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The Impact of Inward Foreign Direct Investment Spillovers on Small and Medium Enterprise Performance

(Case Study: Zain Telecommunication Company)

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Abstract:- This paper provides theoretical and imperical insights into the Many Sudanese small and medium-sized enterprises have struggled over the last three decades; some of these enterprises went out of business while othersare still struggling and desperate to have new economic reform that provides them with favorable policies as well as greater access to foreign investments spillovers, therefore in responses to that this study is aimed to explore the impact of foreign direct investment Spillovers on small and medium enterprises performance case Zain telecom Sudan. The study thought to establish the impact of foreign direct investment spillovers namely (Finance, Technology & Skill spillovers) on small and medium enterprises' performance. A sample of 30 respondents was selected from juniors, seniors, and top staff who worked at Zain in various departments, including marketing, human resources, finance, and customer services, using a convenience sampling technique in which a Structured questionnaire was distributed among them. To test the significant impact, Statistical Package for Social Science (SPSS) used multiple linear regression to test the significant impact. The finding suggests both Finance and Skill spillovers have a statistically significant impact on small and medium enterprises' performance; however, it showed that Technology spillovers have no statistically significant impact on small and medium enterprises' performance. Moreover, the study recommends that Zain telecom invest heavily in human resources by sending them abroad to be highly skillful, have the better technical ability of copying foreign technologies and be creative and innovative by integrating complex systems.Moreover, it suggested that the Sudanese government should stimulate the investment climate and establish a policy for the sake of re-attracting better technological resources through foreign direct investment and promoting the private sector in which small and medium enterprises are innovative by providing them with international linkages and access to more funding and international relationships.

I. INTRODUCTION

Foreign direct investment (FDI) plays an efficient and effective role in the contomporayglobal business. It can provide firms with facilities such as capital, technology and skills fostering them to have a leapfrog in their local markets. Therefore, FDI considered to be a fundamental development channel for many developing countries. It brings financing, advanced technology, and know-how to host countries. (Brussevich& Shawn ,2019). For many developing countries, FDI inflows is a major source of external financing thereby provides important means of implementation of growth of the private sector and sustainable development goals(bdelmawla&Mudawi, 2015). Thus, FDI provides spillovers that often benefit small and medium-sizedentreprises in the host country.SMEs playing acrucial role in developing the local economies in many counties, especially in developing countries. This role often appears in promoting growth by increasing employment, generating wealth, and making good use of available resources. Yet into the Sudanese context, (SMEs) are defined by the size of the organization's employees. So, a Small Enterprise defined as that enterprise with a staff fewer than 10 employees. (Omer Ali BabikerEltahir, ,2018). In particular, they are considerd a cornerstone due to the availability of different types of inputs in the country. (Mohammed El-Amin Elsanoosi,2020). Sudan has confront the problem of lack of capitaloriginating from the inherent incapability to save.

Recent years have seen a policy shift to “finance for all” (Chibba, 2009). In particular, finance for Small and Medium-sized Enterprise (SMEs), are considered to be dynamic enterprises and job generators (Ardic, Mylenko, & Saltane, 2011).SMEs tend to suffersubstantialrestraints in finance(Demirgüç-Kunt& Klapper, 2013), due to the political restraints that hinders the accessing to financial centers, lack of guarantee and other barriers, poor business infrastructure, political unpredictability, lack of enforcement mechanisms, and unqulaified financial systems. (Abd Alla et al., 2015)Sudan is categorizedas a low per capita income and high dependency ratio. Accordingly, investmentsare humble, in all sectors. (Rajak, 2020)Under such situations, foreign capital is foreseeable to overcome the capital deficiency plight.Moreove, the major financial performance problems are insufficient market intelligence, slow operations, and expensive and unskilled labor are the major financial performance complications.

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Theoretically,after going through the literature review, no study empirically explores the impact of foreign direct investment (FDI) Spillovers, namely finance, technology, and skill, on small and medium enterprises' performance in Sudan. Therefore, how the performance of SMEs is affected by FDI spillovers is going to be the emphasis of this study.

Accordingly, the questions aimed to answer are, do foreign direct investment spillovers significantly impact SMEs performance? Does finance spillover have a noteworthyeffect on SMEs performance?Does technology spillover have a noteworthyeffecton SMEs performance? Does skill spillover have a noteworthy effectonon SMEs performance?

