Risk Management in Strategic Sourcing: An African Perspective

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***Abstract*— In this paper, we survey existing literature from scholarly journals published from 1980 to 2015 on the risks and mitigation factors of strategic sourcing in Africa. We also attend the same to a case study based on a large electrical power provider in South Africa. The paper identifies the various supply chain risks facing organisations conducting business in Africa, and where applicable, its mitigation strategies. The study reviewed literature found in numerous scholarly and peer-reviewed journals using *supply chain risk and risk mitigation* as the main search words to filter articles that discuss related topics. The preliminary finding was that there is generally an underrepresentation of Africa in supply chain management literature. It also found that studies discussing supply chain risk and mitigation issues in Africa have focused mainly on the challenges of sourcing in Africa. Another observation was that literature provides some limited insights on how supply chain management tools such as total quality management, negotiation and supplier selection, and just-in-time procurement may be implemented in African countries. However, the available literature manifests significant limitations in scope, both empirically and theoretically when compared to the vast amount of contributions from emerging economies in Asia as well as developed economies. The study thus demonstrates that an untapped opportunity exists for future research in supply chain risk management, which would develop an integrated framework for risk management in strategic sourcing in Africa.**

Keywords*: Strategic sourcing risk, developing countries, international sourcing, risk mitigation, supplier risk*

1. Introduction

Risk is classically defined as exposure to loss as a consequence of uncertainty. There are a variety of risks encountered during the procurement process. There are global risks and risks in every phase and stage during the process, with certain risks being of greater importance during each stage. Understanding the main categories of risk faced during the procurement process assists in risk assessment and planning practical management and operational measures that should be taken to mitigate those risks [32].

Supply chain trends such as offshore manufacturing, global outsourcing and lean sourcing continue to impact the supply chain. In fact, supply chain risk management (SCRM) has taken centre stage as a vital risk management priority [71]. Effective SCRM is essential to a successful business but remains a competence and capability that many enterprises have yet to develop. In some areas, both problems and practices are well defined. In others, problems are defined, but practices are developing [78]. When it comes to managing supply chains, South Africa is considered one of the leaders in Africa, yet the country still lags far behind the developed nations. This is evident in South Africa's performance as benchmarked against approximately 180 nations by organisations such as the World Bank (WB) and the International Monetary Fund (IMF) that consider supply chain management (SCM) components, which are planning, sourcing, manufacturing, delivery and return of goods and services [39].

At a time when global competition is intensifying, and supply chains are becoming longer and more complex, the likelihood of not achieving the desired supply chain (SC) performance increases, mainly due to the risk of SC failures [72]. Over the last decade, many companies have faced excessive supply chain challenges that stretched their capabilities to breaking point. Numerous natural disasters and huge economic swings have caused extreme challenges across supply chains. These challenges have not diminished. Supply chains, which once functioned almost on autopilot, face many dangers today in both global and domestic markets [24]. Africa's agricultural resources are the backbone of multibillion-dollar industries and support the businesses of many global

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companies. The continent is a large producer of crops such as tea, coffee, chocolate, cotton and leather [52]. However, it continues to suffer from low levels of agricultural productivity and is constantly affected by famines. A large part of the continent's inability to feed itself and stimulate rural entrepreneurship can be explained by poor infrastructure in areas such as transportation, energy, irrigation, and telecommunications [56].

While there has been extensive research performed that discusses global risks in supply chains, it has also been noted that a lion's share of the published academic research has been dominated by issues in the advanced economies of North America, Europe and the emerging economies of Southeast Asia with limited data directed to Africa [80]. The net import is that researchers are yet to understand the obstacles and potential of sourcing from Africa and how the business environment and institutions on the continent influence the context of sourcing activities and outcomes. There is much to be discovered and understood about how managerial and firm capabilities in Sub-Saharan Africa impacts on sourcing activities such as knowledge transfer in supplier development and sourcing outcomes in terms of quality and flexibility. Further, the lack of more evenly spread international representation of research data is likely to have adverse effects on current knowledge and understanding of various phenomena within logistics management and sourcing [80]. As a result, managers in Africa lack adequate operating tools and guidance on how to manage their supply chains [15]. For example, a survey of procurement managers found that they have selected regions for low-cost outsourcing based on both specific measures and individual and group perceptions of the region, whether or not these perceptions are correct [48].

This paper attempts to address the above literature gaps by studying strategic sourcing risks and the mitigation thereof in the African context. To achieve this objective, the study examined the risks in different parts of Africa and considered the different mitigation factors employed by various companies as well as governments. It found that there is limited research that has specifically studied the African continent in terms of strategic sourcing risks.

Furthermore, the analysis implies that supply chain theorists are so far insensitive to context, considering the geocentrism of scholarly journals [79]. It has been argued that in the process of testing (what, how and why) in various settings, theorists can discover the inherent limiting conditions of theories [89]. Thus, the absence of this breadth of empirical evidence in supply chain literature suggests that the foreknowledge of all the possible limitations on the applicability of supply chain theories is in doubt.

