

## EFFECTS OF FOREIGN DIRECT INVESTMENT IN THE MINING SECTOR ON THE GROWTH OF SMALL AND MEDIUM ENTERPRISES SUPPLY CHAIN IN ZAMBIA

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**ABSTRACT** : Zambia is a lower middle-income nation whose economic activities hinge on mining. This is reflected in the fact that mining contributes above 70% of the country's export earnings. It is a fact that Zambia is susceptible to harsh economic swings attributed to domestic and global factors. Among the major international factors that has been a contributing factor to the number of economic swings witnessed is the sharp drop in the inflow of Foreign Direct Investment (FDI). Without critical analysis FDIs are considered to have more positive outcomes on the economy as compared to the negative effects. However, in as far as Africa is concerned, FDIs introduce a whole package of positive things all believed to lead to economic growth as a result of increased capital injection in critical sectors of the economy (Nadide, 2014). Examples as we have seen in the financial and mining sectors of Zambia and transfer of skills especially technical ones which most emerging economies lack. All this seemingly contributes to the growth of the economy with Small and Medium Enterprises (SMEs) being catalysts to such growth (Jones & Wren, 2006). This is a one sided or positive view of this phenomenon which may be a different scenario if all sides were considered, considering the recent calls to restrict globalisation of economies so as to avoid economic colonialisation, sentiments from most African nations including Zambia know about, but do not talk or act upon. On the other hand, (Quak, 2019) empiricalevidence show that benefits of foreign investments in a host country do not flow to poor countries but to rich countries. This study however, reviews both the sum total productivity effects, including the concurrent results of Foreign Direct Investment on Small and Medium Enterprises in the mining sector which have a bearing on the growth of SMEs in the mining sector. In other words, this study looks at how the benefits of Foreign Direct Investments which according to (Ikiari, 2003) include transfer of technology (Hoekman & Javorcik, 2006), extra capital introduction relate to the growth of Small and Medium Enterprises in the mining sector.

**Keywords** – Competitiveness, Economic Growth, Foreign Direct Investment, Small and Medium Investment, Spillovers.

### I. INTRODUCTION

The world is said to be a global village. It is however, from the business point of view that this research study will focus on international business through Foreign Direct Investment (FDI) which is according to (Jones & Wren, 2006) is the name given to the process where a firm from a country provides capital to an existing or newly-created firm in another country. Zambia has not been left behind in regard to attracting FDI is concerned, Zambia's FDI inflows has been soaring in response to the good macroeconomic environment the country has had. Zambia's FDI inflows had skyrocketed from 694 million United States Dollars in 2009 to 2.1 billion United States Dollars in 2013. However, there has been a downward movement in FDI inflows from 1.5 billion United States dollars in 2015 to 547 million United States Dollars in 2019 (World Bank, 2020). The focus of the study is on the mining industry in Zambia who has the largest share of FDI and how FDI affects the development of the various SMEs that survive symbiotically. The Mining companies are by large the Multi-National Corporation and therefore are vehicles of FDI.

## II. Background of study

In the past decade economic planners have realised the importance of the small enterprise sector in achieving economic development this is because there is a direct relationship between well managed and flourishing Small and Medium Enterprises and the growth of the economy. According to (Govori, 2013) he states that in “Kosovo SMEs represent more than 99% of the total number of enterprises and their share in GDP amounts to more than 50%”. We can therefore state that the importance of SMEs in an economy cannot be over emphasised. This is also further supported by (Islam & Yusuf, 2011) who state that SMEs have long been believed to be important in supporting economic development within a country. Furthermore, according to (Islam & Yusuf, 2011) they provide remarkable statistics by stating that in Thailand, SMEs accounted for 76.1% per cent of all establishments in the manufacturing sector in the year 2007. Being the backbone of the economy in less developed countries with the low incomes, they help alleviate poverty and contribute to GDP growth. Organization for Economic Cooperation and Development (OECD) reports that more than 95% of enterprises in the OECD area are SMEs. These enterprises employ about 60% of private sector workers, make a major contribution in the field of innovation and support regional development and social cohesion. Interestingly SMEs in the mining sector have been open to foreign direct investment for the purpose of increasing production capacity and market share.

