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Understanding the Strategic Possibilities in Managing Hydroelectricity Interruptions in Zambian Manufacturing Businesses

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ABSTRACT

Frequent interruptions of hydroelectric energy damage equipment and reduce worker productivity, notably in developing countries. Manufacturing leaders in Zambia who lack strategies to manage hydroelectricity interruptions risk financial and other losses. The lens of the contingency theory provided the underlying constructs to fulfill the purpose of this qualitative, multiple case study, notably to explore strategies that some manufacturing leaders use to manage hydroelectricity interruptions. The participants were six managers from different manufacturing industries based in Lusaka, Zambia, who implemented strategies to manage hydropower interruptions. The qualitative data collection involved conducting interviews using a semi structured form with triangulation of the primary data against the reviews of company documents, company websites, and publications from the Zambia Association of Manufacturers related to managing hydroelectricity power interruptions. The thematic analysis led to the principal theme emergence of the importance of managing the cost of labor input. The key recommendations from the analysis of the study findings were on the value of investment in alternative power-generating equipment and upgrading of plant transformers. The discoveries from the study may contribute to positive social change by contributing to job creation and improving financial outcomes.

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Introduction

Background and Insight into the Problem

Business leaders in the manufacturing industry in developing countries are apprehensive about the increasing hydropower interruptions because of the high costs associated with alternative energy sources and loss of production time resulting in loss of revenue (Ahmed et al., 2019; Mwila et al., 2017; Phiri, 2017). Unstable hydropower supply often brings value-adding activities to a grinding halt in economic sectors; conversely, the electricity deficit is considerably greater in the energy-intensive manufacturing sector (Ahmed et al., 2019; Mwila et al., 2017; Phiri, 2017). Because electricity plays an essential role in a nation's economic development, hydropower interruption causes concerns for household and commercial consumers in general, mainly in the manufacturing industry; it is of vital concern.

The manufacturing industry is managing hydropower interruptions usually by running on alternative but expensive energy sources such as diesel-powered generators, which increases the cost of production (Phiri, 2017). The power disruptions adversely impact the profitability margins of manufacturing businesses (Ahmed et al., 2019). To maintain operational effectiveness and competitiveness, manufacturing leaders need to engage strategies to manage the negative fallouts from increasing load-shedding hours in Zambia. In this study, I explored strategies manufacturing leaders use to manage hydroelectricity interruptions using the lens of contingency theory to understand how leaders manage

hydropower interruptions and remain competitive in the industry.

Research Question

For this qualitative study, the overarching research question was: What strategies do manufacturing leaders use to manage hydroelectricity interruptions?

A Review of the Professional and Academic Literature

An exhaustive review of pertinent literature aided in understanding the issues and challenges and set the research on the path of informed diligence and execution.

Discussion on Leveraging Opportunities

Opportunities are often learned by organizations that fit within the environment and benefit from higher performance (Burton & Obel, 2018). The diligent use of knowledge can lead to the optimization of resources and organizational expansion, such as aiding growth in size and revenue, innovation, and diversification (Burton & Obel, 2018). Therefore, opportunities may also however lead to the awakening of flaws in the existing organizational structure. The misalignments in fit may lead to poor performance, and eventually, poor organizational profit margins, which makes it imperative to have adaptive structural change to fit into the emerging subsystems (Victor, 2020).

To maximize opportunities resulting from locational understanding, leadership decisions, and practices must adapt to the demands of the environment (Csaszar & Ostler, 2020). The maturity level of team members and their involvement in understanding the organizational environment becomes essential for the organization's desired work behaviors and

performance improvement (Csaszar & Ostler, 2020). Opportunities often unfold together with organizational adaptive marketing strategies, alongside external environmental factors, and adaptive adaptation of the strategy to locational factors to improve performance (Zeriti, 2014). Maximizing opportunities from the environment is critical but needs a balance between the level of experience of the team members and their understanding of the tasks to achieve the desired performance.

The business environment influences the organization's performance and its success. However, aside from opportunities environmental or locational pressures transform the performance of organizations (Yu et al., 2017) and environmental factors shape the organizational structure, but the market of the organization moderates it. The manufacturing sector considers marketing as an integral function and with high marketing capability contributing to the desired margins. The challenge is that increased costs because of mitigating hydropower interruptions may prove damaging to the sector's customers and suppliers. Complicated, and premeditated business judgments are not as fruitful if they are overly flexible.