2. An Overview of Strategic Sourcing and Risk Management

Strategic sourcing includes a wide range of activities such as creating an overall strategy for sourcing, evaluating and selecting suppliers, procuring materials/services and managing supplier relationships [5]. It is increasingly perceived to be the business capability of firms. Sourcing, if properly structured, can effectively combine the core competencies of a given firm with the skills and capabilities of its suppliers. Sourcing decisions are vital for any organisation that wants to leverage on its core competencies and outsource other activities in order to gain and retain competitiveness [34]. Unsurprisingly therefore, since the mid-1980s, the strategic role to the purchasing function has received considerable attention in academic and trade journals as well as in the popular press [13]. Given the increased cost of doing business in developing countries arising out of uncertainty, inefficiencies, teleological orientations and transaction costs in government departments, national government design and implement formal laws, rules and regulations structuring human behaviour and actions [57].

Research suggests that companies excelling in strategic sourcing saved almost 10 to 20 times as often as it costs to operate their sourcing operations and the effort required to reduce 10 per cent of the sourcing cost is considerably less than gaining the similar amount of revenue [19]. Strategic sourcing includes a wide range of activities, namely creating an overall strategy for sourcing, evaluating and selecting suppliers, procuring materials/services and managing supplier relationships [5]. The importance of strategic sourcing has increased over time [38] and has been projected to increase in the future [8].

Further, the strategic importance is prevalent in both the manufacturing and service industries[49]. As strategic sourcing continues to increase in importance in Sub-Saharan Africa, it is important for researchers to continue to enhance the extant body of knowledge to offer theoretical and pragmatic insights [74].

One of the major risks in strategic sourcing is to deal with the uncertainty associated with suppliers. In that regard, strategic sourcing risk under uncertainty demands to empower the suppliers to increase their output when one or more suppliers fail to deliver. It proactively prepares the firm to respond to the probability of supplier failure, the cost of supplier failure, and to the output constraints of the suppliers [3; 15; 18]. Fluctuations in the currency rates, high variation of time spent in transit, including transportation time and port clearance, forecasting error, quality differences across multiple sites, products causing safety hazards are being identified as the sources of sourcing risk [46].

Unfortunately, academic literature on strategic sourcing within the African context is scarce. The major reasons cited for the lack of research pertaining to Africa are the lower degree of global trade involvement relative to other regions; the limited presence of MNEs compared with other regions [36;26]; ineffectiveness of the region in producing worldwide business researchers [80;26]; difficulty of collecting primary data on the region; and unreliable databases [36]. Additionally, while some empirical literature has rated Africa as the highest risk location for sourcing activities [14] the lack of first-hand experience of poor performance may be driving the higher perceived risk of sourcing products and services from Africa, thus resulting in managers' perceptions of location-related characteristics, which are biased by regional stereotypes [14].

Notwithstanding the reasons for the lack of this research, as espoused in [53], strategic sourcing issues discussing supplier selection criteria from Sub-Saharan Africa, evaluating suppliers and developing suppliers from this region, and the impact of long-term supplier's relationships on sourcing outcomes would benefit both research and practice. For instance, there is a belief that supplier selection criteria within developed countries differ from selection criteria for developing countries' suppliers. The supplier selection criteria of multinationals or SMEs from advanced economies when entering into South East-Asia seem to reflect the institutional context of this region [35]. Higher risks of operating throughout the region could also be turned into better opportunities if properly managed. For example, most of the challenges of sourcing from Sub-Saharan Africa may be nation-specific, location specific and product specific, thus the need for more extensive country-specific studies on international sourcing from Africa [54]. The exposure of research and studies to new experimental contexts would enhance the scholarly journals on purchasing and supply chains [64]. Studying sourcing issues within the Sub-Saharan Africa region would provide insights into how multinationals to design and implement their regional supply chains. This is pertinent, owing to the empirical evidence suggesting that supply chains are territorial and geographical supply chains have positive performance implications.

Risk management has its origins in the insurance industry [12]. In practice, risk theory can be identified with insurance risk theory or with probability theory applied to insurance risk problems [12]. Probability theory, thus, provided insurance theory with a powerful instrument for exact definitions and risk analysis [12]. Considerable developments as to the use of probability theory in the prediction of expected loss and pure [event] risk in insurance theory have been made by actuaries and insurance theoreticians, mainly in the life insurance industry [84]. Thus, risk may be defined as the uncertainty surrounding an event and outcome in a specific situation [84]

Risk is everywhere, especially in today's global economy where natural disasters, political turmoil, supplier shortages, and other unpredictable events can significantly disrupt a company if it is not prepared for them. As they continue to expand their operations outside of domestic markets, small and mid-sized companies are particularly vulnerable to unforeseen risks. While larger enterprises have been focused on risk mitigation for years, many smaller companies have not paid as close attention to the myriad potential threats to their operations [10]. Global supply chains are riskier than domestic supply chains due to numerous links interconnecting a wide network of firms. These links are prone to disruptions, bankruptcies, breakdowns, macroeconomic and political changes, and disasters leading to higher risks that make risk management difficult [72].