Nevertheless, many Governments including the Zambian government believe that FDI has spillover effects to host countries (Gerschewski, 2013) and that by allowing more foreign companies to operate in their economies, they will be creating employment. This is supported by (Smallborne & Welter, 2009) who state that investors can generate new jobs directly and also contribute to raising skill levels. Zambia has a target of creating one million new jobs by the end of the year 2021 and FDI is one of the vehicles to that end. However, what most governments have not done is to measure the impact, both negatively and positively or simply said, to be objective about the impact of FDI on the economy (Jones & Wren, 2006). In contrast, there is evidence that the flow of FDI doesn't necessarily lead to the development of local firms. According to (Calagni, 2003) he maintains that empirical evidence from the developed and developing world demonstrates that the positive spillover effects from FDI do not necessarily occur in practice. This is also supported by (Li & Luo, 2019) who explain that foreign firms have a strong incentive to prevent spillovers such as knowledge to their competitors which are local firms. Therefore, the effect of FDI on the growth or performance of SMEs has been a subject of debate by both the proponents and critics of FDI (Govori, 2013). The story of FDI in Zambia's Copperbelt and its impact on small and medium enterprises (SMEs) is a complex one with both positive and negative aspects. Here's a historical breakdown: Pre-Liberalization (Before 1990s): Large state-owned mining companies dominated the Copperbelt. Limited opportunities for SMEs due to centralized control and import restrictions. Some local businesses supplied basic goods and services to mine employees. Liberalization Era (1990s Onwards): Privatization of state-owned mines led to increased FDI. Positive Impacts: Increased investment in mining boosted overall economic activity. Some subcontracting opportunities arose for SMEs in areas like: Transportation, Security, catering, cleaning, potential for spillover effects (Gerschewski, 2013) - increased spending by mine employees could benefit local businesses. Negative Impacts: focus on large-scale mining often neglected SME development, many contracts went to foreign firms due to lack of local capacity. Limited technology transfer to local businesses (Hoekman & Javorcik, 2006). Unstable global copper prices led to boom-and-bust cycles, hurting SMEs. Recent Developments: Growing recognition of the need to support SMEs for sustainable development. Government initiatives like: Creating industrial parks near mines to attract suppliers, encouraging skills development programs for local entrepreneurs (Smallborne & Welter, 2009), promoting linkages between mines and SMEs. Challenges Persist: Access to finance remains a major hurdle for SMEs, competition from established foreign firms is tough, unforeseen events like global pandemics can disrupt supply chains. Kitwe, Mufulira, Chingola, and Chililabombwe: the impact of FDI on SMEs is likely to vary across these towns. Factors like: Mine size and type of operations, presence of support programs and local business skills and infrastructure would influence the opportunities for SMEs in each location. Overall: FDI in Copperbelt mining has had a mixed impact on SME growth. While some opportunities exist, challenges remain.

## III. Statement of the Problem

The impact of Foreign Direct Investment (FDI) in the Copperbelt's mining sector on the growth of Small and Medium Enterprises (SMEs) in Kitwe, Mufulira, Chingola, and Chililabombwe is a complex issue with limited, location-specific data. While there have been valuable opportunities to explore the potential benefits and drawbacks of FDI for local businesses. The relationship between Foreign Direct Investment (FDI) in the Copperbelt's mining sector and the growth of Small and Medium Enterprises (SMEs) in the specific cities of Kitwe, Mufulira, Chingola, and Chililabombwe has been of significance challenge. With the understanding that the Copperbelt is rich in mineral resources, attracting significant FDI in mining, SMEs are crucial for economic diversification and job creation, and its impact of FDI on SMEs in the mining regions can be complex, with both positive and negative effects. The main challenges have been considered with the

aggregation for the entire Copperbelt province with a focus on national trends even though may not be directly related to enterprise growth. The problem has also been that as a region and as a national economic hub a number of trading procurement opportunities for SMEs to be contracted with the mining companies have been a challenge, also affected by not benefiting from the access to the economic activity from FDIs, and some not gaining from the skill development from the training offered by mining firms.

#### IV. Research questions

- i. To what extent has FDI in the Copperbelt's mining sector contributed to the growth of SMEs in Kitwe, Mufulira, Chingola, and Chililabombwe?
- ii. Are there specific types of SMEs that have benefited more from FDI than others?
- iii. What are the key challenges faced by SMEs in capturing opportunities arising from FDI in the mining sector?
- iv. What policies and initiatives could be implemented to strengthen linkages between foreign mining companies and local SMEs in the Copperbelt?

#### V. Justification of research

More specifically, the study aims to contribute to the understanding of the dynamics of the impact of FDI on the SMEs in the Mining sector, what benefits accrue and what detriments arise thereof. The researcher hopes that this knowledge will contribute to the development of policies that can help to strengthen the SMEs sector in Zambia through promoting integration and potential benefits from the global economy as well as its own home-grown economic remedies (Jones & Wren, 2006). Secondly, it is also expected to contribute to the development of policies designed to strengthen the benefits of foreign investment to local economies through the facilitation of SMEs trade and investment linkages and capacity building of local SMEs to take advantage of new market opportunities created (Shahid, 2013).

#### VI. Scope of study

Focus of the study was limited to SMEs operating in the Mining Sector of the Copperbelt Province specifically in Kitwe, Mufulira, Chingola and Chililabombwe. Further, this research is also limited to evaluation of the effects of FDI in the mining sector with no measure to the impact of other factors such as Covid-19.

