

Full Length Research Paper

Exploring barriers affecting suppliers in the mines in Zambia

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The global value chain has become an important strategy to link local suppliers to the various commercial activities that are performed during the production of goods and services. The chain actors involved join together in distinctive processes to produce a product in a win-win situation. This means that even the marginalized local suppliers are given an opportunity to supply along the chain and earn income. However, due to the complexity nature of the value chains, local suppliers continue to face challenges to derive some benefits from the chains due to unknown barriers. The objective of this study was to find out the major barriers that suppliers face in the mining global value chain in Zambia. The analysis was based on survey data set obtained from 350 purposively sampled suppliers who are members of the mining suppliers and contractors association of Zambia. Exploratory factor analysis was used to find the barriers affecting suppliers in the mines. The results revealed public and private sector barriers as well as individual supplier capacity barriers. The study also presented some major policy implications for the mining global value chain in Zambia. In addition, the study proposed areas for further research to be done on a broader data set from other mining areas in other countries to validate the findings of this study.

Key words: Global value chain, suppliers, mines, small, medium enterprises.

INTRODUCTION

The mining sector worldwide creates employment directly and indirectly through its global value chain activities. The global value chain (GVC) covers the full range of activities performed by various firms to bring a product from its inception to the end user and beyond (OECD, 2013a). The costs and benefits of the mining global value chain to local communities and the relationship between them are subjects that have become important

in developing and developed countries (IFC, 2002; OECD, 2013b). Most countries have witnessed sustainable benefits between communities that provide services to the mines (IFC, 2002). In Canada as well as Malaysia, small and medium enterprises (SMEs) who are linked to the mining activities have become global suppliers as they have participated and adapted to international requirement (Ata, 2013). The Caribbean

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countries are also examples of SMEs development that are linked to commercial activities of the global value chain (SELA, 2012). These successful linkages in most countries have been facilitated by eliminating various barriers (Gereffi, 2013) which unfortunately in the Zambian front continue to taut SMEs (Chibwe, 2008). Small and medium enterprise have always been described as drivers of any economy through their economic activities but alas the opportunities which SMEs might access from the mines are scarce which leaves various questions as to what exactly are the barriers affecting SMEs to supply to the mines in Zambia. Recent studies in the Zambian mines by the CMZ & ICM (2014:4&68) confirm that local SMEs are unable to supply to the mines due to unknown barriers.

As reflected by the struggling SMEs to supply to the mines in spite of the local content policies the effects of many unknown barriers affecting the inclusiveness of mining global value chain is a reality that must be tackled by researchers, policy implementers and other stakeholders. It is important to have a full grasp of a common framework of barriers to develop a strategy to overcome them and improve connectivity among stakeholders in the mining global value chain. Regrettably, no convincing understanding of such barriers is available to policy implementers in Zambia.

This study, henceforth, responds to the questions regarding the barriers affecting SMEs to supply to the mines. The research process begins with a review of the available literature to gain insight on the barriers affecting suppliers in the global value chain. In addition, the review of the global value chain theory helps in understanding the relevant concepts on how value chains are governed and how to make them inclusive. Thereafter, the research design and methodology is explained as well as the rationale behind the selection of methods. The research continue in its process by presenting findings based on primary data collected from SMEs who are registered by the mining suppliers and contractors association of Zambia and supplemented by secondary sources. Finally, the key findings are discussed to pave way for implications and conclusions for policy implementers, researchers and other stakeholders.