3. Strategic Risk Sourcing and Mitigation

The degree of strategic sourcing risk faced by manufacturers, distributors and retailers has risen dramatically in the past three years and is only expected to grow with the globalisation of supply chains. Commensurate with that rise in risk prevalence has been a significant increase in the attention paid by executives to supply chain risks for large enterprises. For large companies, especially those with global operations, the supply chain is an integral part of their growth strategy and ability to differentiate themselves from competitors. Companies with more sophisticated supply chain capabilities excel in a number of areas, such as supply chain visibility, cost control, customer service excellence and significant collaboration and idea sharing across all levels within the organisation [10]. More specifically, Supply Chain Risk Management (SCRM) focuses on supply chain risk phenomena and provides models for the analysis of several types of supply chain risks that occur in both supply and demand sides of the supply chains. The purpose of SCRM is to recognise the potential supply chain uncertainties and prevent the uncertainties with appropriate action [88].

3.1 Supply risk factors

Supply risk sources are the uncertainties associated with suppliers, which include physical delivery (or non-delivery) as well as the relationship between the supplier and operator, or any risk associated with inbound logistics and product (or raw material) supply [79]. The sourcing of most raw materials in Africa is a challenge due to poor infrastructure, erratic weather conditions and limited use of technology that affects the quality and quantity of produce. Global sourcing of business services is growing through a variety of important business and policy challenges (and opportunities) in both developed and emerging economies [73]. Since 1999, prices for Africa's leading commodity exports have increased noticeably. The price rise was engendered largely by the rapid growth in Asia's developing countries, notably China and India [11].

Disruption to supply chains has increased recently on four levels: 1) threat to oil supply in the Middle East and North Africa at the mouth of the Gulf of Oman; 2) threats to supply lines in general through strikes and demonstrations as countries cut back on government spending; 3) disruption to the global automotive industry because of the situation in Japan; and 4) increased piracy. These threats will create extra pressure to simplify production processes through innovation, shortening supply chains through repositioning factories, and moving away from reliance on a single supplier [22]. Beyond the common, low-level events that occur across the supply chain regularly, fewer frequent, but high-impact incidents create further exposure [81].

Nonetheless, there is yet much more to be known, discovered and understood about how managerial and firm capabilities in Sub-Saharan Africa impact on sourcing activities such as knowledge transfer in supplier development and sourcing outcomes in terms of quality and flexibility (53). As a result, managers lack adequate operating tools and guidance on how to manage their strategic sourcing processes in Africa [16].

Supply Chain Risks in South Africa are similar to those in developed economies, but certain risks are on average much higher and resemble the risk profiles of developing countries. Within the context of South Africa, protracted labour disputes feature as one of the major risks to supply chains, being 2.5 times higher than the world average [68]. Comparatively, the extended loss of electricity is a risk that is five times higher than the world average [68]. Along with the greater distances and longer lead times that result, complexity increases while more regulatory and compliance issues pose greater operational challenges [81]. The tenets of lean production methods and just-in-time manufacturing and delivery have led to the paring and honing of supply chains into finely tuned models of efficiency. However, this approach calls to attention an inverse relationship between efficiency and risk. For example, single-source supplier strategies can result in favourable volume rates and excellent service. However, if that supplier has a major disruption in its supply chain, its customers are left completely vulnerable. The answer is not to disregard the efficiencies of such practices, of course, but companies must be able to understand, profile, and manage the attendant risks – for example, weighing the expense of duplicate machinery against the possibility of lost production [81].

Finally, the lack of trust is one of the major factors that contribute to supply chain risks [75]. If an organisation wishes to establish its trustworthiness, then it must first find ways for the other organisation to perceive them as trustworthy of demonstrating their commitment to the relationship [67]. The entire supply chain operation would be constrained if people cannot be trusted to do their jobs properly [45]. Unfortunately, this aspect of supply chain risk has not been studied in the African context.

3.2. Process risk factors

Processes and internal controls can either amplify or absorb the effect of risks in the supply chain and refer to the design and implementation of processes within and between the entities in the supply chain [33]. To minimise the risk of holding inventory, many retailers are beginning to request frequent, small replenishment shipments based on real-time sales information provided by the information technologies of bar coding and EDI (electronic data interchange) [12]. Lean retailing makes manufacturing firms that utilise a global sourcing strategy face the dilemma of balancing the benefits of cost-effectiveness with the benefits of agility, the inherent limitations of offshore production. Manufacturing firms have long leveraged outsourcing and off shoring; low-value services such as janitorial work have been outsourced for quite some time. A variety of recent developments, such as innovations in information technology (IT) and newer managerial practices have enabled unbundling of production and consumption of these services [73]. It is further noted that as manufacturer's face demand uncertainty and new retailing practices, such as filling frequent, small replenishment orders, agility has become an important competitive tool [12]. To minimise the cost/agility trade-off, many firms are combining global and domestic sourcing. Ref [25] discovered, using an interpretive case study-based methodology; that small manufacturing companies predominantly apply similar risk management practices that are defensive. This generally encompasses risk elimination practices, including knowledge protection and local sourcing, in combination with relational practices such as fairness, loyalty, and the seeking of responsive, dependable and like-minded suppliers. The approach is, thus, optimised to simultaneously reduce supply risks, resources and time consumption. Within the African context, sourcing of raw materials is a challenge due to poor infrastructure in West Africa, as well as erratic weather conditions and limited use of technology that affects the quality and quantity of produce [52].