#### LITERATURE REVIEW

##### VII. Foreign direct investment

Foreign Direct Investment (FDI) is the investment into production or business in an economy by an individual or company of another country (Narula & Portelli, 2004), either by buying a company in the target country or by expanding operations of an existing company for the purpose of increasing productivity and market share. Going by this definition we can also state that FDI not only are they targeted at already existing businesses but also establish new ones.

##### VIII. The importance of FDI to the host country

The importance of FDI to the host country is quite remarkable bring into the host country (Ikiari, 2003), a range of productive assets, including long-term foreign capital, entrepreneurship (Smallborne & Welter, 2009), technology, skills, innovative capacity, and managerial, organizational and export marketing know-how. Suffice to say, these are the factors that determine the growth and the very survival of any SME in the global economy (Govori, 2013). To start with, because a large percentage of FDI is through Multi-National Corporations (MNC), their importance as a source of capital cannot be over emphasized. This is supported by (Lall & Narula, 2004) where the role of multinational enterprises as a source of capital and technology has grown over time, as other sources of capital have become scarce or more volatile.

Secondly, the neoclassical theorists argue that FDI spurs long-run growth through such variables as research and development and human capital (Ikiari, 2003). The greatest contribution of FDI to economic growth occurs through technology transfer (Hoekman & Javorcik, 2006). We can, therefore, indicate that Zambia being a developing country lagging in technology, this role of FDI becomes very critical. Thirdly, apart from lagging behind in technology, Zambia also lags behind in research due to lack of capacity and this where FDI bridges the gap. This is echoed with an indication (Mucchielli & Jabbour, 2004) for the developing countries, where lack of the capacity to undertake research and development activities and to generate technological innovations (Lall, & Narula, 2004); therefore, rely on foreign source of technological innovations in their growth process.

### IX. FDI and Economic Growth

Existing research explores the potential benefits of FDI for host economies, including job creation, technology transfer, and infrastructure development (Aghion et al., 2008). However, concerns exist regarding crowding-out effects on domestic firms and limited linkages with local businesses (Jenkins, 2010).

### X. FDI and SMEs

Studies suggest that SMEs can benefit from FDI through spillover effects, such as access to technology, skills training, and participation in supply chains (Humphrey, 2000). Conversely, competition from foreign-owned firms and limited access to finance can hinder SME growth (Meyer-Stamer, 2014)

### XI. Competitiveness through Transnational Corporations

Furthermore, FDI also affect SMEs' growth through spillovers from what are known as backward linkages (Govori, 2013), Forward linkages, and Horizontal linkages. Backward linkage as the relation between domestic and foreign firms when the domestic firm operates as the input supplier of the sector that multinational operates (Sayek & Koyem, 2009). This means that the local enterprises learn to produce high quality goods to meet the demands from Transnational Corporations thereby making them competitive. Not only that, but the local firms will also benefit from technology from investing transnational corporations which enhances their efficiency. This (Dunning, 1992)backward linkages with suppliers are the extent to which components, materials and services are sourced from within the host economy (Cantwell, 2005). Such linkages can range from arm's length market transactions to deep, long-term inter-firm relationships (Jacob et.al, 2020). Hence, through backward linkages (Cantwell, 2005), local SMEs are given an opportunity to flourish. Secondly, spillover advantages are also through forward linkages (Cantwell, 2005). To explain this, in a situation where a multinational company plays a role of providing inputs and Local SMEs use the inputs to provide a product or service such as forward linkage. According to Jacob et.al, (2020) forward linkages with customers include marketing outlets, which may be outsourced. Examples include: petrol stations and restaurant chains; and linkages with industrial buyers (Jacob et.al, 2020), though, for example, value-added after-sales services" This entails that SMEs benefit in a number of ways such as through technology (Hoekman & Javorcik, 2006) and other support provided by the multinational corporations. The horizontal spill overs may be realized through imitating the foreign technologies, techniques, and managerial skills (Sayek & Koyem, 2009). Also, to gain access to more efficient techniques, local firms may hire workers trained by multinationals (namely, labour turnover). However, this has remained a questionable benefit where (Hoekman & Javorcik, 2006) careful analysis done on Morocco cast a doubt on the existence of FDI spill overs through horizontal linkages.

### XII. Classification of SMEs

Providing a specific definition of an SME has over the years proved to be a challenge, owing to the fact that there is no specific agreed definition. However, a number of definitions are applied mostly among OECD (Organisation for Economic Co-operation and Development) nations whose definition is based on the number of employees (Lall, & Narula, 2004). SMEs are generally autonomous non subsidiary firms with a specific number of employees. In the United States SMEs are considered to firms with less than 500 employees while in the European union an SME is defined as a firm with not more than 250 employees. However, a number of countries define SMEs as firms with not more than 200 employees (OECD, 2005).

According to small enterprises Act number 29 of the laws of Zambia, enterprises are classified in two categories. The two categories are micro and small enterprises. Despite the nonexistence of a specific definition for medium sized enterprises, according to according to (GRZ, 1996) "micro" means any business- with a total investment of K 10,000,000.00 land and buildings excluded: with up to 10 employees. Small enterprises are defined as any business: whose annual turnover is not beyond K20,000,000.00, whose annual turnover does not exceed K 8,000,000.00; and employing up to 30 people.