Staffing and Role Assignments

Examining and establishing a connection between the relationships of human resources, locational understanding, and how it affects performance in the manufacturing industry is essential. Adapting the structure of the workforce or human resources to liveliness and environmental uncertainty yields better performance (Raju, 2019). The external business environment moderates the effects of information failure regarding the workplace (i.e., division of teams in the organization; Raju, 2019). The instability and unpredictability caused by the lack of hydropower interruptions to businesses are influenced by information failure of top management and results in poor organizational performance (Raju, 2019). Industry leaders must quickly adapt their leadership style, human resources, task team, and team members to internal and external environmental factors (Donaldson, 2008; Ha & Pasch 2019). Organizational performance is enhanced when the structure and systems of the workforce are well aligned to the internal and external environment with clear roles and responsibilities for the team assignment.

Identifying critical linear relationships in the operational environment of a business is essential for achieving the desired performance. Environmental factors influence the standards of behavior for customer orientation and business performance (Wylot, 2019). The manufacturing sector has a strong association with suppliers of hydropower and this external relationship is essential for strategic leadership. External dynamics usually alter this relationship, and the best mitigation strategy is a structure that considers the environmental contingencies that are market-oriented coordination (Wylot, 2019). The efficiency of the stated effects on the manufacturing business may improve if evident that the external conditions of the environment are in place such as a constant supply of hydropower and good relations with suppliers of hydropower.

Suppliers of Hydroelectricity

Suppliers of electricity and policymakers need to have a common understanding concerning the needs of the manufacturing industry. Policies are essential because they determine the cost of doing business and the social change impact that businesses may have in their communities. Flores and Waddams (2018) examined the characteristics of most consumers of electricity and the market approach of suppliers

and how it affects businesses including small-scale consumers. Considering the characteristic of increasing strategy relevance and interference, while pioneering customer mindsets through marketing evokes new dynamics, and variables influencing customers' conduct that may alarm business leaders, invariably merit some consideration (Flores & Waddams, 2018). Policymakers need to consider a balance between suppliers of hydroelectric power and consumers to enable the market access to a sustainable and consistent supply of hydropower.

Hydroelectric power utility providers need strategies that take into consideration the needs of their users both commercial and domestic. Dogić (2017) considered strategies that electricity utilities use to help provide better services and informed that there was a huge contrast between those operating in advanced economies and the ones in developing economies. Even though electricity is an indispensable element of everyday life and for economic growth, the degree of deregulation may affect business growth strategies. The issue of investment and outright purchase price has an impact on future tariffs because suppliers of electricity may be looking at ways in which to recover their investment (Munoz et al., 2018). Therefore, if the cost of electricity supply is not managed well chances are that these costs will be met indirectly by the consumers and may lead to high-priced products (Munoz et al., 2018). It is, therefore, essential to consider all available options be it audited costs or bid price, and their impact on the business community and the impact on social change in their communities.

Maximizing opportunities from the environment is critical but needs a balance between the level of experience of the team members and their understanding of the tasks to achieve the desired performance. The business environment influences the organization's performance and its success. However, aside from opportunities environmental or locational pressures transform the performance of organizations (Yu et al., 2017) and environmental factors shape the organizational structure, but the market of the organization moderates it. The manufacturing sector considers marketing as an integral function and with high marketing capability contributing to the desired margins. The challenge is that increased costs because of mitigating hydropower interruptions are damaging to the sector's customers and suppliers.

Contingency Forecasting

The postulations of the contingency and situational theory connote the significance of investigating the existing location and variables that affect business structures so that leaders may be successful (Tsolka, 2020; Wilbur & Cameron, 2020). Regardless of the business model being referred to, it is fundamentally unimportant to analyze leadership varieties without identifying the importance of the business environment. For leadership to be effective in an uncertain environment, leaders ought to embrace an all-inclusive attitude (Tsolka, 2020). Manufacturing businesses and processes are multifaceted organizations, mostly functioning with an open system that emerges to be unclear if the importance of the business environment is not considered.

Leaders avoid high ambiguity conditions by employing usual operative methods and making conventional organizational reactions in almost all situations (Huang & Lee, 2020; Tsolka, 2020). Huang and Lee, (2020), advocate that contingency forecasting and situational theory may provide business leaders the opportunity for a firm foundation in promoting and cultivating management leadership

strategies and practices. CT is grounded in the supposition that no distinct/specific leadership style is right in all settings. The theory may mean that the leadership style is moderately uncompromising. Therefore, organizational efficiency hangs on harmonizing internal business characteristics with environmental circumstances (Huang & Lee, 2020). An essential tool of the theory of contingency leadership is linked to contingency planning or forecasting (Huang & Lee, 2020; Tsolka, 2020) and the flexibility exerted when overseeing a team.

