

Impact of Cross-Border Digital Transmissions on MSMEs in Nigeria

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Growth of MSMEs

This study describes how digital imports have enhanced the growth of Nigerian Micro, Small, and Medium-sized Enterprises (MSMEs). In particular, it provides strong evidence that such MSMEs have benefited from the World Trade Organization's (WTO) e-commerce moratorium. Our findings are based on a detailed analysis of time-series data at the sectoral level of MSMEs using data sources such as the MSME Survey Report of Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and National Bureau of Statistics, coupled with the data on imports of digital products from OECD Input-Output tables. This data-driven approach enabled us to pinpoint the precise contribution of digital imports. Following data collection, our analysis employed econometric panel regression techniques to

countries. Such impacts include economic losses due to higher prices, reduced consumption, job cuts, and decreased well-being.

Key takeaways from the report are as follows:

Nigeria is particularly well positioned to reap the benefits of digitalization: Not only is it the most populous country in Africa, but it has the largest [populations of young people](#), with a median age of 18.1 years. About 70 percent of the population is under age 30, and 42 percent are under the age of 15. Favorable demographics have fueled the rise of shopping malls, chain stores, and convenience stores across major cities such as Abuja, Lagos, and Port Harcourt. Many of the shops are MSMEs that rely on digital tools to minimize cost and maximize profit. Nigeria also has the largest mobile market in Sub-Saharan Africa, supported by strong mobile broadband infrastructure and improved international connectivity. Several concrete examples underscore how digitalization is already benefitting the Nigerian economy:

- ◀ **Rapid Growth in E-commerce:** The Nigerian e-commerce sector is experiencing rapid expansion. Nigeria is the 38th largest market for e-

optimization. And in agriculture, sensor technologies combined with advanced computing minimize water usage and optimize land management.

Recognizing the pivotal role of digitalization in economic growth and social welfare, the Nigerian government has incorporated it into its development strategy. The government has focused on building out essential digital infrastructure, such as broadband internet, and has implemented policies to encourage the adoption of digital technologies among businesses and consumers. But in addition to these critical investments, the maintenance of the WTO e-commerce moratorium has $\text{cmq}^{\text{eqpvtdwgf}} \text{"vq}^{\text{P ki gtlcau}} \text{kdtpvf ki kcnfi tqy vj} \text{"qwmqmqm}^{\text{cu}^{\text{y g}}$ explain below.

In the following sections, we discuss the impact assessment of digital transmissions on the Nigerian economy. Additionally, we highlight the myriad challenges confronting MSMEs within Nigeria, as well as the strategic policies devised to mitigate these challenges and facilitate the seamless adoption of digital technologies among MSMEs.

$\text{K} \text{ r cev}^{\text{Cuuguo}} \text{ gpv}^{\text{qh}^{\text{F ki kcn}^{\text{Vtcpuo}} \text{ kulkpu}^{\text{qp}^{\text{v}^{\text{j g}^{\text{Geppqo}} \{$

Digital transmissions have exerted a profoundly positive influence on the Nigerian economy, bringing about tangible improvements in productivity, employment, and overall economic growth. A prime illustration is the burgeoning e-commerce sector, which has catalysed job creation across various domains such as logistics, marketing, and customer service. One of the key drivers behind this economic boost is the expansion of market reach facilitated by digital transmissions. Businesses now have the capacity to connect with a broader audience of potential customers both cross-border and domestically through online channels, resulting in increased sales and profits. This, in turn, has acted as a catalyst for further economic growth.

Beyond the economic realm, digital transmissions have also contributed significantly to Nigerian society. They have played a pivotal role in improving access to education and healthcare services, making it easier for people, even in remote areas, to engage with the economy and connect with one another. In the following sub-sections, the negative impact of tariffication of cross-dqtf $\text{gt}^{\text{tcpuo}} \text{ kulkpu}^{\text{qp}^{\text{P ki gtlcau}} \text{geppqo} \{ \text{"ó both in terms of import and exports -- and the benefits of the duty free cross-border electronic transmissions are briefly described.$

P gi c kxg'K r cev'qh'Etquw/Dqtf gt'Vtcpuo kulkp'Vctkhecvkp"qp"

5. Employment Opportunities: The import sector stands to benefit from duty-free transmissions, potentially leading to job creation in areas such as logistics and customer service.