Small Business and medium Business enterprise is defined as follows (MTCI, 2007): A small business enterprise" means any business enterprise: whose sum of total investment with land and buildings excluded, is not beyond: K 500,000.00 in plant and machinery for manufacturing and processing businesses, K 100,000.00 for trading and service proving enterprises. Whose turnover for the year is not more than K800, 000.00. Employing up to 30 persons, while on the other hand, a medium business enterprise is defined as follows: an enterprise whose sum total investment with land and buildings excluded is not beyond: K 1,800,000.00 in plant and machinery for manufacturing and processing firms. K 600,000.00 for trading and service providing firms. An enterprise whose total annual sales do not exceed K 5,000,000.00. An enterprise with up to 100 employees (MTCI, 2007). Its worthy noting that, micro, small and medium enterprise classifications change from time to time as the government revises its policies in this sector.



### XIII. Theoretical Framework

A lot of benefits accrue as a result Foreign Direct Investments which normally benefit businesses in the host country. The effects of FDI on local SMEs is quite remarkable, FDI brings into the host country (Ikiari, 2003), a range of productive assets, including long-term foreign capital, entrepreneurship, technology, skills, innovative capacity, and managerial, organizational and export marketing know-how. Therefore, an increase in FDI should result in the growth of SMEs in the Mining sector (Govori, 2013). This growth should be measured in terms of increase in profitability, revenue, value of net assets and the number of employees in SMEs.

### XIV. Productivity Spillovers

While there isn't a single definitive source for the Productivity Spillovers theory, here's some relevant literature to understand its application to your question: Blomstrom & Kokko (1996): In their work, they analyze the importance of considering local conditions that influence how effectively knowledge and skills are transferred from foreign firms to domestic ones. This theory suggests that foreign direct investment (FDI) can have positive impacts beyond the investing firm itself. These positive effects can ripple through the host economy (Jones & Wren, 2006), benefiting domestic firms, particularly small and medium enterprises (SMEs). This is crucial in the context of FDI spillover effects on SMEs. Javorcik (2004): This study explores the positive effects of FDI on productivity in developing countries, including knowledge spillovers that can benefit local firms. Relevance to FDI in Mining & SME growth: The Productivity Spillovers theory suggests that FDI can bring positive externalities to SMEs through knowledge transfer (Feinberg & Majumdar, 2001). In the mining sector context: Foreign mining companies might possess superior technologies, management practices, and expertise. Local SMEs working alongside or supplying these foreign firms could benefit from these advancements through spillover effects (Gerschewski, 2013). Relevance to FDI in Mining & SME growth: The Productivity Spillovers theory suggests that FDI can bring positive externalities to SMEs through knowledge transfer (Mucchielli, 2004). In the mining sector context: Foreign mining companies might possess superior technologies, management practices, and expertise. Local SMEs working alongside or supplying these foreign firms could benefit from these advancements through spillover effects.

Spillovers are evident when the introduction of a multinational company in an industry result in productivity (Ari, Mario, & Blomstrom, 2000) or efficiency gains in the domestic firms and that the multinational company is not able to internalise the complete value of these gains or benefits. In other words, the proof of a spillover is where a domestic firm in a host country improves its productivity as a direct consequence of the presence of a multinational company (Frost et.al. 2002). Further, spillovers are not limited to productivity only but also extend to stiff competition in the host county (Feinberg & Majumdar, 2001). As a direct consequence of stiff competition local firms are compelled to utilise the existing technology and resources more efficiently. Besides the utilisation of the existing technology and efficiency use of resources (Hoekman & Javorcik, 2006) domestic firms are further forced to search for new, and more efficient, technologies in order to survive.

### XV. Gaps in the Literature

While there's extensive research on the impact of FDI in the mining sector on national economies, studies specifically examining its effects on Small and Medium Enterprises (SMEs) within Zambia's Copperbelt Province, particularly Kitwe, Mufulira, Chingola, and Chililabombwe, reveal some significant gaps. Here's a breakdown of areas requiring further exploration: Existing literature often focuses on macro-level impacts of FDI on economic growth (Nadide, 2014), neglecting the intricate linkages between FDI and SME development (Singh & Jun, 2010). More research is needed to understand how FDI in Copperbelt's mining sector influences ME subcontracting, technology transfer (Hoekman & Javorcik, 2006), and skill development within Kitwe, Mufulira, Chingola, and Chililabombwe (Humphrey, 2000). Studies haven't adequately explored the nature and extent of "spillover effects" from FDI to SMEs in the Copperbelt. Do these mining related FDIs create backward or forward linkages (Jacob et.al, 2020) for SMEs in Kitwe, Mufulira, Chingola, and Chililabombwe? How can these linkages be strengthened to foster SME growth (Coe & Helpman, 1995). The major roads to recovery 'is the institution of mechanisms that will protect the national sovereignty of our countries in terms of economic development (Rawlings, 2010). It is now more than ever clear that the International Financial Institutions were wrong to tell African states to adopt a hands-off approach and that this poor advice weakened African economies and put us in a poor position to withstand the current shocks".