LITERATURE REVIEW

In this study, global value chain (GVC) theory is being used to gain insight in the relationship between private sector activities through production and trade on one hand and linkages of SMEs to these activities on the other. The theory specifically focuses on the role of GVC in international networks of companies for a win-win situation. However, the governance of this network poses lots of challenges that affect some stakeholders to participate in the global value chain. There is confusion on a number of related theoretical approaches found in

literature that describe international networks of companies. These include value chains, global commodity chains, value systems, and value networks (Gereffi, 2013). Global commodity chains is described as "a set of inter-organizational networks which are clustered around one commodity linking to households, enterprises, and states to one another within the world economy. As regards to the global value chain and value chain of Porter, the overlap between the two arises due to nomenclature on Porters work in the mid-1980s (Kaplinsky and Morris, 2001). The value system also bestows similar meaning to GVC. It is described as a set of inter-linked 'complete' firms specialized in value chain functions and is thought of by other researchers as 'incomplete' firms that are specialized in certain value chain functions such as design and marketing. The value system's focus is the organization network as a unit of analysis. Another similar theory to GVC is the value network approach which provides new insights to the concept of value chain. Although there is a clear difference between them, most scholars interchange them.

In this study, the main focus is the relationship between global value chain and supplier inclusion. The GVC theory help in identifying the leverage points along the chain that would yield highest potential for improving relative benefits for SMEs (Hoermann et al., 2010). It also helps in spreading the gains in the chains and economic integration into international design, production, and marketing of many different firms (OECD, 2013a). GVCs also act as a route to market for export products and services which in turn directly spawn value added contributing to gross domestic products (GDP), job creation, income generation, and tax income. Most stakeholders advocate for the promotion of GVC inclusion by building SME's capabilities, facilitating improved market opportunities, and improving the quality of information available for them to make correct decisions. Trade, investment, and knowledge flows are significant factors that underpin GVC and provide mechanism for rapid learning, innovation and industrial upgrading. Acquisition of skills and new competencies are linked with participation in GVC in which transactions and investments come with quality control systems and standards that exceed those in developing countries. The participation in GVCs broadens the scope for getting gains from an open trade and investment regime, and thus diminishes pressures for protectionism. This helps producers from developing countries to enter foreign markets, earn more foreign currencies, diversify their exports, and get new skills, knowledge and technology which are considered as key factors for productivity enhancement and growth. However, there are a number of barriers that SMEs face to participate in the GVC (Cattaneo et al., 2013). The lack of knowledge of the actual barriers affecting suppliers in the mines makes it difficult for policy formulation to curb the scourge.

However, strides have been made by NGOs and governments to improve the supplier presence in the mining global value chains. Donor support strengthens the weakest link to address potential bottlenecks. In addition, they help improve flows of knowledge and resources to make all suppliers productive in the chains. In other veneration, most governments have been supportive in investment in R&D and improving the position of suppliers in the value chains. Governments also reduce tax burden, eliminates border thickness and improve infrastructure as a method to enhance inclusion of suppliers to the chains. Unfortunately, these efforts do not achieve significant improvement to enable suppliers participate in the chains as they are a broad strategy. Therefore, a correct grasp of the barriers of entry is helpful in improving the position of supplier's in the value chain. Some scholars have in general terms alluded to standards requirements, tax compliance, registration processes, licensing requirements, technology upgrade, capacity requirements, managerial competencies, competition and financial capacity all of which act as barriers affecting suppliers to participate in the global value chain (Kaplinsky, 2010; Tijaja, 2013).

Standards are products and process specifications so that wide range of global suppliers delivers according to the requirements of the markets. The failure to meet these standards may lead to exclusion from the GVC (Cattaneo et al., 2013; Tijaja, 2013). Most suppliers face some challenges in meeting standards which are beyond their local capacity. Standards create unnecessary obstacles where local producers are unable to meet international requirements (Tijaja, 2013). Sometimes, local producers adjust to the standards of the buyer by replacing local materials with imported ones which in itself is very expensive. Government imposed standards may raise the cost of local production obliterating trade and investment. In addition, badly enforced standards for standards agencies minimize backward linkages as well as reduce spill-over effects of foreign direct investment (FDI). This entails that inputs may be imported to meet standards of lead firms and local tasks are confined to basic manufacturing thereby affecting local supplier participation in the chains. In-line with standards is the management of tax whose structure is not conducive for local suppliers as it creates a greater burden to the taxpayers and ultimately affecting the final consumer due to its shifting ability. Mnawa and Maliti (2008) stressed that most SMEs fail to maintain their growing profitability due to inflexible tax policies and yet these SMEs are the backbone of economic growth. While standards and tax structure have failed the suppliers in the global value chain, the regulation of various activities of the global value chain seems to favor and work for the suppliers as most governments worldwide use them to nurture suppliers. A well-designed structural government policy associated with good licensing and permits system, company registration processes, licensing requirements,