Contrasting Theories (CT)

CT reflects on the elements of the organization's performance and structure. CT are the theoretical assumptions on the areas in organizational analysis to address challenges faced by the business and consider the best options to optimize the opportunities. Bureaucratic organizational structures tend to be more appropriate for large organizations, especially if those organizations are correlated with rulemaking to administer repetitive processes (Otenyo, 2018). However, bureaucratic structures that are simplified are seen to be more centralized and associated with individualized decision-making management styles (Knowles, 2019; Otenyo, 2018). The cultural norm of an organization is in line with its bureaucratic approach and mushrooms the uniqueness of the operational environmental factors that result in changing the perceived outcomes of the organization. In addition, organizations operating in stable environments generate outputs that are differentiated compared to those in unpredictable and or vigorous environments (Otenyo, 2018). Bureaucratic structures seem to advocate for simplified processes and are associated with individual decision-making, hence, the uniqueness of the environmental operations becomes essential but not guaranteed.

The theory of contingency has a broader application when considering areas of leadership and decision-making for various organizational settings (Donaldson, 2013; Otenyo, 2018). To address the challenges faced by organizations, most businesses would have to make a consensus depending on their technical know-how of the problem by having a detailed definition of the challenges faced in a particular situation. Technical know-how is essential to fix challenges faced by manufacturing businesses, therefore the need for manufacturing leaders to have a consensus, and clarity of the challenges faced. The contingency framework draws together the dual dimensions to reinforce the environmental foundation of the philosophy (Otenyo, 2018). However, scholars need to contend with questions regarding the meanings of contingency theory concepts such as environmental demands, organizational internal features, and acclimatization (Donaldson, 2013). Contingency theory concepts fundamentally rely on the organization's environmental aspects but ignore some such as technical challenges that are constantly changing.

Contrary to the contingency theory are systems theory and the path-goal theory. Systems theory centers on the internal dynamics of the organizations. The systems theories target defining purposes and entities, whether they are material or human hypotheses to develop the phenomenon under study (Knowles, 2019). Therefore, introducing the essential aspects and exemplary methods of organizational applied systems to explain and analyze the processes and organizational units with a focus on unlocking, transforming, or forecasting organizational structure and their behavior (Al-Shaalan, 2019). System theory explains and analyzes the

functioning units of an organization intending to remove bottlenecks in the whole system.

Innovative practices are emerging to manage business systems so that business processes are nonlinear and resistant to managing the emergence of erratic occurrences (Dominici, 2017). In the same vein, organizations cannot be seen as silo systems but need to be seen within a broader global set-up. Therefore, it is essential to devise a universal standard, that deliberates business techniques as multifaceted organizations. Taking such an approach entails that organizations are complex systems, and their components cannot be measured as independent and distinguishable entities. Systems theorists may attest that essential processes have mutual relationships with each other and their environment. Using the quality systems of an organization, Ehsani and Ghane (2019) stated that out of the quality processes, guidelines, and policies, the same systems may have an interconnection with the environment in which they operate which is linked to stakeholders, customers, and suppliers. The structures define the elements that establish the relationships within the systems called internal structures and the ones outside the system are known as external structures (Wanjari & Khadekar, 2019). However, concerning the external structures must be distinct that the external elements have a direct relation to the elements within the internal structures (Kamuda & Kuzel, 2020). Using the manufacturing system, may entail having machinery performing procedures and supported by the external environment with inbound activities such as materials and parts sourced from suppliers and through the outbound processes produces products and distributes to the intended customers. Therefore, isolating systems from their relationship with the environment i.e., the external structures may not define the purpose of the internal systems.