The outsourcing of key business processes has also been identified as one of the process risks. There are two types of international sourcing: intra-firm sourcing and outsourcing [37]. Intra-firm sourcing refers to the procuring part or the whole of a firm's products or services within their subsidiaries located in foreign markets. International outsourcing refers to the procuring part or the whole of a firm's products or services (either on a strategic partnership or arm's length relationship) from other companies abroad [37]. Outsourcing can free up assets and reduce costs in the immediate financial period [65]. That notion was largely adopted by developed-country firms that, in their own countries and in their international operations, preferred to internalise the activities needed for production [6]. With the increase in international outsourcing, the outsourcing debate has moved from what and why to outsource to where and when to outsource [30]. Ref [74] emphasises the increasing strategic importance of sourcing for the competitiveness of companies. However, vertical integration ties up capital and reduces the flexibility of the supply chain to react to environmental changes. There is a growing trend towards the supply and demand side disintegration, with firms focusing more on core competencies, and outsourcing non-critical activities. For example, in the global semiconductor industry, there is a vertical separation of design, manufacture, equipment production and process development [45]. the proper strategic questions to be evaluated in this case include: is it optimal to outsource production to low wage economies as risks start to outweigh the benefits of cheap labour costs? For example, it might make sense to centralise production in areas closer to the main market of the output. The shortening of supply chains will also be encouraged by increased transportation costs as the price of oil rises, and by high levels of currency volatility (which create additional risks related to cross-border activity) [22].

Companies that have not yet begun to enact risk management processes, a good first step is to gather as much data as possible on current business operations, including data about suppliers, customers, and the organisation's production and fulfilment departments. With this information, companies can begin to establish a baseline risk profile [81]. The chocolate industry, for instance, had in the past received blame for the use of child labour in West African cocoa fields. In Ethiopia, concerns regarding the use of cotton grown on land where locals have been forcibly evicted, have prompted European fashion brands to pay closer attention to their Ethiopian supply chains [52].

Today, many opportunities (risks) arise due to changes in business practices. A supply chain network can never be risk-free; that is, one cannot eradicate the chance of an undesirable/desirable event occurring. As a trading partner needs [internal or external] change, the redesigned process (with mitigated risk) must be improved. Therefore, embedding continuous improvements to the redesigned process is required. However, to manage risk effectively, that is monitoring and controlling it, the iterative steps of identifying, assessing, planning solutions, and conducting failure mode and effect analysis should be followed [77].

3.3. Demand risk factors

Demand risk sources arise from the uncertainties associated with user demand of products and the fluctuation of markets according to consumer demand; that is, any risk associated with outbound logistics flows and product demand [79]. Potential disruptions can be caused by fluctuations in customer demands, financial factors such as exchange rates and market pressures, and environmental and geopolitical factors such as weather, natural disasters, political instability, and labour action [81]. Within the context of Africa, a major consequence of South Africa's strong economic growth since the democratic dispensation of 1994 is the rapid increase in domestic demand for oil energy. With small amounts of proven oil reserves, the rise in oil demand as an energy source has resulted in South Africa's growing dependence on external sources for its domestic crude oil needs. Accordingly, a comprehensive understanding of oil import security risks can serve as a vital guide in formulating any energy policy framework(s) aimed at alleviating the impact of such risks [86].

Two important trends make the quantification of the risks associated with South Africa's crude oil imports necessary. First, the country's demand for crude oil has increased since 1994, due to strong expansions in the transportation and mining sectors. Secondly, South Africa is highly dependent on oil import supplies from countries located in the Middle East and other parts of Africa, two regions prone to a high degree of geopolitical instability [4]. Trade data from the South African Revenue Service show that South Africa's supplies of crude oil imports are dominated by a small number of countries [76].

Market sentiment moving against emerging markets will also raise the risk for supply chains. Fears of bursting asset bubbles and rising interest rates will put companies in such countries at greater risk of profit deterioration and cash-flow problems and will eventually lead to higher bankruptcies. This also impacts negatively on profit, cash flows and payments' performance across businesses, thereby affecting their ability to meet orders [22].

Consumers develop an impression of an organisation in different ways. It may be from their individual experiences with the firm's people [41], their perceptions of how the firm manages its assets or how it may interact with the local community [17]. Essentially, each consumer forms impressions through a multitude of different avenues and when considered collectively with other stakeholders results in a reputation. From a distance, stakeholders can then be mapped on a network and separated into definable groups [1]. Companies can follow the same process in examining the demand side of the equation. Looking at its outbound supply chain, a company can determine whether it is overly dependent on a small number of customers. The dangers of such a heavily concentrated customer base were revealed on a large scale during the tragedy of the Mozambican floods of 2001 [81].

Companies can also minimise inventory risks by working with a highly responsive supplier [20]. Supply chain agility is a key to inventory reduction, adapting to market variations more efficiently [20].

The leaner and more integrated supply chains that have the more likely uncertainties, dynamics and accidents in one link affect the other links in the chain. Companies' obsession with speed and costs also causes supply chains to break down, particularly during the launch of new products [40].