The main objective of this study is to explore the impact of foreign direct investment Spillovers on small and medium enterprises performance case study Zain telecommunication in Sudan.

The specific objectives are to spot the light on the impact of finance spillover, technology spillover, skill spillover on SMEs performance.

II. LITERATURE REVIEW

A. Small and medium enterprises SMEs

There are several definitions of SMEs. The definitions differ based on the countries' capabilities with respect to their variations in socioeconomic structures. Even though there is no international agreement on the definition of SMEs. The most agreed criteria are the size of employees, annual turnover, and annual balance sheet total. Accordingly, micro-enterprises and SMEs are defined as those enterprises that hire below 250 workers and have annual revenue of no more than EUR 43 million (Prenaj& Ismajli, 2018). Consequently, the definition that will be adapted in this study is the definition of the World Bank. It considers that micro-enterprise is the ones that employ less than 50 employees, and small enterprise employs 50 employees. Medium-sized enterprise has 50-200 employees. In African countries, SMEs are well-thought-outto be the most influncialsctors on economy, as they play crucial role in eliminating poverty. (Elsanoosi,2020) SMEs subsidizeto about 90% of African economies.Thus, SMEs serve as a inordinatestimulus for growth and economic prosperity across most countries of the African continent.

B. Sudanese Small and medium enterprises SMEs:

According to the Bank of Khartoum, firms are considered the vital driver of economic growth for the Sudanese market and will ensure a bright and sustainable future for the country (Eltahir, 2018). In addition, this sector will also support innovation and reinforce economy. SMEs pointedly impact the Sudanese economy, as they contribute in Local Economic Development (LED) and concequently,the societywell-being. The results of the industrial survey and the investment map in Sudan, as well as many other surveys, indicate that small enterprises represent about 90% of all economic activities (Mansour & Omer, 2020).

C. Foreign direct investment FDI:

FDI has a weightycontribution in global business by creating new markets internally and externally, economical resources, and provides exposure to new technologies, new products, skills, and capital.(Salim, Razavi, & Afshari-Mofrad, 2017)Iran, as a developing country, has had some form of engagement with foreign capital for more than 150 years. Nevertheless, there are limited studies on the role of FDI in technology spillover in Iran. (Salim, Razavi, & Afshari-Mofrad, 2017)study investigates the effect of the technological capabilities of foreign subsidiaries on the relationship between FDI and technology spillover channels, including the Demonstration effect, Training effect, Collaboration effect, Linkage effect, and Worker turnover. Yet the most evidenced effect has been realized in developing countries, where FDIinflows have amplified from an average of less than $10 billion in the 1970's to a yearly average of less than $20 billion in the 1980's, to explode in the1990's from $26.7billion in 1990 to $179 billion in 1998 and $208 billion in 1999 and now comprise a large portion of global FDI. Specifically, driven by mergers and acquisitions and internationalization of production in a range of industries, FDI into developed countries last year rose to$636 billion, from $481bilion in 1998 (source UNCTAD).

D. Development of Hypothesis:

- **Hypothesis 1:**

H1: FDI spillovers affect positively the Small and Medium Entrprises SMEs: The positive nexus between FDI and growth is described in the neo-classical school of thought. According to the neo-classical exogenous growth model of Solow (1956) and Solow (1957), economic growth is a function of the capital, labor force, keeping technology exogenous(Yushi, Desalegn and McMillan, 2021).For small and medium-sized companies, FDI represents an opportunity to become more actively involved in international business activities (Charles & Philip, 2020).

- **Hypothesis 2:**

$H1_1$: Finance spilloveraffect poitivelythe SME performance

Elsanoosi, (2020), examined the influence of the business environment on the performance of SMEs in Sudan. His result showed that internal financing sources are found to be statistically significant and indicate that the use of internal financing sources have anencouraging effect on SMEs performance of. Access to finance is defined as the availability of financial services in demand deposits, credit, payments, or insurance (Aduda& Kalunda, 2012). In addition, it also refers to the degree to which financial services are available at a fair price. Hence, they are hindered by accessability, affordability, and suitability. Therefore, obstacles such as high operation costs, difficulties in accessto credit and least balance necessities can eliminate individuals, firms, and SMEs. In particular, access to credit is associated with positive growth (Ardic, Mylenko, & Saltane, 2012).