The societal benefits of duty-free cross-border electronic transmissions are equally noteworthy. They can improve access to goods and services, promote economic development in rural regions, and contribute to overall social progress.

Micro, small, and medium-sized enterprises (MSMEs) are the backbone of the Nigerian economy.

Economy (FMoCDE). These pillars, listed below, acknowledge the importance of

1. Developmental Regulation
2. Digital Literacy and Skills
3. Solid Infrastructure
4. Service Infrastructure
5. Soft Infrastructure
6. Digital Services Development and Promotion
7. Digital Society

strategic considerations and potential countermeasures becomes evident in safeguarding the continued growth and global competitiveness of Nigeria's digital exports.

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F c v " U q w t e g u

This study uses data from many different sources. They include 1) the MSME Survey Report of Small and Medium Enterprises



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Where t is the time period, i is the individual cross-sectional observation, $\bar{\mu}$ is population average and μ_i is individual cross section specific error term.

The following econometric equations (numbered 1-11) are estimated at a sectoral level as classified in the 2021 MSME Survey Report of Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) and National Bureau of Statistics.

Fig. 2 Percentage of MSME E-commerce Adoption per Sector

Fig 3. shows the employment generation by MSME in each sector between the 2017 and 2020 across sixteen sectors. Manufacturing, wholesale/Retail trade and education employ more labour than any other sector across the two periods while transport and storage, information and communication are the least employing sector. However, there is a noticeable improvement between 2017 and 2020. Fig.4 shows the total employment generated by MSME in Nigeria and this clearly show remarkable progress in the level of employment generated by MSME across the periods.

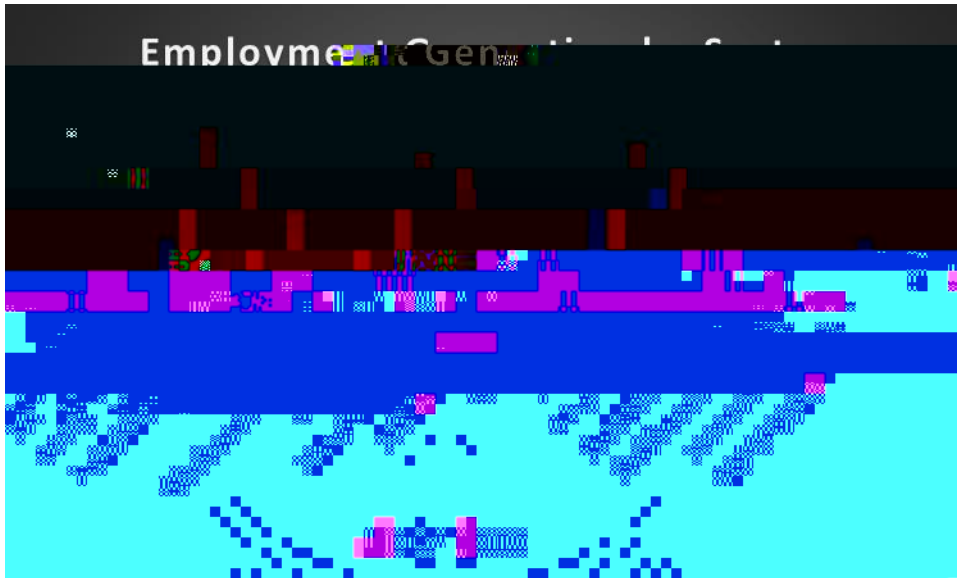
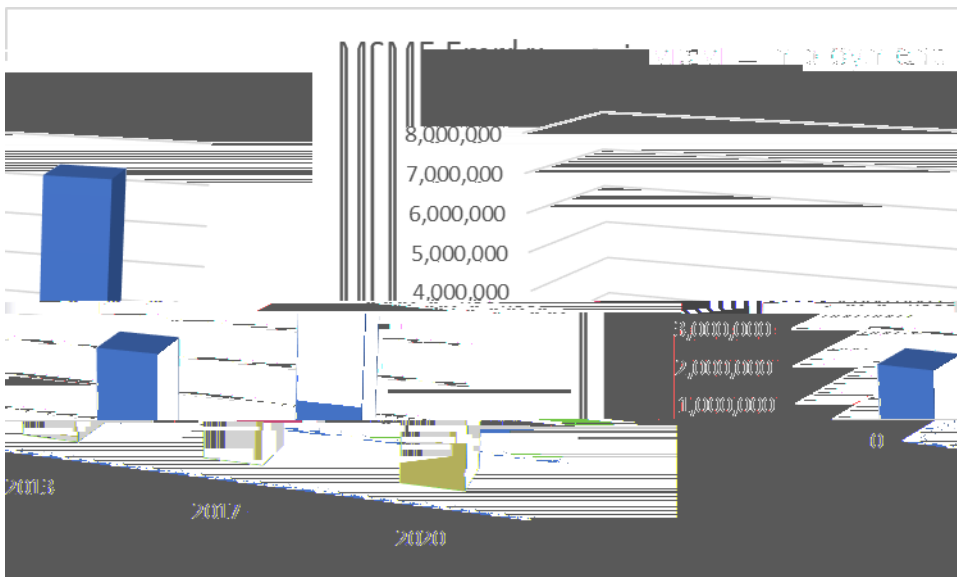