property rights law, certification procedures, efficient dispute settlement procedures and bankruptcy law are cardinal in GVC (OECD, 2007a). The governments' initiative to set up business incubators to support local SMEs to access financial support, upgrading possibilities, business linkages and technical support are crucial components supporting supplier linkages to the chains. However, some regulations may constrain SMEs growth and productivity as a lot of questions arise such as "Why is the government imposing too much regulation? When do SMEs feel that regulation is constraining the growth and productivity of SMEs? It is true that some administrative procedures have become redundant and are now barriers as they do not meet the intended objectives (Kaplinsky, 2010). Alongside the government regulation is the governance of the global value chain where private sector dominates. Most value chain such as the mines is buyer driven and therefore they decide what to buy, when to buy and who participate in supply chains although local content policies give priorities to local suppliers. Some scholars have shown that SMEs must upgrade and meet international requirements to participate in the chains but this is out of reach of local SMEs (Gereffi, 2013).

Apart from standards, tax, registration processes and licensing requirements, the lack of innovation and capacity building limit entry of SMEs into GVC. The predominance of flows in the global value chain requires adaptability to lead firms' request, responsiveness, and innovative capacity. Most countries therefore require a greater capacity for scale of production, availability of services necessary to support production and market integration, education and skills of the workforce matching the needs of global producers and buyers, and capacity for innovation in its multiple dimensions (Cattaneo et al., 2013). Managerial and financial resources as well as inability to upgrade and protect in-house technology are a barrier of entry into GVC (OECD-APEC, 2006; OECD, 2007b; SELA, 2012). SMEs also lack the scale to invest in R&D, lack access to knowledge, technology, credit and markets. In addition, access to trade finance, compliance with standards, and high market entry costs are common barriers of entry into GVC (OECD/WTO, 2013a). There is also a question of competitiveness where Caspari (2003) maintains that firm size stands as a barrier in the ever-fierce competitive environment where global firms fight for greater market share and may become "manufacturers without factories". In addition, global firms concentrate on highest value added parts of the global value chain from selected suppliers who have the capacity to fulfil orders on time, and supply the required quality. Gereffi's (2000) analysis of the apparel industry in North America show that the investment requirements needed for high value activities are out of reach of the SMEs. However, it is important to note that in the value chain, there is an opportunity for learning, partnerships and upgrading (UNIDO, 2004).

METHODOLOGY

In the study, a positivist paradigm was adopted to identify the barriers that suppliers face in the mining global value chain in Zambia. This approach was appropriate as the units of analysis are quantifiable registered suppliers of the mining suppliers and contractors association of Zambia. Since the respondents are known and available out there in the field, this approach therefore is in-line with the recommendations of Creswell and Clark (2011) who says that the use of the positivist approach for such similar situation is consistent with ontological and epistemological view that reality is external and objective. In order to collect data, a cross-sectional descriptive survey research was utilized which described the events as they currently occurred, as well as how they are related to other factors in the present conditions (Bryman and Bell, 2015; Creswell, 2014). This study then adopted a global value chain theory which breaks down the variables under discussion. This break down of variables makes it easier to collect and analyze relevant data on the main barriers that SMEs face to supply to the mines. The analysis of the global value chains is central to policy implementers to identify areas for intervention in the chains. In line with the positivist paradigm which demands to collect primary data through quantitative methods, a standardized questionnaire was developed.