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- **Hypothesis 3:**
  $H1_2$:Technology spilloveraffect poitively the SME performance

  The results of the study of (Wanjere M. D., Ogutu M., Kinoti M. and Iraki X. N., 2021) assured that advanced spillover of production technology has considerableoutcome on the firm performance indicating that an incremental alteration in the pioneering production technology would createprogress in company's performance.

  Cutting-edge technologies obtained from developed countries are altered into valuable and scarce heterogeneous resources for emerging-market firms and formulates the compatetive advantageof the SMEs (Hsu & Wang, 2012). Consequently, SMEs can increase their technology proficiencies in their domestic markets through the copying of leading firms (Chen, Jaw, & Wu, 2016), thereby creating a technology learning effect that fosters to their domestic operations.

- **Hypothesis 4:**
  $H1_3$: Skills spilloveraffect poitively the SME performance:

  The positive findings (Yunus and Masron, 2020) regarding spillover effects of FDI on proficient labour productivity can be accredited to the capability of professional workers to absorb both technology and knowledge transfers from FDI.Another study by Bruno, Crinò, and Falzoni (2012) revealed that foreign capital contributed to the catching-up process and led to technological and organizational improvement, which fostered the restructuring process, thereby increasing both the demand and supply of skills, yet Knowledge spillover occurs through the transmission and/or development of knowledge related to economic activity.Therefore, there is a need to support both direct and indirect activities to generate knowledge and skill demands that can be serviced by individuals located in the immediate and surrounding areas. (Robert S. Sterneck,2015).

E. SME Performance measurement:

Performance indicates to capabilities of the organization to achieve its market-oriented and financial goals (Kim & Choi, 2014). Two concepts must be considered when endeavoring to define performance: its time frame and reference point. It is possible to differentiate between past and future performance; past superior performance does not guarantee that it will remain superior in the future (Yoo& Kim, 2012). (Bair &Palpacuer, 2015). Therefore, typical corporate performance measures are firm average profit, profit growth, market share growth, and sales (Richey et al., 2011). Accordingly, performance is measured by the three-item question: expected growth, market share, and new product launches. (Park and Luo 2001: Morgan et, al.2013; González-Benito 2005; Homburg et al. 2012).

F. Previous studies about the nexus of FDI spillovers and SME performance

Hashi, et.al (2022), examined whether FDI spillovers stimulate different processes of the innovation process (from decision to innovate to productivity) among knowledge-using and knowledge-creating firms in an emerging European economy. Their result showed that innovation process in developing countries is closer to the copying than the creation of new products. Therefore, stronger FDI effects are more existed in firms that obtain innovation through knowledge use rather than through knowledge generation.

Yunus&Masron, (2020), investigated technology and knowledge outcome from FDI spillovers on labor productivity according to skill composition, transfer their FDI‟s knowledge and technology through the demonstration and competition effects to other employees (Michael J. Osei a, Jaebeom). Kim (2020), investigated the level to which an growth in financial expansionincreses the positive outcome of FDI on economic growth. Using a dynamic panel threshold model on 62 middle- and highincome countries spanning the period 1987–2016, we re-examine the possible nonlinearity between finance, foreign direct investment, and growth.

Elsanoosi, (2020), investigated the effect of the business environment on the performance of SMEs in Sudan. His result showed that internal financing sources are found to be statistically significant and indicate that the use of internal financing sources have a positive effect on the performance of SMEs, however external financing sources are statistically significant and negatively affect the performance of SMEs in Sudan. He stressed out that loss of sales due to electrical outages and products value losses due to breakage or damage while in transit to the domestic market show a statistically significant and negative effect on the performance of SMEs in Sudan. His study concluded that, bureaucracy and the number of visits and inspections by tax officials are statistically significant, demonstrating a negative influence on SMEs' performance. In addition, corruption-related variables are found to be statistically significant and to have a positive effect on SMEs' performance.