Sourcing within supply chains is critically dependent on political and economic stability in the primary regions of supply and demand. In that context, the recent socio-political history of Africa has considerably added to supply chain uncertainty. The political uprising in Libya at the beginning of 2011 has severely affected the country's pipeline export to Europe. In general, the European Union imports 10 billion cubic meters (bcm) annually from Libya and another 54 bcm from Algeria, which together amounts to about 13% of EU gas consumption and 28% of non-European imports. However, Europe's dependence on North Africa differs significantly between countries and is higher for Southern European countries. The long-term uncertainty arising from political instability is also an issue; the immediate consequences of the situation in North Africa fall into the short-term supply security category [43].

3.4 Market risk factors

Both hard and soft measures determine industrial procurement managers' global source location decisions. A typical hard measure for sourcing decisions is price, while the typical soft measures include IP protection, delivery dependability, etc. of potential locations [49]. Due to the collaborative and integrative nature of SCM, challenges faced by a single company, such as inventory stock-outs or a supplier's bankruptcy, are likely to impact other parties of the chain. To reduce the impact of materialised risks on the chain, the monitoring of potential risks and the development of risk mitigation plans are required as part of a supply chain-wide risk management approach, which should ideally be a coordinated action [82].

Because of its decreasing indigenous production, the European natural-gas market is increasingly dependent on supplies from non-European countries with different political systems. Therefore, the types of security for European natural-gas supplies in economic terms are, firstly, the very long-term view of the range of reserves and resources [21], the mid-term availability of suppliers to the European market [31], their bargaining power and aspects of global geopolitical security of supply [85] and last the analysis of short-term disruptions due to political disputes such as between Russia and transit countries like Ukraine [9;27; 51]. Although the long-term uncertainty arising from political instability is also an issue, the immediate consequences, during 2011 of the situation in North Africa fall into the short-term supply security category [43]. This type of risk has rarely been discussed in academic literature in the past as most literature focuses on the security of supply in general or the risks associated with transits of Russian gas. There are some contributions that address North Africa in terms of the security of natural gas supplies. Algeria' role as a major supplier is, for instance, analysed within different frameworks [43].

Higher commodity prices, along with higher currency and commodity price volatility, have combined with challenging economic circumstances to make for difficult economics within many industries today [28]. These factors can introduce risk to both top-line revenue and the cost structure and wreak havoc on net cash flow and profitability. Both sourcing and hedging will soon be (if they are not already) near the top of the strategic agenda for many companies. A growing number of corporate management have expressed interest in an even more systematic approach to risk management [28].

Market sentiment that moves against emerging markets will also raise the risk in supply chains. Fears of bursting asset bubbles and rising interest rates will put companies in such countries at greater risk of profit deterioration and cash-flow problems and will eventually lead to higher bankruptcies. This also impacts negatively on profit, cash flows and payments' performance across businesses, thereby affecting their ability to meet orders [22].

A survey conducted by SAPICS during 2011 has found that both employee theft and executive misdeeds are four times higher, and disease/infestation, 2.3 times higher; these factors are particularly true in the African context. Seven types of risk were identified by the survey, including 'internal operations disruptions', 'people not available' and 'cannot ship or deliver products', all of which have a bearing within labour disputes [68].

A more insidious risk is posed by the threat of intentional disruptions caused by criminals and terrorists. These risks require special attention because of their adaptive nature: unlike random breakdowns, intentional disruptions can be targeted toward perceived soft spots and weaknesses in the extended supply chain [81].

The security or lack thereof in Africa can have various effects on the markets in the countries which are doing business with them. The political uprising in Libya of 2011 has severely affected the country's pipeline exports. [43]. In recent months, it has become apparent that international maritime forces have had relative success in policing the Gulf of Aden, which lies directly off the coast of Somalia, and which was the focus for the majority of pirate attacks in 2008 and 2009 [22]. As a result of these attacks, shipping companies are facing increased insurance and security costs, which have to be passed on to customers in some form [22].

One of the biggest challenges for multinationals is that they rely on intermediaries to source raw materials in emerging markets [52]. That means that the multinationals dealing in Africa are less familiar with what is happening on the ground, and that is a risk. In the textile industry in West Africa, for instance, there have been issues like factories not adhering to labour practices, even burning down because safety precautions weren't met [52]. Although the information and communication technology revolution of the 1990s and the rapid proliferation of internet has to a large extent levelled the playing field, Small Medium Enterprises [SMEs] are finding that these new markets and commercial opportunities also generate a new dimension of uncertainties and risks in the supply chains [66].

Risk mitigation strategies strive to protect supply chains from risks and their negative effects. Many researchers and practitioners distinguish between proactive or preventive and reactive risk mitigation strategies [29]. Proactive risk mitigation strategies are concerned with preventing risk. Proactive risk management is absolutely vital for every organisation in today's fast-moving global marketplace. As the recent worldwide financial crisis demonstrated, companies that fail to anticipate and mitigate their risks properly are endangering their business assets, the jobs of their employees, and even their existence [42].

Raising long-term debt and equity to finance infrastructure projects in Africa is a challenge, and an even greater one, now that the financial crisis has diminished inflows to the continent as well as the appetite for risk among many private financiers. For the private sector, long lead times and high capital costs often result in low financial returns on investment in infrastructure projects. Low returns when balanced against risk considerations can hinder the implementation of projects across all sectors. When essential infrastructure and customer affordability are to be taken into account, the private sector is often deterred from investing due to high-levels of actual or perceived risks [70].