The path-goal theory is concerned with the individual rewards for team members, through clarity of responsibilities, overseeing obstructions and prospects to own satisfaction of employees (Farhan, 2017). Like CT, the path-goal theory connotes leadership behavior as a critical source that influences team members and may change the manner, enthusiasm, and performance of individual subordinates (Farhan, 2017). Path goal leadership theory necessitates a culture of leaders, who are concerned with nurturing a learning culture to embrace instructions, and helpful, participative, and realization-concerned behavior (Olowoselu, et al., 2019). A Leader, who is knowledgeable and willing to learn may accept certain behaviors to accomplish the organization's set goal(s) of inspiring junior team members' knowledge and proficiencies. In addition, the assumption of applicable style is essential to respond speedily to team members' expectancies, essentials, and needs (Olowoselu et al., 2019). Idriss Dokony et al. (2020) stated that the adoption of suitable leadership behavior relies on the ability to change in circumstances aligned with the culture of the organization, the uncertainty of team assignments, and the attitudes of subordinates. The actions taken by organizational leadership may offset any deficiency that may be disclosed (Kwon et al., 2020). Therefore, I advocate for knowledgeable leaders to use the path-goal leadership style to influence team members to gratify the knowledge gap and improve their capacity.

The path-goal theory indicates for leader behaviors relevance for four essential areas which are directive, supportive, participative, and achievement-oriented. Leadership that exhibits directive behavior, aligns with characteristics such as issuing instructions about the duties

and roles of the assignment that need to be completed, informing team members when the assignment needs to be completed, and formulating clear performance expectations for all team members (Bickle, 2017), like the authoritative leadership under CT of leadership styles. A leadership style that is concerned with exhibiting compassion and concern for team members or followers is known as supportive leadership. Supportive leaders aim to make the working environment more enjoyable and treat team members as they would prefer to be treated (Kwon et al., 2020). Participative leadership requests dialogue from team members by inviting insightful contributions from team members concerning the assignment or task and using the suggestions of the team members to complete the tasks successfully (Sujana, 2020).

CT has significantly contributed to most leadership studies on organizations' settings, behavior, and management strategies, (Donaldson, 2013; see also Bachrach & Mullins, 2019; Csaszar & Ostler, 2020; Falkenhausen et al., 2019). However, critics of the contingency theory have identified several shortcomings of CT's general appeal. One of the outstanding problems with CT is that it is not an integrated body but a body of viewpoints (Donaldson, 2013). Donaldson (2013) stated that the key challenge associated with CT is the absence of clarity in its assertions. To be precise, the SARFIT model is the evolution of the structural contingency model and appears to disregard rational thinking, because it insinuates that when eventualities change, the functionality of processes deteriorates, leading to inaccurate consideration of organizational structure to adjust and match to new or emerging contingencies (Donaldson, 2013). In addition, three important scopes require some improvement: (a) effectiveness, (b) environment setting, and (c) compatibility.

Population and Sampling

The population for this study consisted of six manufacturing leaders in Zambia who have used strategies to successfully manage hydroelectric power interruptions. My focus was on manufacturing firms producing fast-moving consumer goods (FMCG). I used selective sampling to select participants from PACRA's publication list of lawfully registered manufacturing organizations whose operations are based in Lusaka, Zambia. Researchers use selective sampling in a qualitative study to connect and collect rich data, and for the most effective use of controlled resources such as geographical vicinity, accessibility, or availability of the target population (Jehiel & Steiner, 2019; Yin, 2018). Yin, (2018) stated that finalizing the interviews with essential stakeholders of the organization may offer a universal dataset. I interviewed leaders of manufacturing firms who have the vision, knowledgeable communication strategy, and empowered or delegated tasks relevant to the research question; therefore, selective sampling was appropriate.

When research does not attain data saturation, the study's quality is compromised and obstructs content validity (Fusch & Ness, 2015). Using the identified target population, I interviewed six participants to enable me to have a selected sample of six participants. A sample size ranging between six and 10 is enough to collect diverse themes to attain data saturation. A sample size exceeding 10 or more may not translate into richer or value-adding data for the study goals (Guest et al., 2006; Hennink et al., 2016). A researcher needs to consider data in terms of the dataset's quality and quantity (Fusch & Ness, 2015; Hennink et al., 2016). Using a selective sample, I considered interviewing key stakeholders who provided me with the best opportunity to reach data saturation, regarding the data layers, elaborateness, features,

and nuance. Using interviews, I did not quantify the sample but took what I could get from the participants and transcribed the data. The interview protocol enabled me to ask several participants the same question. I emailed participants' responses for confirmation of accuracy and if there were misinterpretations, I made the appropriate changes, sent them back to the participants repeated the process, and continued this process until no new information was obtained, and the study could be replicated.

