature on principal-agent conflict, the two parties have a common interest. Having been influenced by factors such as degrading infrastructure, political intervention, the role of SOEs, the economy, and energy security, there is an interrelation between principal-agent interests in SOEs related to energy security.

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