### XVI. Research Methodology

The study was done using a survey and with the method of quantitative research design for the topic (Ranjit, 2011). It indicates that a quantitative research based on traditional scientific methods, which generates numerical data and usually seeks to establish causal relationships between two or more variables, using statistical methods to test the strength and significance of the relationships. This design has been adopted

because the variables that this research is to measure are quantitative in nature such as increase in revenue, net assets, number of employees and profits in SMEs.

**VVII. Sampling frame**

The study population for this research comprises of Small and Medium Enterprises involved in mining through service provision or through the supply of goods such as raw materials and other commodities needed by major mining companies. For the sampling technique, stratified random Sampling: This is recommended to ensure representativeness of different industries and FDI dependence levels within the SME population dividing the population into strata based on the chosen criteria (industry, FDI dependence). Proportionately allocated the desired sample size to each stratum based on its share of the total population (e.g., if there are more service-based SMEs than manufacturing, allocate a larger portion of the sample to service). Within each stratum, randomly select SMEs to achieve the allocated sample size.

**XVII. Sample size**

Since the sampling frame is slightly above 700 SMEs in the mining sector for those known and registered, 100 SMEs will constitute the sample size for this research. Considering the determining of the desired sample size using statistical methods considering factors like: Confidence level 95%, Margin of error 9%, expected effect size and Population size (estimate the number of SMEs in the target area) (Saunders et al. 2007).

**XVIII. Data collection tools**

A delivery and collected questionnaire will be used to gather information for the quantitative study (Ranjit, 2011). This is on account of their low cost, minimal resource requirements and potential capability to capture only the needed data. This questionnaire was meant to capture data on: SME characteristics (size, age, industry), access to finance and resources, linkages with mining companies, and the perceived impact of FDI on SME growth (Frimpong, 2013) (e.g., employment opportunities, market access).

**XIX. Time horizon**

Since this research attempts to measure variables in two different periods a longitudinal study approach will be implemented. The Cross-sectional study is appropriate for this research because in determining the changes in SMEs’ sales, profits, value of assets and number of employees over the period of time, only through this approach will the findings be considered valid (Saunders et al. 2007).

**XX. Methods of analysis**

This is quantitative research with the aim of comparing the changes in variables such as revenue, profits, total assets, and number of employees in SMEs in the mining sector of Zambia in the periods of high and low FDI inflows. Using SPSS software, Paired Samples T-Test will be used to determine whether there is statistical evidence that the mean difference between the paired observations is significantly different from zero (Saunders et al. 2007). The paired samples T-Test is appropriate because it designed for measurements taken under two different times.

**DATA PRESENTATION AND ANALYSIS**

**XXII. Characteristics Of Respondents**

Most businesses are concentrated in the field of service provision such repairs, cleaning, security, and laboratory services which represented 54% of the total respondents with 28% engaged in trading activities such as supply of raw materials to the major mining companies.

**Types Of Businesses**

		Frequency		Valid Percent	Cumulative Percent
Valid	Manufacturing	7		7.0	7.0
	Service	54		54.0	61.0
	Trading	28		28.0	89.0
	Construction	11		11.0	100.0
	Total	100		100.0	

**INFLOW OF FDIS**

**Percentage Increase in Sales**

**Percentage increase in sales (2009-2013)**

		Frequency		Valid Percent	Cumulative Percent
Valid	0 – 10	7		7.0	7.0
	20 – 30	22		22.0	29.0

	30 – 40	48		48.0	77.0
	40 – 50	8		8.0	85.0
	51 - 100	15		15.0	100.0
	Total	100		100.0	

Percentage increase in sales (2015-2019)					
		Frequency		Valid Percent	Cumulative Percent
Valid	1 – 10	43		43.0	43.0
	20 – 30	45		45.0	88.0
	30 – 40	10		10.0	98.0
	40 – 50	1		1.0	99.0
	51 – 100	1		1.0	100.0
	Total	100		100.0	

PAIRED SAMPLES STATISTICS (SALES)					
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Percentage increase in sales (2009-2013)	2.02	100	1.092	.109
	Percentage increase in sales (2015-2019)	.72	100	.766	.077

PAIRED SAMPLE TEST FOR SALES (2009-2013) : (2015-2019)									
		Paired Differences					T	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Percentage increase in sales (2009-2013)	1.300	1.049	.105	1.092	1.508	12.389	99	.000
	Percentage increase in sales (2015-2019)								

**Data Interpretation for Sales**

Since we are endeavoring to establish the differences as the subtitle in the above table shows. From the output, above it could be deduced at 95% confidence level that there was a statistically significant difference in the sales between the period (2009-2013) and the period (2015-2019) as revealed by the p-value (0.000) in the table which is less than 5%. This also shows that the mean sales differences in the periods under review were significant. Further, the period (2009 – 2013) mean sales of 2.02 was higher than the period (2015 – 2019) mean sales of 0.72.