In contrast, reactive risk mitigation strategies prepare for the occurrence of a risk event to alleviate its economic impact. Risk evaluation and risk mitigation, as a hedge towards additional private financing in African infrastructure, might be beneficial for several kinds of stakeholders [20; 59]. A major accident from an Ericsson perspective was a fire on 18 March 2000 in a very small production cell (small as a conference room for ten people) at a sub-supplier's plant in Albuquerque, New Mexico (USA). The ten-minute fire was an effect of a lightning bolt hitting an electric line in New Mexico, causing power fluctuations throughout the state. The problem was that when the power was out, there was no spare diesel motor to supply the fans with power, so the fans stopped. In the spring of 2001, when the annual report from Ericsson was announced, a major loss of about $400 million was indicated, primarily due to gaps in the supply of radio-frequency chips from this supplier. The reason was that the fire occurred in one of the plant's "clean rooms", where absolutely no dust is tolerated. The accident made Ericsson realise the importance of not only understanding and managing risks internally but also trying to better analyse, assess and manage risk along the supply chain and to take immediate action when incidents are indicated [55].

In summary, each risk type requires its specific risk mitigation strategy, which must be aligned with its risk sources and drivers and the company's contextual environment [20; 59].

Environmental risk sources comprise any external uncertainties arising from the supply chain such as disruptions caused by political (e.g. fuel crisis) natural (e.g. foot and mouth outbreak, fire, earthquake) or social (e.g. terrorist attacks) uncertainties [33]. Risks to a company's extended supply chain are any potential disruptions that can be caused by fluctuations in customer demand, financial factors such as exchange rates and market pressures. Environmental and geopolitical factors such as weather, natural disasters, political instability, and union action are also known as risk contributors [81]. Industrial procurement managers need to continually re-evaluate locations in order to shift sourcing from one region to another as the opportunity arises. There is evidence that sourcing managers have responded with a continual shift toward so-called "low-cost country sourcing" (LCCS). LCCS, however, does not mean that cost is the only factor considered in supplier and location selection decisions. [83].

Thus far, we conclude that researchers are yet to understand the obstacles to and the potential of sourcing from Africa and how the business environment and institutions in the continent influence the context of sourcing activities and outcomes [53]. A multi-attribute, weighted approach usually results in a better location selection decision than basing the decision on a single attribute of say, labour cost alone [15]. Changing climatic conditions is causing significant impacts on livelihoods, health, food security, economic opportunities and the survival of humanity, especially in developing countries. The poorest populations who are mainly rural-based will be seriously and disproportionately affected by the changing climate [58]. As the East African region strives to achieve sustainable development, national governments are grappling with difficult trade-offs and opportunity costs related to climate change [44].

With regards to South Africa, the country has hit several key economic benchmarks demonstrating its scope for trajectory in the past decade. Despite this major step in its development, South Africa still faces significant challenges, including the heavy burden of the HIV/AIDS epidemic, persisting poverty, and complicated racial issues [62]. This epidemic alone has been identified as one of the risks in the supply chain due to the number of people employed during its various stages.

Recent evidence suggests that all other things being equal, high Asian tariff rates on some African products may be discouraging their export to Asian countries. High Indian tariffs on agricultural products are of particular concern because they affect products in which African countries have growth potential. China is a relatively liberalised market, with zero or close to zero tariffs on 45 per cent of its imports. It plans to further lower its tariffs and bring about lower dispersion in the structure of tariffs by the end of 2007 [11].

A variety of strategic, operational and geopolitical risks emerge as companies have been crossing firms and national boundaries for sourcing business services. Ensuring protection of consumer privacy, firms' intellectual property and trade secrets become even more critical – any breach, not only risks business operations but even the existence of the firm. While operational risks can lead to service disruptions and a drop in its quality, certain risks such as poaching, shirking and opportunistic renegotiation have strategic implications. Offshoring introduces new geopolitical risks such as exchange rate and sovereign [73].

One of the concerns for sourcing in Africa is getting things delivered in general, getting things delivered on time, and having a sense of quality control. Companies can mitigate supply chain risks by offering better pay for farmers and workers to encourage efficiency [52]. Multinationals should also strive to build closer ties with its producers in emerging markets, which would help strengthen producer loyalty [52].

Accounting for about 35% of global energy demand, crude oil forms the major fuel source for the transport sector of most countries is a significant source of energy for firms in the manufacturing sector, and is a vital raw material for several industries such as those in petrochemicals [4]. Security of energy supplies takes on even more relevance when one considers that South Africa is Africa's largest consumer of primary energy and accounts for almost a quarter of total oil consumed in the continent [4]. With petroleum reserves along its western and southern coast-lines estimated at a mere 16 million barrels, South Africa remains heavily reliant on large imports of crude oil to meet its growing demand for liquid fuels [Department of Mineral and Energy [DME], 1998].

The lowering of industrial countries' multilateral tariff and nontariff barriers to Africa's products should increase its exports substantially. But African countries also face such barriers in the south, including in Asia's developing countries. And some African countries also have high tariffs and nontariff barriers that restrict trade flows, in some cases imparting a bias against Africa's exports [11].