Dung Nguyen, (2020), examined the effect of direct associations between firms with foreign direct investment and young SMEs on technology adoption strategies and the further influence of technology transfers from such linkages on technology adoption strategies. Their result showed that exporting firms distaste to perform embodied backward/forward adoptions, but more likely adopt the embodied backward purchasing. Yet, under technology transfer, firms fronting economic restraints may overcome these by searching for other financial sources and embodied technology transfer. Salim, Mohammad &Mofrad, (2017), investigated Foreign direct investment and technology spillover, they weighed the impact of technological Capabilities of subsidiaries. Lacheheb et al (2017) examined the impact of foreign-direct investment (FDI) and financial development on Malaysia's economic growth from 1975-2014. Their results showed that financial development

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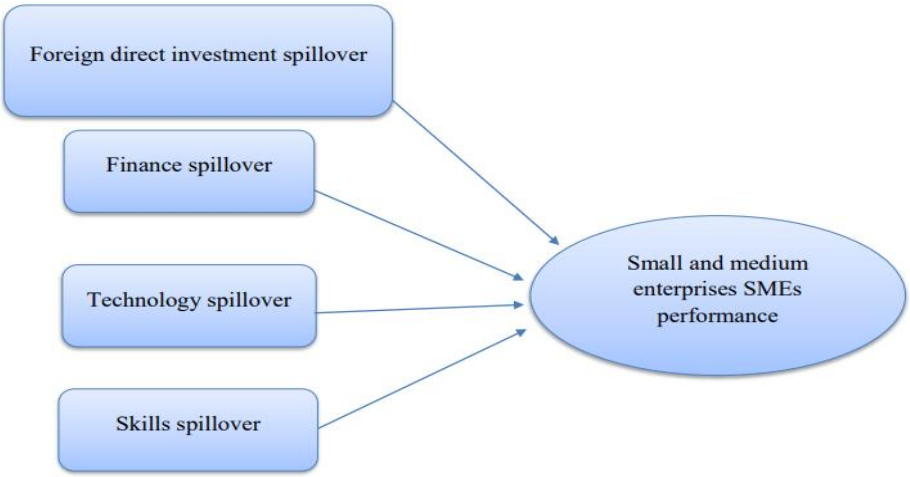
acting a crucial role in mediating the impact of FDI on economic growth in Malaysia. They confirmedthat well-settled financial sectors lead to further and facilitate FDI spillover and hence yield economic growth, particularly in Malaysia. Islam, Haiyun& Asif Khan, (2018), examined the moderation and causal relationship between economic growth, financial deepening, foreign direct investment, and innovation in the context of China. The study presents policy implications to bring more depth to the financial system to elevate a potential innovative environment through FDI. Moreover, to magnify real growth through the creation of spillover effects and to enrich the absorptive capacity, policymakers need to concentrate on financial institutions' access, depth, and efficiency. Adowa, (2017), investigated the impact of trade openness on foreign direct investment in Sudan; they established the long-run equilibrium relationships between trade openness and FDI in the Sudanese economy by sector within the 1990-2017 period. They employed Johansson co-integration technique. Their result showed a long-run equilibrium relationship between trade openness and FDI flow estimated. Their finding revealed that FDI inflows for the aggregate economy by sector are determined by the degree of trade openness in terms of their joint measurement. Hence, they stressed that the magnitude of the degree of the industrial trade openness model is robust, and the government should prioritize this sector with regard to exports. Yet they recommended that government should encourage the manufacturing sector, therefore developingbusiness infrastructure and promoting the attention of FDI in the country's productive sectors. Omer Eltahir, (2018), identified the antecedents of business success in Omdurman Sudan, particularly Small and Medium Enterprises. He examined eight factors that influence SMEs business success.

Rojec, & Knell, (2018) analyzed empirically knowledge on knowledge spillovers from foreign direct investment (FDI), he recognized the main substantive development relates to the introduction of a broad variety of sources of firm (foreign affiliates as well as local firms) heterogeneity in the analysis. Two others are differentiation between vertical (inter-industry) and horizontal (intraindustry) spillovers, and host country absorptive capacity for knowledge spillovers. The study found that positive, neutral as well as negative FDI spillover effects. Yousif, Adel &Mudawi (2015), evaluated Foreign Direct Investment Inflow in Sudan in the period (1990-2013); the employed ordinary least squared (OLS) method is applied to annual time series data to estimate the along-linear relationship between FDI on the one hand and a set of explanatory variables. Their result suggested that exchange rate, transportation and communication, and oil exploration are the major determinants of FDI in Sudan through the research period, while the growth rate of real gross domestic product and openness play insignificant roles in effecting at FDI.