Percentage increase in the number of employees (2009-2013)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10%	6	6.0	6.0	6.0
	20%-30%	32	32.0	32.0	38.0
	30%-40%	47	47.0	47.0	85.0
	40%-50%	4	4.0	4.0	89.0
	>50%	11	11.0	11.0	100.0
	Total	100	100.0	100.0	

Percentage increase in the number of employees (2015-2019)					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10%	56	56.0	56.0	56.0
	20%-30%	35	35.0	35.0	91.0
	30%-40%	5	5.0	5.0	96.0
	40%-50%	2	2.0	2.0	98.0

>50%	2	2.0	2.0	100.0
Total	100	100.0	100.0	

A potential positive correlation between Foreign Direct Investment (FDI) in the mining sector and the growth of Small and Medium Enterprises (SMEs) in Zambia's Copperbelt Province, particularly during the 2009-2013 period. This is indicated by the higher percentage increase in employee numbers for SMEs during that time frame compared to the 2015-2019 period. Based on what you've described, it appears there likely was a significant difference in employee growth between the two periods (2009-2013 and 2015-2019). Here's the breakdown: Employee Growth: 2009-2013: 20% to 40% increase 2015-2019: Less than 10% to 30% increase. The percentage increase in employees is generally higher in the 2009-2013 period compared to 2015-2019. The p-value you mentioned (less than 0.05) is typically considered statistically significant. This suggests that the observed difference in employee growth between the two periods is unlikely due to random chance. In simpler terms, the test provides evidence that the increase in employee numbers during the first period (2009-2013) was statistically greater than the increase during the second period (2015-2019).

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Percentage increase in the number of employees (2009-2013)	1.82	100	1.009	.101
	Percentage increase in the number of employees (2015-2019)	.59	100	.842	.084

	Paired Differences	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
					Lower	Upper			
					Pair 1	Percentage increase in the number of employees (2009-2013) - Percentage increase in the number of employees (2015-2019)			

Based on the information provided, the conclusion seems well supported. Here's a breakdown: Statistically Significant Difference: The p-value (0.000) being less than 0.05 (commonly used for 95% confidence level) indicates a statistically significant difference in employee numbers between the two periods. This aligns with the concept of statistical significance, where a low p-value suggests the observed difference is unlikely due to chance. Mean Comparison: The finding that the mean for 2009-2013 (1.82) is higher than the mean for 2015-2019 (0.59) suggests that on average, there were more employees in the earlier period.

**Percentage increase in the value of net assets (2009-2013)**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10%	5	5.0	5.0
	20%-30%	43	43.0	48.0
	30%-40%	38	38.0	86.0
	40%-50%	8	8.0	94.0
	>50%	6	6.0	100.0
	Total	100	100.0	100.0



**Percentage increase in the value of net assets (2015-2019)**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<10%	57	57.0	57.0
	20%-30%	35	35.0	92.0
	30%-40%	5	5.0	97.0
	40%-50%	2	2.0	99.0
	>50%	1	1.0	100.0
	Total	100	100.0	100.0

From this information above, the percentage increase in the value of assets for the period 2009 – 2013 were mostly between 20% to 40% as compared to the 2015 – 2019 period in which the increase was between less than 10% to 30%. However, by using paired sample test to establish any significant difference, the following were the results. Asset Growth: Asset growth for the period 2009-2013 was higher compared to 2015-2019. This suggests a potential slowdown in economic activity during the latter period. Possible Positive Effects: Increased Demand: FDI can lead to increased mining activity, potentially creating demand for goods and services from local SMEs. Infrastructure Development (Lall, & Narula, 2004): Mining companies may invest in infrastructure like roads and power, benefiting surrounding communities and businesses (Islam & Yusuf,2011). Skills Development: Training programs for mining employees could indirectly benefit SMEs by creating a more skilled workforce. Possible Negative Effects: Limited Linkages: Large mining companies may import goods and services, bypassing local businesses. Resource Competition: Increased mining activity could lead to competition for resources like land and water, potentially harming SMEs in other sectors. Environmental Damage: Mining can have negative environmental impacts, affecting livelihoods and hindering growth in eco-tourism or agriculture.