Selecting samples

In the quest to determine the correct respondents, a selection criterion was done to ensure adequate representation of all segments of the mining global value chain in Zambia. In order to ensure that a correct framework of barriers is assessed, the study considered suppliers who have been registered with the mining suppliers and contractors association of Zambia and have never been de-registered due to non-payment or any other reason. In addition, the respondents were those suppliers who had served membership of the association for over 5 years and were well versed with the intricacies of the mining global value chain. The sampling method was snowball based on the work experience, membership of the mining association, knowledge of each other and the respondent's involvement with the mining global value chain. This non-probability sampling technique resulted in the recruitment of 720 respondents.

Data collection

Primary data collection was done over a period of 4 months starting December 2018 to the end of March 2019. This study used standardized questionnaires which were completed by respondents through a cross section survey. The questionnaire development process proposed by Neelankavil (2015) was adopted to ensure quality. Neelankavil (2015) proposes a rigorous process of reviewing research objectives and research questions to streamline them to information needs and thereafter pretesting the questionnaire. The internal consistency method as estimated by the Cronbach's alpha was used to measure reliability. This measure is very important as it reveals the similarity of items in the instrument that is used to tap the constructs. One assumption of factor analysis is that items should at least be 70% reliable (Field, 2009; Hair et al., 2010). To avoid discrepancies in the answers, some follow-ups were conducted although badly answered questionnaires reduce the reliability of the items. Further, to improve the validity, a desk review was done using current literature in journals and other relevant material to assess the collected data.

The data collection process resulted in distribution of 720 questionnaires to the respondents. There was a small diary for

them to use for taking some notes and a pen to be used for answering the questionnaire. These items were proposed to be retained for the respondents after answering the questionnaire as a token of appreciation as well as offering them convenience in answering the questionnaire while acknowledging the conflict nature of respondent incentive. The respondents were sent a friendly reminder after ten (10) days and this strategy worked very well as 400 questionnaires were returned. Further, the researcher checked the questionnaire for correct answering upon receiving them. Thereafter, the questionnaires were numbered for easy identification for future review. The data was loaded into an Excel software package after which it was transferred into the IBM SPSS software package for subsequent analysis

Data analysis

As regards the questionnaire, the items were measured using the "five-point Likert scale from 1 to 5" rating, with choices from "strongly disagree" to "strongly agree". Before performing a factor analysis, a statistical test was done using IBM SPSS to identify patterns on the characteristics of the sample from the mining global value chain suppliers. The researcher used Microsoft excel to develop a data sheet then transferred it into the IBM SPSS statistical package. In addition, data was reviewed several times for the purpose of cleaning against possible errors and omissions. Finally, data was analyzed using exploratory factor analysis (EFA).

RESULTS

This study was undertaken produce a common framework of barriers affecting suppliers to supply to the mines. The identification of such barriers in this study was relevant in assisting the policy implementers and other stakeholders in Zambia. This would further help in formulating and executing appropriate strategies to enhance supplier inclusion in the global value chain.

Questionnaire response rate

A total of 400 out of 720 suppliers completed and returned the questionnaires. There were Fifty (50) questionnaires not suitable for processing. Some questionnaires were not fully answered while other questionnaires from some respondents were rejected because of respondents' failure to complete the consent form. The useable questionnaires were three hundred and fifty (350) giving a response rate of 55% of the total sample of the identified mining global value chain suppliers. This sample was adequate as indicated by the KMO test as shown in subsequent analysis.

Statistical analysis

Cronbach's alpha which enables the estimation of consistency in the questionnaire items was employed to check the reliability of the instrument (Field, 2009; Hair et al., 2010). Cronbach's alpha ranges from 0 to 1 with

Table 1. Cronbach's alpha for the items used in this study.

Reliability statistics	
Cronbach's alpha	No. of items
0.795	9

Table 2. KMO and Bartlett's test of sphericity on supplier barriers in the mining global value chain.

KMO and Bartlett's test		
Kaiser-Meyer-Olkin measure of sampling adequacy		0.734
	Approximate chi-square	1169.524
Bartlett's test of sphericity	df	36
	Sig.	0.000

Table 3. Eigenvalues of supplier barriers in the mining global value chain in Zambia.