Using purposeful sampling enabled me to identify the participants to be interviewed and use the PACRA list of registered manufacturing organizations to choose the manufacturing businesses. I contacted the participants via email (Appendix B) to request participation and the preferred method of interfacing. If those contacted agreed to participate, I searched the Zambia Association of Manufacturers (ZAM) for their business publication reports and press briefings to see additional information regarding the impact of hydropower interruptions on the manufacturer. The object of searching the ZAM website was to obtain a holistic view of the challenges the manufacturing sector was facing and other factors emanating from the external environment such as the political, economic, technological, and social (PEST) setting. During the interview process, I inquired about the leadership style to identify the level of participation of manufacturing leaders on national and local government policies concerning addressing challenges caused by hydropower interruptions. Engaging stakeholders involved in hydropower interruption issues served as a layer of data because participants had grounded knowledge and were better placed for contingency forecasting. In addition, it is essential to consider assessing the selective sample population in line with other cultural and power dimensions before the interviews (Gill, 2020; Jehiel & Steiner, 2019; Pitard, 2020). Using purposeful sampling was useful in the selection of the research population and improved my attentiveness to the selection of meaningful cases aligned with the phenomenon.

I aimed to establish a rapport by having an open, casual, and curious attitude to show why I was interested in the participants' view of a phenomenon. Agreeing on the date, time, and venue enabled my research to be undertaken in a conducive environment and provided the opportunity for open interaction. I considered semi structured interviews because of the possibility of creating a rapport with the participants. Technology-supported interviews such as Skype, zoom, Google Meets, and telephone have advantages and disadvantages, but if not managed well, may limit the research quality (Kaur, 2018). McGrath et al., (2018), stated that essential to any interview method used is to follow the interview protocol and ensure no distractions for both the interviewer and interviewee to capture accurate information and record conversations without echo or noise pollution. I informed participants of the importance of a noise-free environment, and no destruction, and establishing a rapport was key to engaging participants and building trust.

Data Analysis

Alam (2020) and Yin (2018) stated that an essential feature of qualitative data analysis is examining the text. Text in qualitative data analysis can be in the form of notes and artifacts reviewed by the researcher (Kanygin & Koretckaia, 2021; Yin, 2018). I analyzed data to understand participants' views of the phenomenon and comprehend the depth of the data using a hermeneutic assessment of the text. Yin, (2018), stated that hermeneutic analyzes and interprets text that cannot be considered factual or deceptive. I, therefore,

constructed the study findings' reality through the lens of the central research question, the conceptual framework grounded on modified van Kaam, and the literature review of the research anchored on the CT.

Researchers use methodological triangulation to compare interview responses with additional documentation, artifacts, and depth, to understand a particular investigation (Yin, 2018). I supplemented interview responses with documents such as publicly available company agreements, reports, websites, and photographs, in addition, I considered the use of physical artifacts observation.

Presentation of the Findings

The qualitative multiple case study involved interviews of six senior managers in the manufacturing sector who held experience and were involved in shaping the organization's policies, culture, vision, and mission, and successfully implemented strategies to manage hydropower interruptions. I used an alphanumeric coding system i.e., Pax01 through to Pax06 to represent Participants 1 through 6. All participants were Zambians, with educational degrees in their respective disciplines. The research question that guided my study was: What strategies do manufacturing leaders use to manage hydroelectricity.

Managing Cost of Input

The principal theme that emerged from the analyzed data was managing the costs of input aligned to the cost of sales. All six leaders in the manufacturing sector, representing 100% of the target population responded to: what strategies were least effective in managing hydroelectricity interruption? And how, if at all, have you modified your most successful strategies to manage hydroelectricity interruption? All participants agreed that managing the cost of input was a strategy they engaged in managing hydropower interruptions. Pax01 stated, "Cost of sales are functions derived from the cost of inputs. In addition, reduced labor would be an option, but this mainly advocates lowering the cost of inputs and not much addressing the challenges of hydropower interruptions." Pax02 mentioned,

Everything is based on the cost of production, and a dormant plant is not beneficial to anybody since it must be operated. We reduced it from 24 hours to 12 hours in the first phase and considered the tariff cost and what it could accommodate. The essential element was negotiating the price of inputs to have favorable prices. Other inputs such as oxygen plants and water plants were outsourced and sourced internally.

Pax03 further stated, "The critical barriers for implementing this strategy were the cost of procuring the 200kva generator, the cost of diesel for operation, and the cost of maintenance and servicing of the generator."