Across sub-Saharan Africa, the presence of foreign large-scale mining companies is increasing. This is in part a result of depleting resources in countries such as Canada, United States and Australia, and in part from a more favourable national mine investment climate in several mineral-rich African countries. [61]. Mining companies are facing an increasingly complex environment globally and in Africa, with a shift in investment drivers. Times are changing, forcing mining companies to reassess their strategies in order to play the new game successfully and explore emerging mining markets [63]. Regulatory requirements aimed at increasing the 'take' of governments, a shortage of skilled labour, generally rising costs, weak infrastructure, pervasive corruption and increased stakeholder expectations are common features of mining in Africa. Resource nationalisation has always been another risk for mining companies, and the issue is growing as governments look for a bigger share of resource wealth to pay off their growing debts and respond to the demands of their citizens. However, there are enormous opportunities and potential for companies who focus on Africa and are willing players in the new game [63].

4. Eskom: A Case Study in South Africa

This section highlights the findings from a case study conducted on the subject of strategic sourcing risks within the South African context on Eskom Holdings Limited SOC (Eskom), a South African electricity public utility, established in 1923 as the Electricity Supply Commission (ESCOM) by the government of South Africa in terms of the Electricity Act (1922). It generates approximately 95% of the electricity used in South Africa and about 45% of the electricity used in Africa. Eskom generates, transmits and distributes electricity to industrial, mining, commercial, agricultural and residential customers and redistributors. The utility is the greatest producer of electricity in Africa, is among the leading seven utilities around the world in terms of generation capacity and the top nine in terms of sales. Coal-fired baseload power stations make up the largest portion of Eskom's plant mix [Eskom Holdings Ltd, 2016]. These stations use coal as their energy source and operate 24 hours a day to meet the demand for electricity. Eskom's Generation Division has 13 coal-fired power stations with an installed capacity of 37 745 MW. Africa's only nuclear power station, Koeberg, is also a base load station, with an installed capacity of 1 910 MW of power. The generation mix also includes two conventional hydroelectric power stations and two hydro pumped storage schemes with a capacity of 2000 MW. The last of the present mix is four quick reaction gas turbine power stations with an installed capacity of 2 426 MW [54].

The supply-chain department in Eskom is also known as Group Commercial (GC) and has close to 500 practitioners, middle and senior managers. The GC is divided into three procurement departments, namely strategic sourcing, project sourcing and tactical procurement [Eskom Holdings Ltd, 2016]. Part of the GC team providing industry added services is the Supplier Development and Localisation (SD&L), Business Enablement (BE) and Services (HR, Finance and Treasury) [47].

South Africa has been on tight power supply since load shedding during February 2008, which has cost the economy billions as demand outstripped supply. Eskom did not build new power generation capacity in more than a decade to 2005. A huge repository of institutional memory and expertise has been stripped out of Eskom over a relatively short period. Starting with the resignations of previous Chief Financial Officer Paul O'Flaherty and former Chief Executive Officer Brian Dames in 2013, the list includes about a dozen departures at executive committee or senior general management level, plus several more at the core management level. To install investors' confidence Eskom must stay relevant to the market, investors will only invest in the country where there is stability in the top management of companies such as Eskom. The development of skills is very critical for a company like Eskom; the best way to learn is from people who are in the industry and the company. The transfer of skills can be hampered, especially when career paths have been developed for the new breed of leadership when the top management turnover is so high.

According to the Cape Chamber of Commerce and Industry, the only good thing about the new round of rolling blackouts is that it has made the public aware of the extent of the Eskom calamity. The chairman of the chamber's industrial focus portfolio committee mentioned that "For the last few years, it has been the mines and industry that have been forced to cut their power usage so that the lights could be kept on for the rest of us." The chamber was reacting to the load shedding started by Eskom on 28 February 2014 after heavy rains in Mpumalanga contaminated its coal supplies. After the rolling blackouts of 2007-08, Eskom undertook to build up its stockpile so that it had reserves to last more than a month, enough to see it through any "rainy season". This once again shows that Eskom does not have a matured way to forecast future demand. This leads to the argument about the risks and risk management in Eskom. As soon as there is an active risk register the blackouts will become smoother and much shorter.

One of the biggest levers Eskom has to its disposal is through its total procurement volumes and thus its negotiating power. With the involvement of skilled, strategic suppliers, it can facilitate the constructive development of local suppliers over time. This, unfortunately, is not currently executed with any success. Currently, Eskom is struggling to analyse procurement data to provide the relevant benchmarks and trends required for their strategies. Research has shown that data analytics provides many advantages and efficiencies to a present and future process. Results from data analytics can inform procurement to adjust or confirm existing strategies and approaches before going into the market. The lack of data makes it difficult or sometimes not even possible to perform cost comparisons for commodities that have repetitively been purchased over a number of years. With the volume and value of transactions being transacted, Eskom should be investing much more in research and analytics.