Component	Initial Eigen value		Cumulative (%)
	Total	% of variance	
1	3.565	39.616	39.616
2	1.497	16.636	56.252
3	1.006	11.179	67.432

those alpha coefficients closest to 1.0 revealing highest internal consistency on the items. Nonetheless, any value above 0.6 can be accepted as posing satisfactory item reliability (Hair et al., 2010 (Table 1)).

Exploratory factor analysis

An exploratory factor analysis (EFA) was conducted on the instrument items to reduce the number of variables and to categorize them (McDonald, 2014; Bartholomew et al., 2011). In exploratory factor analysis, it is important to assess whether the items on the instrument were factorable. Therefore, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity was used to decide on the factorability of the research data. When the test results show KMO of 0.6 or better, then the data set is factorable (Kline, 2013). Presented in Table 2 are the results of KMO and Bartlett's tests on the dataset from the mining global value chain in Zambia.

Table 2 show that the KMO value for the data (KMO = 0.734) was greater than the benchmark of 0.6. This means that factor analysis was possible (Dimitrov, 2014). In addition, the Bartlett's test result (Chi square Bartlett test = 1169.524 (df = 36), $p = 0.000 < 0.05$) was significant implying that there was sufficient correlation among the variables to allow factor analysis. Accordingly, the two tests were satisfactory for factor analysis to be used in the study (Field, 2009; Hair et al., 2010)

Supplier barriers in the mining global value chain in Zambia

The three (3) barriers that affect SMEs to supply to the mines in Zambia were identified and coded in the study as barrier 1 to barrier 3 and as can be seen in Table 3; barrier 1 contributed much of the total variance explained, with 39.616%. The least contributor was barrier 3, contributing to about 11.179% of the total variance explained. The three components were extracted with eigenvalues greater than 1. The results of the initial factor solution after the factor analysis are presented in Table 4.

Table 4 shows the component matrix before rotation whereas it contains the loadings of each variable onto each factor. In the analysis, it was requested that all loadings less than 0.4 be suppressed in the output and hence the table show blank spaces for many of the loadings. Further, the variables are listed in the order of size of their factor loadings because the output to be sorted by size was requested. It was difficult to determine which items defined which barriers from the initial solution above. Therefore, factor rotation was carried out to improve interpretability. The results of Varimax with Kaiser Normalization factor rotation are presented next in Table 5. As can be seen in Table 5, it was easier to interpret the barriers, since the distribution of items was spread across all the three (3) barriers extracted from the dataset from the mining global value chain in Zambia.

The rotated table matrix shows content of questions

Table 4. Initial solution on the barriers affecting suppliers to the mines

Item	Component		
	One	Two	Three
Competition affect SMEs to supply to the mines	0.834		
Technology inhibits SMEs to supply to the mines	0.816		
Lack of financial support limits SMEs to supply to the mines	0.813		
Standards requirement is a barriers for SMEs to supply to the mines	0.704		
SME managerial skills limits SMEs to supply to the mines	0.648		
Compliance to various Licenses affect SMEs to supply to the mines	0.432	0.714	
Registration process is a barrier for SMEs to supply to the mines		0.438	-0.410
SME capacity to meet orders is a barrier to supply to the mines		0.556	0.701
Tax policy affect SMEs to supply to the mines	.468	0.415	-0.478

Table 5. Varimax with Kaiser Normalization factor rotation on supplier barriers in the mining global value chain in Zambia.