G. Conceptual Framework

This study gave an overview of the independent and dependent variables that defined the research objective. The independent variable of this study is foreign direct investment spillovers, including Finance spillover, Technology spillover, and Skill spillover (Del Giudice et al.,2019). While the dependent variable is small and medium enterprises SMEs performance.



III. RESEARCH METHODOLOGY

Theparadigm of this study is positivistic using qualitative methodology to explore the impact of foreign direct investment spillover on small and medium enterprises performance up to the period November 2022, its descriptive research. therefore, quantitative data will be collected to achieve the objectives of the study. The primary data is collected via structured questionnaire and in secondary data internet and articles are utilized. The target population is small and medium enterprises in Sudan. The study sample is Zain telecommunication company in Sudan because it is a franchisor company to Zain telecommunication company mother company in Kuwait. Sample size: 30 respondents from junior, senior and top-level staffs who worked at Zain telecom. The sampling techniques used is non-probability sampling, in particular convenience sampling technique. Data analysis tool is the Statistical Packages for Social Sciences (SPSS) that coded the response questionnaire.

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A. Reliability test:

In this study Cronbach Alpha coefficient was used to measure reliability. If the coefficient is more than 0.73, the data is taken as reliable, but if it is below the date is treated as unreliable and inconsistent. (Uma Sekaran,2016). The reliability analysis f or variables was as follows Finance spillover (.814), Technology spillover (.738), S kill spillover (.867) and SMEs performance (.842), therefore, the data was justified to be used for further analysis because the Cronbach Alpha Coefficient was more than 0.73 as indicated in the table 1 below.

Variables	Cronbach's Alpha	No. of items	Decision
Finance spillover	.814	4	Accepted
Technology spillover	.738	4	Accepted
Skill spillover	.867	4	Accepted
SMEs performance	.842	3	Accepted

Table 1: Reliability Statistics

Source: Our elaborations, 2022

B. Profile of Zain telecommunication company

Zain- Sudan (formerly Mobitel) commenced its lasting journey towards the end of 1996, leading the way as the first mobile telecom operator in Sudan. Launching its commercial activities in February 1997, Zain put Greater Khartoum on the telecommunications map through its GSM network, turning Sudan into the fourth country to launch mobile services in North Africa. It was established as a joint-stock company with the shares divided between Sudan Telecommunications Company Ltd. (Sudatel) and several other shareholders including Celtel until 2006, when it was fully acquired by the Mobile Telecommunications Company (MTC) as part of its strategy; to transform from a local to a regional, then a global telecom entity. Following the FDI by acquisition, Zain consolidated its position in the Middle East and Africa, transforming Mobitel into the leading mobile telephone operator in Sudan, and the most distinguished among Zain Group's operations which extend across Asia and Africa. On September 9th 2007, the Sudanese Mobile Telephone Company (Mobitel) simultaneously rebranded to Zain together with the other companies in the Group in Kuwait, Bahrain and Jordan. Zain then became the brand name of the group's companies in Africa and the Middle East, operating in Kuwait, Bahrain, Saudi Arabia, Iraq, Jordan, Lebanon (MTC Touch), and Sudan(Sd.Zain.com,2022).

IV. RESULTS AND ANALYSIS

Data are collected via questionnaire, consequently, multiple linear regression used to test for hypotheses H1 and sub hypotheses, ($H1_1$, $H1_2$& $H1_3$) to test the statistically significant impact of the independent variables which are Foreign direct investment spillovers namely: (finance, Technology & Skill spillovers) on the dependent variable small and medium enterprises performance. Yet, at 95% degree of confidence and an error of 0.05, the tests run at an Alpha of (α), at 0.01 for all variables, if the p-value < 0.05, then the regression model is statistically significant which appeared at the coefficient table.