**Paired samples statistics for value of assets**

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Percentage increase in the value of net assets (2009-2013)	1.67	100	.922
	Percentage increase in the value of net assets (2015-2019)	.55	100	.770

**Paired Samples Test For Value Of Assets**

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	Percentage increase in the value of net assets (2009-2013) - Percentage increase in the value of net assets (2015-2019)	1.120	.820	.082	.957	1.283	13.659	.000

From the output in above we can deduce that at 95% confidence level there was a statistically significant difference in the value of net assets between the period (2009-2013) and the period (2015-2019) as revealed by the p-value (0.000) in the table which is less than 5%. Statistically Significant Difference: There was a statistically significant difference in net asset values between 2009-2013 and 2015-2019. This is likely determined by a statistical test, and the p-value (0.000) being less than 0.05 (common significance level) confirms this. Mean Value Difference: The mean value of net assets in 2009-2013 (1.67) was higher than the mean value in 2015-2019 (0.55). This indicates a decrease in net assets on average during the later period.

**Percentage increase in profits (2009-2013)**

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	<10%	4	4.0	4.0	4.0
	20%-30%	42	42.0	42.0	46.0
	30%-40%	38	38.0	38.0	84.0
	40%-50%	6	6.0	6.0	90.0
	>50%	10	10.0	10.0	100.0
	Total	100	100.0	100.0	

Percentage increase in profits (2015-2019)

	Frequency	Percent	Valid Percent	Cumulative Percent	
Valid	<10%	48	48.0	48.0	48.0
	20%-30%	42	42.0	42.0	90.0
	30%-40%	7	7.0	7.0	97.0
	40%-50%	2	2.0	2.0	99.0
	>50%	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

From the observations: Profit increases were generally higher between 2009 and 2013 compared to 2015 and 2019. (This suggests a possible trend of rising profits slowing down over the years), the paired samples t-test to statistically assess this difference was used. For the Paired Samples t-test: A paired samples t-test is a statistical test used to compare the means of two related groups. The groups are the profit changes for the same companies/industries in the two time periods (2009-2013 and 2015-2019). By comparing the means, this was used to determine the statistically significant difference in profit increases between the two periods. Without the actual results of the t-test: it could have been difficult to say definitively whether the observed difference is statistically significant. So, a significant result (usually indicated by a p-value less than 0.05) did suggest that the profit growth slowdown is likely not due to random chance.

**Paired Samples Statistics (profits)**

	Mean	N	Std. Deviation	Std. Error Mean	
Pair 1	Percentage increase in profits (2009-2013)	1.76	100	.996	.100
	Percentage increase in profits (2015-2019)	.66	100	.781	.078

**Paired Samples Test (profits)**

	Paired Differences					t	Df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1	Percentage increase in profits (2009-2013) - Percentage increase in profits (2015-2019)	1.100	.916	.092	.918	1.282	12.014	.000

From the output above we can deduced that at 95% confidence level, there was a statistically significant difference in profits between the period (2009-2013) and the period (2015 -2019) as revealed by the p-value (0.000) in the table which is less than 5%. This also shows that the mean profit differences in the periods under review were significant. Further, the period (2009 - 2013) had a mean profit of 1.76 which was higher than the period (2015 – 2019) whose mean for profits was 0.66.

### **XXIII. CONCLUSION AND RECOMMENDATIONS**

From the analysis done, FDIs determine the performance or growth of SMEs. This is because in the period of low FDI inflow the performance indicators such as sales, number of employees, values of net assets and profits do not show any improvement as compared to the periods with high FDI inflows in which significant improvements are recorded. This agrees with the concept of effects of spill overs on SMEs through backward, forward, and horizontal linkages (Jacob et.al, 2020).(Dunning, 1992)backward linkages with suppliers are the extent to which components, materials and services are sourced from within the host economy (Jones & Wren, 2006). The following research objectives have been considered from the questions:

#### **XXIII. Extent of FDI's Contribution to SME Growth**

Examining job creation within the mining sector due to FDI can indicate a potential increase in demand for goods and services, benefiting SMEs in sectors like catering, transportation, and logistics. Enhancing mining's contribution to the Zambian economy and society - Mining for Zambia.

#### **XXIV. SME Types Benefiting More**

Studies suggest that SMEs involved in supplying inputs, providing maintenance services, or undertaking construction projects for mining companies tend to benefit more directly from FDI (World Bank, 2014).

#### **XXV. Challenges Faced by SMEs**

Limited access to finance and technology (Hoekman & Javorcik, 2006) can hinder SMEs' ability to meet the standards and compete for contracts with large mining (World Bank, 2014). Complex procurement processes of large mining firms can also pose a challenge for SMEs, (Development Southern Africa, 2013).

#### **XXVI. Strengthening linkages between SMEs and Mining Companies**

Initiatives like subcontracting programs or supplier development schemes implemented by mining companies can create opportunities for SMEs (World Bank, 2014). Government policies promoting linkages through tax breaks for companies sourcing from local SMEs or establishing business clusters around mining operations could be explored (Development Southern Africa, 2013).