Eskom should ensure that the requirements are well understood. For example, if Eskom wishes to secure a boiler, the requirements from the user (internal engineer) must be properly understood by the procurement practitioners. The next concern to ask is, "did the procurement practitioner get the opportunity to understand the requirement?" Opportunities must be created for the practitioner, which can be in a meeting or a one-on-one situation with the cross-functional team or the leading engineer. The emphasis is currently on the constrained economic environment in South Africa and other African countries. This increases the importing of goods from countries who are performing better in the buyers' market and who manage resources better. A crucial resource for the manufacturing process using raw material is the vital scarcity of water that is extremely likely to impact adversely on strategic sourcing.

Eskom is a state-owned company (SOC), and it is well known that the South African government utilises the state-owned companies to drive government objectives. These become legislated, and the SOC must adhere to them. The nature of strategic sourcing is for long-term commitment. Such commitments are based on the landscape when the agreement is made. During the period of the agreement, government objectives and legislation change, putting the agreements at risk. During the presidency of Thabo Mbeki from 1999 to 2008, South Africa's health minister urged patients to avoid drug therapies from the West and to rely instead on unsupported remedies including garlic and beetroot to help treat AIDS [60]. The outlook has changed since President Jacob Zuma's election in 2009; the treatment is now freely available, and the denial has since reduced. In this case, the risks happen when the political head gets moved to another department or removed from office. Political risks are often measured on the leadership of the specific country.

Many companies such as Eskom are required to import foreign goods for their capital expenditure (CAPEX) projects as well as for stock. Management of the forex transactions linked to these activities is critical. Poor management of forex can lead to the downfall of a company. It is critical to have risk mitigation plans in place to manage foreign currency swings as they will impact the business. It is expected from a company the size of Eskom to work closely to the National Treasury to ensure that the management and purchasing of foreign currency are controlled in line with the South African Reserve Bank's (SARB) policies.

Most of the African countries have fallen behind in the maintaining as well as upgrading of their ageing infrastructure. The reasons vary from country to country as well as from city to city. Mostacademics are of the opinion that Africa depends on everybody but themselves to improve the ageing infrastructure. The importations of goods are the order of the day in Africa; hence African based companies carry most of the risks involved. Infrastructure, when developed and produced within the country of need is much cheaper than the importing. World-class strategic sourcing methods must be applied by the African countries when importing from either Asia or Europe. The policies applied by some African countries allow for imported goods to adhere to the standards and classifications of the manufacturing countries, mainly those from Asia and Europe. Policies and procedures are more flexible when importing from these regions. This practice creates risk on its own as products are imported to African countries without testing their purpose or use [2]. Relying on one supplier or a specific pool of suppliers from a certain block (e.g. Asia, East Europe, etc.) has crippled strategic sourcing and creates an atmosphere of non-competitiveness. The procurement process in this instance will be predetermined and eliminate competition from other developing countries. South Africa is not a major importer partner to Nigeria due to the relationship between the two governments. A change in the relationship would see South Africa become a bigger import partner rather than China, and vice versa. African countries are prepared to wait longer for imported goods from other parts of the world rather than speedy delivery from countries of the continent. This obviously comes at a risk/cost which is picked up by the strategic sourcing process but could not be avoided by the importing party. This risk/cost is always passed to the consumers of the item.

Sourcing of products from international sources by big firms in Africa takes place without proper consultation of the strategic sourcing function. This also happens with the signing of Memorandums of Understanding between African nations and their Asian or European counterparts. In some instances what might look like business deals can easily become a dumping site deal. Africa might be under the impression that the deals to be signed are investing or empowering can be nothing but a paper exercise for the continent. Many agricultural deals have been signed between Africa and the USA, but as soon as the African state has transgressed, sometimes without proper proof, the government suspends further relations or dealings with the African state [7].

Strategic sourcing can be used to provide a soft landing for businesses in terms of mitigating all the risks that might form part of the value chain. Risk mitigation is part of strategic thinking and sits very well in the strategic sourcing environment. Evolving economies in Africa make use of strategic sourcing as a tool to procure all its products from strategic partner countries. Strategic sourcing resources (manpower) are imported by some African countries to form part of the national army and to procure weapons for future use in either combats or wars. Hence, some countries have accredited military training providers to issue supply chain related qualifications. The reason for this is that strategic sourcing is realistic and performs in the space of all disciplines, adhering to the processes and procedures with ease. The decisions taken are well-informed and in most instances are collective rather than isolated decisions.

Dealing with processes in the supply chain or procurement of items has become one of the steps in strategic sourcing. Applying the following can assist firms with the applications of risk mitigation:

- know the process of the supplier;
- do not combat risk on a common basis;
- learning from previous experience;

- choice the best guarded and quickest route, where possible;
- make use of reliable transport methods;
- choose a reasonable insurance cover, and
- keep contact with the supplying firm until receipt of items

Known Southern African utilities are making use of strategic sourcing to procure items identified as strategic from all over the world with great success. This has put them in direct competition with suppliers from the developed countries, because of the application of world-class methodologies. A good example of methodologies previously only used by the developed countries is the purchasing of transformers (any size) which specification is now generic and open in the market. This encourages competition and reduces the risks mentioned in the study. Suppliers now realise that it is not only the price that matters but it also goes with absorbing the risk and sharing it. It is not what the suppliers can deliver but strategic sourcing that has changed to deliver to the customer's needs.

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