Item	Component		
	One	Two	Three
Lack of financial support limits SMEs to supply to the mines	0.876		
Competition affect SMEs to supply to the mines	0.864		
Technology inhibits SMEs to supply to the mines	0.859		
Standards requirement is a barriers for SMEs to supply to the mines	0.726		
SME managerial skills limits SMEs to supply to the mines	0.534		
Tax policy affect SMEs to supply to the mines		0.769	
Registration process is a barrier for SMEs to supply to the mines		0.702	
Compliance to various Licenses affect SMEs to supply to the mines		0.599	0.580
SME capacity to meet orders is a barrier to supply to the mines			0.933

that load onto the same factor to identify common themes. The questions that load highly on factor 1 seem to all relate to barriers due to lack of support from private sector and this has been labeled as private sector barriers. The questions that load highly on factor 2 all relate to different aspects of lack of support from government statutory requirements; therefore has been labeled public sector barriers. The two questions that load highly on factor 3 all seem to relate to individual capacity of SMEs; therefore labeled as capacity barriers. This analysis seems to reveal that the initial questionnaire, in reality, is composed of three sub-scales: Private sector barriers, public sector barriers and individual capacity barriers (Table 6).

DISCUSSION

In the study, factor loadings estimated from 0.4 to 0.9 on identified themes were employed to make decisions on the extracted barriers in the mining global value chain. The higher the absolute factor loadings that the inherent item adds, the more it symbolized the underlying. This guaranteed the unidimensionality of the items of each

barrier (Field, 2009; Hair et al., 2010). Moreover, the researcher relied on established theoretical constructs to describe the barriers which reduced the threat to validity. Major outcomes that arose from the research data offered important insights and also were a significant step towards the discovery of the framework of barriers affecting suppliers in the mining global value chain in Zambia.

Private sector barriers

The mining global value chain is buyer driven and lead firms decide when and what to buy from the suitable suppliers. The chains are governed by the mining companies who set standards and other requirements that continue to exist as bottlenecks. In using value chain approach, key downstream private sector chain actors can be involved in the identification of key bottlenecks within the value chain that are mutual constraints for both upstream and downstream players. This may facilitate ownership and agreement on subsequent key interventions and policy reforms (Hoermann et al., 2010). Multi-stakeholder partnership strives to include

Table 6. Summary of supplier barriers in the mining global value chain in Zambia.

<p>Factor 1. Private sector barriers</p> <p>Lack of financial support limits SMEs to supply to the mines</p> <p>Competition affect SMEs to supply to the mines</p> <p>Technology inhibits SMEs to supply to the mines</p> <p>Standards requirement is a barriers for SMEs to supply to the mines</p> <p>SME managerial skills limits SMEs to supply to the mines</p>
<p>Factor 2. Public sector barriers</p> <p>Tax policy affect SMEs to supply to the mines</p> <p>Registration process is a barrier for SMEs to supply to the mines</p> <p>Compliance to various Licenses affect SMEs to supply to the mines</p>
<p>Factor 3. Individual capacity barriers</p> <p>Compliance to various Licenses affect SMEs to supply to the mines</p> <p>SME capacity to meet orders is a barrier to supply to the mines</p>

smallholders into the value chains, and enhance their sustainability through overcoming government failures, and increasing efficiency in the value chains. Supplier development programmes are one aspect to enhance supplier productivity. Indeed, the numerous demands towards suppliers to upgrade technology, exhibit financial prowess, show good managerial competencies, meet standard requirement and competitiveness is a great barrier in the mining global value chain (Gereffi, 2013; Cattaneo et al., 2013; OECD, 2013a)

Public sector barriers

Public sector organizations which may also be referred to as government agencies regulate the industry through various sound policies, laws, and regulations to ensure free and fair competition, and decent and productive work of all stakeholders. The regulation helps in reducing the regulatory constraints on SMEs growth and improves the business development, economic growth and job creation. However, lots of questions arise regarding regulation or legislation processes such as “Why is the government imposing too much regulation? When do SME feel that regulation is constraining the growth and productivity of SMEs? When is regulation becoming a red tape? And how may we identify areas where regulatory compliance costs are most troublesome for firms?: How may we review the regulations in order to identify opportunities for streamlining these processes and make them more efficient and less costly both in terms of real costs and opportunity costs for firms? It is true that some administrative procedures may have been relevant at some point in time, but have become redundant and barriers as they do not meet the intended objectives (Kaplinsky, 2010). In addition, there are compliance costs

which are regulations giving rise to direct and indirect costs for the firm when it has to comply with administrative procedures, certificates, specific licences, completing tax and value added tax (VAT) return forms. Some are real costs in terms of compulsory fees and rates and others are opportunity costs because of time consuming procedures, which a business owner need to spend time on. The different types of compliance costs can have significant implications for the businesses but also for their consumers to whom the costs may be passed on (Tijaja, 2013).