Count				
		Gender		Total
		Male	Female	
Please indicate your position at Zain?	Top level	7	3	10
	Senior	3	4	7
	Junior	8	5	13
Total		18	12	30

Table 2: Gender and position at Zain Cross tabulation

Source: Our elaborations, 2022

As observable from the above table and chart, the majority of the respondents were Junior, representing 43%, in which 26.67% males and 16.67% females. Then regarding top level occupational ranking who constitutes 33.3%, in which 10% were Males and 23% were Females. On the other hand, a minority of 23.3% of the respondents who were Senior, in which 10% were Males and 13.33% were Females.

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Count						
		Please indicate your managerial experience?				Total
		1-2 years	3-5 years	6-10 years	Above 10 years	
Please indicate your educational level?	Bachelor	3	9	4	0	16
	Master	1	7	3	0	11
	PHD	0	0	1	2	3
Total		4	16	8	2	30

Table 3: Managerial experience and educational level Cross tabulation

Source: Our elaborations, 2022

As observable from the table and the chart above, the majority of the respondents were Bachelor degree holders, representing 53.3%, in which 30% have working experience between 3-5 years, followed by 13.33% between 6-10 years and 10% between 1-2 years. While a master degree holder represents 36.6, in which 23.33% had experience between 3-5 years, 10% had experience between 6-10 years, while only one respondent had experience between 1-2 years. Yet 10% of the sample represents PHD holders, in which 6.67% had experience for more than 10 years, while one respondent had experience between 6-10 years.

Count						
		please indicate your department?				
		Marketing	Human resources	Customer services	Finance	Total
Please indicate your position at Zain?	Top level	3	2	4	1	10
	Senior	0	1	3	3	7
	Junior	2	1	8	2	13
Total		5	4	15	6	30

Table 4: Department and position at Zain Cross tabulation

Source: Our elaborations, 2022

As observable from the above table and chart, the majority of the respondents were from the customer services department representing 50%, in which 26.67% were Juniors, followed by 13.33% who were from the top levels, and 10% were from the senior levels. While 20% of the sample from the finance department, in which 10% were Senior levels, 6.67% were Junior levels, and only onerespondent from the top levels. Yet 16.67% of the sample were from the marketing department, in which 10% from the top levels, followed by 6.67% who were juniors.While a minority of 13.34% of the sample were from the human resources department, in which 6.67% from the top levels, while one respondent from the senior levels and also one respondent from the junior levels.

- **Descriptive Statistics of The Related Variables:**

Statement	1) Finance spillover helped Zain in raising foreign capital.	2) Finance spillover helped Zain in accessing to affordable financing	3) Finance spillovermade Zaineligible for foreign funding	4) Finance spillover helped Zain in short-term financing
Strongly disagree	0.0%	0.0%	0.0%	0.0%
Disagree	0.0%	10.0%	20.0%	30.0%
Neutral	3.3%	0.0%	6.7%	16.7%
Agree	50.0%	63.3%	66.7%	23.3%
Strongly agree	46.7%	26.7%	6.7%	30.0%
Mean	4.43	4.07	3.60	3.53
Std. Deviation	.568	.828	.894	1.224
Outcome	Strongly agree	Agree	Agree	Agree

Table 5: Questions Related to Finance Spillover

Source: Our elaborations, 2022

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Statement	1) Technology spillover improved Zain's learning ability from wide range of foreign tech companies	2) Technology spillover enabled Zain to imitate some foreign tech companies	3) Technology spillover improved Zain'sstaffs technical capabilities	4) Technology spillover improved Zain's creativity being able to integrate enterprise systems
Strongly disagree	0.0%	0.0%	0.0%	0.0%
Disagree	26.7%	10.0%	20.0%	43.3%
Neutral	16.7%	26.7%	16.7%	13.3%
Agree	33.3%	36.7%	43.3%	36.7%
Strongly agree	23.3%	26.7%	20.0%	6.7%
Mean	3.53	3.80	3.63	3.07
Std. Deviation	1.137	.961	1.033	1.048
Outcome	Agree	Agree	Agree	Neutral