Fig.4 Total MSME Employment



Regression Techniques

Pooled, Fixed, and Random effects regressions are estimated for each of the model specifications. These are done in order to analyse the different characteristics of the variables under different assumptions. The best regression model is determined based on F test, Hausman Test and LM test. All the regression variables are in natural logarithms. R software has been used to run these models. The results of panel regression models (eqn. 1-11) are presented in the following tables.

The highlights presented in Table 1 show the significance of digital imports across all the panel regression models (eqn. 1-3) at a 5% level or lower. In each of the three panel models, the positive coefficient of digital goods imports stands out, highlighting its direct association with increased SME sales, male employment, and female employment. Specifically, a 1 per cent increase in SME digital imports is associated with a 0.79 per cent surge in SME sales, a 0.46

Digital goods imports exhibit a significant and positive correlation with the number of SMEs with exportable products, as indicated in Table 2. An increase of 1 per cent in digital goods imports corresponds to approximately a 0.91 per cent rise in the number of SMEs with exportable products. Moreover, it's noteworthy that digital goods imports positively and significantly impact SME e-commerce. A 1 per cent increase in digital goods imports leads to an approximate 0.17 percent increase in SMEs engaged in e-commerce activities. Similarly, digital goods imports positively affect the number of SMEs, proving to be statistically significant. Specifically, a 1 per cent rise in digital goods imports corresponds to an estimated increase of about 0.42 percent in the number of SMEs.

Table 2: Panel Regressions determining Number of Enterprises, SME E-commerce and SMEs with Exportable Products

	P wo dgt "qh"UO Gu"	UO G'Geqo o gteg	UO Gu'y kj 'Gzr qtvcdrq" Rtqf weu
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statistically significant associations with female labour productivity, while 'Digital Goods Exports' show a negative impact (coef. -0.48, p = 0.000***). Consequently, a 1 per cent increase in SME digital imports leads to an 0.89 percent increase in female labour productivity. In addition, 'Digital Goods Imports' (coef. 0.85, p = 0.000***), 'Digital Services Exports' (coef. 0.12, p = 0.016*), and the 'Number of SMEs with Exportable Products' (coef. -0.21, p = 0.008**) demonstrate substantial associations with GDP per SME. Notably, a 1 per cent increase in SME digital imports corresponds to an 0.85 per cent surge in GDP per SME. For equations (8) and (9), the 'Pooled Model' seems to be the best fit overall with higher Adj. R Square values. Conversely, equation (7) demonstrates a better fit with the 'Fixed Effects' Model. Thus, it can be inferred that digital goods imports and digital services exports significantly enhance labour productivity for both male and female employees within SMEs.