Pax04 further mentioned,

Installation of additional solar-powered lighting was a once-off cost; however, we had to manage the cost investment. Pax05 mentioned the key barriers where the high cost of procuring fuel for the generator set, and Pax06 stated the solar plan would have generated stable power and significantly reduced the project's initial cost.

Correlation to the Literature and Conceptual Framework

The principal emergent theme aligned with the literature review on energy constraints and manufacturing business decisions. Energy constraints affect business decisions and directly influence the costs of operations (Wang et al., 2018).

The cost of electricity is one significant input to product cost in the manufacturing sector (Hoare, 2017). The aspects of consistency regarding hydropower plants behaving strategically and giving zero marginal cost may be the future and address the consumers' concerns (Pereira et al., 2017).

Decision-making that only forecasts aspects of alternatives to manage hydropower interruptions is faced with the challenge of economic and organizational politics (Okta Rama & Harnani, 2021). It is, therefore, essential to consider indirect costs, which cannot be overlooked and may need to be prioritized just as direct expenses, primarily associated with enhancing the supply of electricity (Eales et al., 2017). Manufacturing businesses that secure conditions for operations may improve productivity and use input resources such as hydropower to minimize costs and maximize profits. In summary, when leadership is challenged with inflexible edifices and the organizational environment begins to change, it may require transformational adjustment to improve activities, reduce costs, negotiate tariff costs, fuel costs, and re-schedule production hours to maximize profits. Besides, a reduction in the workforce could be an option when considering the cost of inputs and not necessarily addressing the challenges of hydropower interruptions.

Implications for Social Change

The knowledge from this qualitative multiple case study findings on strategies to manage hydroelectricity interruptions in Zambian manufacturing businesses will likely contribute to social change by stimulating and appreciating essential leadership strategies within the manufacturing sector. Okta Rama and Harnani (2021) reviewed the connection concerning current arrangements of operational transformation in a country's economy and poverty reduction. In the last two decades, some developing economies have become service-centered at the expense of subsectors, such as the manufacturing industry, which has ceased to drive structural transformation (Okta Rama & Harnani, 2021). In addition, the manufacturing sector's competence to generate employment and lead productivity growth has deteriorated in most developing countries, therefore a slowdown in poverty elevation and rapid increase in inequality. Economies' growth struggles if leadership styles do not conceptualize the need for subsectors such as manufacturing industries, and this increases unemployment because of low productivity making the fight against poverty and inequality in communities difficult (Okta Rama & Harnani, 2021).

Using CT-influenced strategies to capitalize on modern power stabilizers and storage facilities, generators to manage production stock gaps, input costs, and production during off-peak hours contributes to the economic stability of communities, citizens, and countries. Leaders who successfully implement these strategies improve employee job satisfaction, job security, employment, and organizational sustainability. The tangible improvements to individuals and communities are that it champions job creation, reduces poverty and inequality, and advocates for part-time employees who are not laid off entirely and do not lose their income to maintain the employees' livelihoods and their families. Besides, the organizational culture is impacted positively by championing a fit-for-purpose environment that ensures the sustainability of the business.

Maximizing profits and empowering suppliers who directly make a positive contribution to the communities and society is critical. Successful emergent strategies from industry leaders indirectly enable them to employ companies that supply partly processed stock and resource inputs which

helps manage the effects of hydropower interruptions during production. Companies or suppliers who are directly involved in the supply chain of businesses may influence the communities they operate in (Snyder & Shen, 2020). Managing supply chain relationships may reduce youth unemployment levels and reduce poverty and inequality while diversifying small-medium enterprises (SMEs); the result may contribute to the well-being of the communities, more job openings, and boost economic activities at both community and national levels.

Conclusions from Study Findings

Hydro energy demand is increasing significantly from 590 TWh to 3,100 TWh, whereas the installed capacity is expected to grow from 120 GW to 700 GW (Programme for Infrastructure Development in Africa, 2019). This implies that significant investment in hydropower and other renewable energy supply initiatives is required to meet future demand. In this qualitative multiple case study, I explored strategies that some manufacturing leaders use to manage hydroelectric power interruptions. The target population consisted of six leaders in the manufacturing sector who have demonstrated success in using strategies to manage hydroelectric power interruptions based in Lusaka, Zambia.

Managing stock gaps was critical and this translated into managing scheduling man-hours and investment in generators to keep production running. At the very best, the industry should consider investing in renewable energy such as solar-powered sub-station grids, and supply any excess electricity generated to primary grids for domestic should align themselves to the evolutionary decision-making attributed to the challenges faced.

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