Table 6: Questions Related to Technology Spillover

Source: Our elaborations, 2022

Statement	1) Skill spillover enabled Zain's staffs gaining a tremulousskills from highly skillful foreigners	2) Skill spillover enabled Zain's operational expertise	3) Skill spillover increased the strength of the information flow to Zain telecom	4) Skill spillover enabled Zain in hiring best talented skillful staff
Strongly disagree	0.0%	0.0%	0.0%	0.0%
Disagree	10.0%	0.0%	0.0%	0.0%
Neutral	10.0%	0.0%	0.0%	10.0%
Agree	20.0%	33.3%	23.3%	16.7%
Strongly agree	60.0%	66.7%	76.7%	73.3%
Mean	4.30	4.67	4.77	4.63
Std. Deviation	1.022	.479	.430	.669
Outcome	Strongly agree	Strongly agree	Strongly agree	Strongly agree

Table 7: Questions Related to Skills Spillover

Source: Our elaborations, 2022

Statement	1) Foreign direct investment spillovers increased Zain's expected growth	2) Foreign direct investment spillovers increased Zain's expected market share	3) Foreign direct investment spillovers increased Zain's expected new services lunches and innovation
Strongly disagree	0.0%	0.0%	0.0%
Disagree	0.0%	0.0%	0.0%
Neutral	3.3%	23.3%	13.3%
Agree	56.7%	50.0%	60.0%
Strongly agree	40.0%	26.7%	26.7%
Mean	4.367	4.03	4.13
Std. Deviation	.5561	.718	.629
Outcome	Strongly agree	Agree	Agree

Table 8: Questions Related to SME Performance

Source: Our elaborations, 2022

V. MULTIPLE REGRESSION ANALYSIS

Multiple Regression analysis is an extended version of simple linear regression, which was first established and applied by Pearson in 1908. (Kleinbaum et al., 2013). Considering that simple linear regression only solves the analysis with only one independent variable, Consequently, the regression model is best used when more than two independent variables are analyzed. Hence, a multiple regression equation will be applied to regression dependent variable against independent variables. Therefore, this study has three independent variables and one dependent variable presented as follows; $Y = a + \beta1X1 + \beta2X2 + \beta3X3 + e$ Where; Y = Small and medium enterprises SMEs performance a = constant β1, β2, β3= regression coefficients X1 = Finance spillover X2 = Technology spillover X3 = Skill spillover e = error factor.

VI. COMPUTING VARIABLES

This study is to explore the impact of foreign direct investment Spillovers (Finance, Technology and Skill) on small and medium enterprises performance case study Zain telecom in Sudan. Therefore, SPSS Compute variables icon is used to group all questions to their related variable. hence all independents' variables tend to have four sub dimensions, while the dependent variable has three dimensions, therefore mean score used to group the

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variables. FINS1, FINS2, FINS3 and FINS4 are grouped together to Finance spillover TECHS1, TECHS2, TECHS3 and TECHS4 are grouped together to Technology spillover.

SKSP1, SKSP2, SKSP3 and SKSP4 are grouped together to Skill spillover SMEsP1, SMEsP2 and SMEsP3 are grouped together to small and medium enterprises performance. Consequently, the new variables FINS, TECHS, SKSP and SMEsP were used for Multiple regression analysis.

- **The coefficient table from the multiple regression analysis are given below:**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.393	.701		.561	.585
	FINS	.404	.158	.389	2.560	.025
	TECHS	-.077	.095	-.105	-.811	.433
	SKSP	.586	.144	.637	4.060	.002
a. Dependent Variable: SMEsP						

Table 9: Coefficients [a]

Source: Our elaborations, 2022

- **Testing the main hypothesis:** H1: Foreign direct investment Spillovers has a significant impact on small and medium enterprises performance.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.494	3	.165	17.867	.000[b]
	Residual	.111	12	.009		
	Total	.604	15			

Table 10: ANOVA[a]

Source: Our elaborations, 2022

The anova table shows an alpha or a p value of .000 which is < 0.05, Therefore the result suggests that this regression model is statistically significant, therefore the null hypothesis is rejected. Hence, Foreign direct investment Spillovers has a significant impact on small and medium enterprises performance Therefore, H1 is accepted

Testing the sub hypothesis of Finance spillover: $H1_1$: Finance spillover has a significant impact on SMEs performance

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Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.393	.701		.561	.585
	FINS	.404	.158	.389	2.560	.025
a. Dependent Variable: SMEsP						

Table 11: Finance Spillovers Coefficient Table

Source: Our elaborations, 2022

The coefficient shows an alpha or a p value of .025 which is <0.05, therefore, the result is statistically significant; hence, the null hypothesis is rejected. Consequently, Finance spillover has a significant impact on SMEs performance. Therefore, $H1_1$ is accepted.