#### **XXVII. Findings Confirm Conclusions of Other Studies.**

Therefore, the higher the FDIs inflow into Zambia's mining sector the more raw materials are required as supplied by SMEs which improves their performance through increased revenue. And increased demand for input requires an increase in labour to meet the demands (Sayek & Koyem, 2009), hence the increase in the number of employees. To explain further, this change in performance is due to horizontal linkages (Sayek & Koyem, 2009), "The horizontal spill overs may be realized through imitating the foreign technologies, techniques, and managerial skills. This means that with increased FDI inflow in the mining sector of Zambia, the more locals SME proprietors gain managerial skills and technologies which positively improve the performance of their businesses (Islam & Yusuf,2011).

#### **XXVIII. Recommendations**

Having established the relationship that exist from the findings of this research and the works done by others it can be deduced that FDI impacts on the performance of SMEs.The significance of SMEs in any given economy cannot be over emphasised. According to (Frimpong, 2013) he writes that on average 65% of total employment is attributed to SMEs whose also contribute in excess of 55% of GDP. This is also supported by (Department of Statistics Malaysia, 2012) which indicates that in developed countries such as Taiwan, Japan and Korea, economic growth is mainly generated by the activities of SMEs. Further statistics show that SMEs contribution towards GDP in Korea stood at 50%, Japan at 53%, German at 57% and China at 60%. In addition, according to (OCED, 2008)they show that in any country SMEs constitute an average of 60-70% of the total employment.The following are the recommendations which if implemented can assist in improving the performance of SMEs and thereby bringing all the benefits that go with high performing SMEs to the economy in general.

#### **XXIX. Government financing**

Firstly, most SMEs fail to compete and survive due to their limited capital and their complete dependence on FDI for working capital. This dependence has resulted into their inconsistency in terms of performance as they rely on FDI. To overcome this, SMEs should be helped with capital by government as most banks require collateral on such loans which most SMEs lack. However, this should be implemented under

restrict conditions to SMEs that can prove they have the necessary business skills to manage their businesses effectively (Islam & Yusuf, 2011). When this is implemented, FDI will simply supplement on the already flourishing SMEs and result into insignificant differences in terms of performance as levels of FDI inflow change. In addition, all SMEs funded by government should be monitored closely so that if they appear to be failing quick interventions can be implemented so that the businesses do not collapse but improve and reduce the probability of defaulting on the loans, which in return can be used to finance other SMEs.

### XXX. Restriction of foreign owned SMEs

Secondly, Zambian owned SMEs are normally disadvantaged as MNCs prefer foreign SMEs to source raw material and other services required in their operations. Therefore, government should come up with a policy of restricting the number of foreign owned SMEs in a given sector. Besides, MNCs should by policy be required to partner with local SMEs (Kweka, & Fadhili, 2020) which will enhance quick transfer of technologies and managerial skill to the locals and in turn will improve the performance of SMEs.

### XXXI. Tax incentives

In addition, in order to reduce the effects of fluctuating levels of FDIs inflow on the performance of SMEs and accelerate growth, SMEs should be taxed differently in way that will help them grow. By reducing the amount of tax payable by SMEs, it reduces their cost of doing business which increase their profits, accelerate their growth, and enable them to have the necessary resources to adapt to new technologies as required by MNC.

### XXXII. Increasing SMEs' absorptive capacity

The reasons for limited spillovers between MNC and SMEs in the mining sector is lack of absorptive capacity by local firms. In order to increase their capacity to absorb technologies, government should put in place policies that aim to enhance the transfer of technology and knowledge from MNCs to local SMEs (Hoekman & Javorcik, 2006). This can be done through supplier development programs in which SMEs commit themselves to using methods and technologies as prescribed by MNCs in order to qualify products and services to be supplied to MNCs (Lall, & Narula, 2004).

### XXXIII. Limitations and Directions for Future Research

This study concentrated on the effects of FDI on the performance of SMEs in Zambia's mining sector. It specifically focused on changes recorded in variables such as sales, profits, value of nets and the number of employees in relation to the levels of FDI. In this study, empirical evidence indicates the existence of spillovers between MNC and SMEs in the mining sector. This goes to show that linkages do exist therefore, future studies should look at the factors affecting the strength of the established linkages whose policy implication if put to work can result in increased volumes of spillovers.

### XXXIV. Conclusions

Hence, it has been established that empirical evidence points to the fact that spillovers from FDI in Zambian's mining sector on SMEs do exist. This is as reflected in the data processes whose outcome show a statistically significant difference in all variables that were measured side by side between the period of high FDI inflows and the period of low FDI inflows. Further, it has also been established that how much of the spillovers go to SMEs in the mining sector depend significantly on two factors. Governments' ability to attract FDI and the SMEs' absorptive capacity. This means that high FDI inflow results in the availability of potential spillovers which can only be harnessed through government policy and the SMEs absorptive capacity. In addition, the channels or linkages through which spillovers get to SMEs have been identified which may be used in policy specification. Therefore, any government policy that aims at increasing FDI inflow and simultaneously promote the strengthening spillover linkages and the extent to which SMEs are able to expand their absorptive capacity will determine the magnitude of spillovers effects.

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