Individual capacity barriers

The global value chain has been instrumental in forming linkages with its downstream and upstream suppliers. It is true that although capacities and productivity have continued to be tipping points for lead firms to partner with local SMEs, the global value chains reduce the constraints (UNCTAD, 2010; Cattaneo et al., 2013). However, a number of factors determine participation in the global value chain which in itself is not easily adaptable by suppliers. These may include; capacity for scale of production which was one of the findings of the study as most suppliers were unable to meet the mining capacity requirements; availability of services necessary to support production and market integration which was also found as a barriers for SME growth and productivity. The other factor affecting supplier capacity include skills of the workforce matching the needs of global producers and buyers (Cattaneo et al., 2013:27), which was among the major findings of the study as suppliers cannot meet the required technology and standards in the mining global value chain. Suppliers also were faced with the problem of financial and trade support (OECD (2013a:25),

and the findings showed that most unsuccessful suppliers fall into this category.

Conclusion

This study investigated the supplier barriers in the mining global value chain in Zambia. A global value chain theoretical approach was employed to provide a conceptual framework for identifying the barriers affecting suppliers in the mining global value chain. This framework managed to provide answers to the problem faced in this study. In addition, this study provided empirical evidence on the barriers affecting suppliers to the mines. The empirical results revealed that there are public, private and individual supplier capacity barriers hindering suppliers to successfully supply to the mines. In the mining sector, public, private and individual supplier capacities were found to be major barriers. This study contributed to the body of knowledge in the field of business as well as the public domain through the suggested formation of the framework of unique supplier barriers. Managers and policy makers in the mining global value chain can now develop strategies to overcome such barriers to improve the position of suppliers in the mining global value chain.

Recommendations

A reduction of supplier barriers in the mining global value chain may help improve linkages of suppliers to the mines. The following measures could help deal with the most potent barriers as revealed in the study.

Private sector barriers

It is recommended to create a Supplier Development Working Group comprising executives from the mines, mining suppliers and contractors association of Zambia, NGOs, and the ministry of mines whose task will be to identify and implement global value chain governance strategies, economic, social and technological upgrading of SMEs, supplier and buyer partnerships, on-site technical support and business development and any economic program of the non-functional supplier development programme so that SMEs build capacity for competitiveness

Public sector barriers

The Ministry of Mines must setup a mining commission through an Act of Parliament whose objective among others will be to implement the the Mines and Minerals development Act No.11 of 2015, Section 31&32 that empowers it to give mining licences to those providing

employment, training and business promotion development with local stakeholders. In addition, Zambia National Content Development and Monitoring Board must be formed by the government through an Act of Parliament so that various “local Content Committees for specific economic sectors” will ensure that a certain share of factors of production required at various stages of the value chain is sourced from the domestic economy.

Individual capacity barriers

The Citizenship Economic Empowerment Commission must be transformed from merely offering micro-credits to selected sectors of the economy into a Business Incubator for SME development so that its local incubation facilities and innovation system are created for nurturing SMEs providing integrated technical and business development support to SMEs, mentoring and coaching SMEs, technology upgrading for competitiveness to SMEs participation in the mining global value chain

Limitation of the study

There were some limitations in the study in spite of the good methodological approach. The structured questionnaires may have provided a generalized phenomenon while disregarding some important insights. To address such limitations, the data presented in this study as well as any recommendations must be amplified with other essential datasets from further research from NGOs literature, government publication and mining sector. There is a further need for refining the barriers through an internal review supported by further collection of feedback from more stakeholders from within the mining global value chain.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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