Table 3: Panel regressions determining labour productivity and size variables

	UO G'I F R'Rgt"		UO G'I F R'Rgt"		I F R'r gt"UO G"*uk g"	
	Go r mq{ gg"*rdqwt"		Go r mq{ gg"*rdqwt"		dcugf "qp'I FR+	
	r tqf we\kk\.'o crg+		r tqf we\kk\.'hgo crg+			
	Eqgh0	r/xcnwg	Eqgh0	r/xcnwg	Eqgh0	r/xcnwg
kpvgtegr v	/706	20834	/805	2069	207	20:
UO G'G"/eqo o gteg			206	2047	/209	2022, , ,
P wo dgt"qh'UO Gu			/208	206:		
F ki kcn'I qqf u'ko r qtw	2083	2024, ,	20 ;	2022, , ,	207	2022, , ,
F ki kcn'I qqf u'Gzr qtw	/204	2022, , ,	/206:	2022, , ,		
F ki kcn'Ugtxlegu'Gzr qtw	209	2022, , ,	2063	2023, ,	204	2038,
P q0qh'UO Gu'y kj "					/2043	202: , ,
Gzr qtcdrg'Rtqf weu						
Cf10T"Us wctg		2088				

Moreover, digital goods imports demonstrate a potential positive impact on female employment per SME. For every 1 per cent increase in digital goods imports, there is an estimated 0.92 per cent increase in female-based employment per SME. In terms of regression models, the 'Pooled Model' is found to provide a better fit for the size variable based on male and female employment both.

Table 4: Panel Regressions determining labour productivity and size variables

	Go r nq { gg'r gt 'UO G' *Uk g'dcugf "qp"o crg" go r nq { o gpv+		Go r nq { gg'r gt 'UO G' *Uk g'dcugf "qp"ngo crg" go r nq { o gpv+	
	Eqgh0	r/xcnwg	Eqgh0	r/xcnwg
Kpvtgr v	206	20; 7	464	20697
UO G'G'eqo o gteg	/207;	2022		
P wo dgt "qh'UO Gu			/2079	2022, , ,
UO G' Cxi 'Ucrgu			/2078	-2043; 0
F ki kcnI qqf u'ko r qt wu	207;	2028, ,	204	20740
F ki kcn'Ugtxlegu'Gzr qt wu	/208;	2065		
I FR'Rgt 'O UO G				
Cf10T'Us wctg	206;		2054	
Dgu' O qf gn	Rqqrgf 'O qf gn		Rqqrgf 'O qf gn	

Uki pht0eqf gu<"2"-; , , 0'2023"-; , 0'2023"-; 0'2027"-;0'203"-;0'3

Conclusion

Digital transmissions have been a boon to Nigeria's economy, fostering productivity, job creation, economic growth, and social advancement. The promotion of duty-free cross-border electronic transmissions has played a pivotal role in driving economic growth, achieving cost efficiencies, fostering innovation, expanding trade, and creating employment opportunities. The potential imposition of tariffs on cross-border transmissions poses significant risks, particularly for the importing sector. The empirical analysis results unequivocally highlight the substantial contribution of digital trade to the employment of MSMEs, especially in male-based employment. Considering the prevailing youth unemployment rate of 53.40% based on NBS

data in 2022, lifting the moratorium on duties on digital transmissions could exacerbate the unemployment situation in the country.

Furthermore, the analysis establishes a clear link between digital goods imports and labour productivity, underscoring the widespread adoption of ICT products for cost minimization in various MSMEs. Thus, digital trade emerges as a critical driver for the growth of the Nigerian economy and enhances its global competitiveness. As part of broader efforts to enhance the export intensity of MSMEs in Nigeria, digital trade has proven to be a potent tool. It significantly contributes to the capacity of MSMEs to engage in exportable products, thereby positively impacting the country's balance of payment position. In conclusion, digital trade has not only benefited MSMEs in the country but has also made a substantial contribution to the overall Nigerian economy.

ⁱ <https://data.adb.org/dataset/2022-adb-asia-small-and-medium-sized-enterprise-monitor-volume-1-country-and-regional>

ⁱⁱ <https://www.oecd.org/industry/input-output-tables.htm>