By testing the sub hypothesis of Technology spillover

$H1_2$: Technology spillover has a significant impact on SMEs performance.

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Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.393	.701		.561	.585
	TECHS	-.077	.095	-.105	-.811	.433
a. Dependent Variable: SMEsP						

Table 12: Technology Spillovers Coefficient Table

Source: Our elaborations, 2022

The coefficient shows an alpha or a p value of .433 which is > 0.05, therefore, the result is not statistically significant, hence, the null hypothesis is retained. Consequently, Technology spillover has no significant impact on SMEs performance Therefore, $H0_2$ is retained.

By testing the sub hypothesis of Skill spillover: $H1_3$: Skill spillover has a significant impact on SMEs performance.

Coefficients [a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.393	.701		.561	.585
	SKSP	.586	.144	.637	4.060	.002
a. Dependent Variable: SMEsP						

Table 13: Skills Spillovers Coefficient Table

Source: Our elaborations, 2022

The coefficient shows an alpha or a p value of .002 which is <0.05, therefore, the result is statistically significant; hence, the null hypothesis is rejected. Consequently, skill spillover has a significant impact on SMEs performance. Therefore, $H1_3$ is accepted.

VII. CONCLUSION

After testing the hypotheses related to the impact of foreign direct investment Spillovers (Finance, Technology and Skill) on small and medium enterprises performance, the results showed that both Finance and Skill spillovers have statistically significant impact on small and medium enterprises performance, however, it suggests that Technology spillover have no statistically significant impact on SME performance. Although this study provided a theoretical implication to the coming scholars in the area of Foreign direct investment. as well as a practical implication to Zain telecom and policy makers some limitation considered to be unavoidable firstly, the study is conducted on just one telecom company which is Zain as well as the sample cover only thirty respondents, yet the major source of data is a questionnaire and it does not consider economic indicators such as the economic growth, productivity, labor force and international openness. Therefore, the result cannot be generalized into the overall Sudanese small and medium enterprises. Consequently, further researches should carry a multiple case study a cross various smaller and medium enterprises i.e. using probability sampling techniques. integrating the economic growth and international openness as moderating and mediating variables.

VIII. DISCUSSION,POLICY IMPLICATIONS AND LIMITATION

Given that the Sudanese economy is being under sanction for almost three decades, such embargo has affected the country dramatically in terms of linkages s to multinational companies having the accessibility to more advance technology, skills even finance i.e. the possibility of small and medium Sudanese companies being acquired by Giant multinational corporation being their subsidiaries. Fortunately, Elengaz regime is been overthrown which led to a significant amount of the debt's relief, international openness, recognition of United states of America and the neutralization of Israel-Sudan relationship. Therefore, such evens will move Sudan toward decoupling with more and more countries getting inward Foreign direct investment. Yet a continuous improvement and evolution is needed to have highly skillful human resources having the ability of utilizing the technology effectively toward more trade with biggest multinational corporations. Furthermore, Zain telecom should invest heavily in human resources by sending them a broad in order to be more skillful and highly knowledgeable acquiring better technical ability of copying foreign technologies as well as being creative and innovative by integrating complex systems. Moreover, Sudanese government should establish a policy for the sake of attracting better technological resources through foreign direct investment as well as promoting the private sector particularly SMEs to be innovative by providing them with international linkages and access to more funding. Hence, more initiatives ought to be taken by the government of for the sake of stimulating investment climate that will re-attract foreigners providing them with favorable terms Tax relief and wealth maximization and the investment will flow will result in more spillovers.

Although this study provided a theoretical implication to the coming scholars in the area of FDI as well as a practical implication to Zain telecom and policy makers some limitation considered to be unavoidable firstly, the study is conducted on just one telecom company which is Zain as well as the sample cover only thirty respondents, yet the major source of data is a questionnaire and it does not consider economic indicators such as the economic growth, productivity, labor force and international openness. Therefore, the result cannot be generalized into the overall Sudanese small and medium enterprises. Consequently, further researches should carry a multiple case study a cross various smaller and medium enterprises i.e. using probability sampling techniques. integrating the economic growth and international openness as moderating and mediating variables.

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