



Research Paper

Post Covid-19: Micro, Small and Medium Enterprises Effectiveness and Digital Transformation in Southeast Nigeria

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Abstract

Today governments and businesses world over are facing the challenges of low productivity growth, weak trade and investment, and rising high inequality of income, wealth and well-being caused by the outbreak of Covid-19 pandemic. This study adopted the survey research design in examining the impact of digital transformation on MSME's Effectiveness in South East Nigeria. A sample size of 174 was determined from a population of 310 using the Taro Yamneh formula. In analyzing data, the descriptive statistics of mean and standard deviation were adopted to answer the research questions and Correlation analysis to test the hypotheses with the aid of SPSS version 20 at 95% confidence level. Result shows a p-value of 0.001 less than 0.05 and a correlation coefficient of 0.811 that indicate that Information technology has a significant effect on MSME's effectiveness in South East Nigeria. The study recommend that firms should introduce the use of digital technologies to ease MSMEs access to skills and talents, through better online task hiring. The study concludes that in digital transformation literature for MSME's, there are a number of factors that play a dominant role in shaping up the desirable output and without having a proper business goal and sufficient technologies and tools to back it up, companies will continue to suffer in the long run.

Keywords: *Enterprise, Technology, Digital, Effectiveness, Transformation*

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I. Introduction

COVID-19 pandemic outbreak which originated from Wuhan China in December 2019, have led many countries to impose travel restrictions and movement controls. In Nigeria, the Micro, Small and Medium Enterprises (MSME'S) sectors are one of the most directly affected by the movement's control order. MSMEs experience business cancellation or closure of several supporting sectors such as retails and transportation (Matt & Rauch, 2020). In many countries like Nigeria, governments are facing the challenges of low productivity growth, weak trade and investment, and rising high inequality of income, wealth and well-being. The challenges were exacerbated by the 2007-08 global crisis, which also reflect structural conditions (OECD, 2016a, 2017a). Micro, Small and Medium-sized firms (MSMEs) are central to the collective goal of increasing productive potential, reducing inequality and ensuring that the benefits from increased globalization and technological progress are shared, as documented in OECD work on the productivity-inclusiveness nexus (OECD, 2016a). Similarly, MSMEs can help countries adapt to other major transformations in the global environment, seizing new opportunities and contributing to mitigate risk (Matt & Rauch, 2020).

According to Matt & Rauch (2020) Micro, Small and Medium-sized Enterprises (MSMEs) as the backbone of the economy, have an enormous leverage effect, and crucial in developing specific concepts for Smaller companies. Regardless of the size of a company, a digital transformation strategy offers opportunities for growth and Sustainable competitiveness. Boughton&AroKiam, (2000) maintain that typically, MSMEs are

not only adaptive and innovative in terms of their products, but also in terms of their manufacturing practices. Hence, recognizing the continued competitive pressures, Small organizations are becoming increasingly proactive in improving their business operations, which significantly introduce new concepts as a good starting point (Boughton & Arokiyam 2000). Deloitte (2015) insist that MSMEs are most likely to be the big winners from the shift caused by the COVID-19 crisis, because it can develop and implement new Information technology (IT) structures easily.

Many Micro, Small and Medium-sized companies are already focusing on digitized products in order to stand out in the market (PWC 2015). Thus, the integration of information and communication technology (ICT) and modern industry technologies would no doubt transform today's MSME factories into smart and efficient environments with significant economic potential (Gualtieri, Rojas, Carabin, Palomba, Rauch, Vidoni, & Matt, 2018). Structural shift in the international division of labour associated with the rise in global value chain (GVCs) offers MSMEs new opportunities to participate in global markets, specializing in specific segments of production. MSMEs can however, integrate the global economy in different ways, as exporters, suppliers to large firms that export, and importers of competitively priced and higher quality foreign inputs, capitals goods and technologies (OECD, 2018). Stronger participation by MSMEs in global markets creates opportunities to scale up and enhance productivity, accelerating innovation, facilitating spill-over of technology and managerial know-how, broadening and deepening the skill set.

Greater flexibility and capacity to customize and differentiate products can give MSMEs a competitive advantage in global markets relative to large firms, as they are able to respond rapidly to changing market conditions and increasingly shorter product life cycles (OECD, 2018). Innovation in terms of digital transformation is often driven and diffused by new and established MSMEs. Some MSMEs are at the productivity frontier and amongst the most innovative firms, jump-starting entire new industries. Such Small and Medium-size firms can exploit technological or commercial opportunities that have been neglected by big enterprises and thus, enable the commercialization of knowledge generated by innovative research organizations (OECD, 2010a).

Start-ups according to Matt & Rauch, (2020) are the key source of radical and disruptive innovations, especially in sectors such as software, biotechnology, clean technologies and other manufacturing technologies, including through increased competitive pressure they put on incumbent firms. However, MSMEs are often an essential channel for the diffusion and adaptation of innovations to different contexts (Matt & Rauch, 2020). Typically, MSMEs according to OECD/EU, (2015) are central to efforts to ensure that growth is more inclusive by creating job opportunities across geographic areas and sectors, employing broad segments of the labour force, including low-skilled workers, and providing opportunities for skills development. MSMEs also contribute inclusion by serving locations, populations and markets that do not have enough scale to attract larger firms (OECD, 2015). However, MSMEs creates entrepreneurial opportunities that represent an important vector for economic and social participation and upward mobility, by allowing disadvantaged or marginalized groups, including young people, migrants, ethnic minorities, adult men and women, and the disabled to participate in the economy (OECD/EU, 2015).

Statement of the problem

The emergence and intensification of the use of IT for digital transformation, and the shift from a traditional producer/consumer ecosystem has become more challenging for MSME's. Digital technologies allow MSME's to improve market intelligence and access global markets and knowledge networks at relatively low cost. However, digital transition facilitates the emergence of "born-global" small businesses and provides new opportunities for MSME's to enhance their competitiveness in local and global markets through product and services innovation and improved production processes, hence the need for this study. The problem before this study, therefore is to examine the impact of digital transformation in Micro, Small and Medium Scale Enterprises (MSMEs) in South East Nigeria.

Objectives of the Study

The objective of the study is to examine the impact of digital transformation in MSME's in South East Nigeria. Specifically, the study is to:

1. Examine how Information technology affect MSMEs Effectiveness in South East Nigeria.
2. Asses how online task hiring influence MSMEs Effectiveness in South East Nigeria.
3. Determine the impact of globalization on MSMEs Effectiveness in South East Nigeria.
4. Investigate the effect of online payment on MSMEs Effectiveness in South East Nigeria.

Research Question

1. What is the effect of Information technology on MSME's Effectiveness in South East Nigeria?
2. To what extent has online task hiring influence MSMEs Effectiveness in South East Nigeria?
3. What is the impact of globalization on MSMEs Effectiveness in South East Nigeria?

4. What is the effect of online payment on MSMEs Effectiveness in South East Nigeria?

Research Hypotheses

Ho₁: Information technology have no significant effect on MSME's Effectiveness in South East Nigeria.

Ho₂: Online task hiring have no significant influence on MSMEs Effectiveness in South East Nigeria.

Ho₃: Globalization have no significant impact on MSMEs Effectiveness in South East Nigeria.

Ho₄: Online payment have no significant effect on MSMEs Effectiveness in South East Nigeria.

II. Review of Related Literature

Conceptual Review

The Micro, Small and Medium sized Enterprises act as a backbone of the Nigerian economy due to their significant contribution in the areas of productivity, trade, and employment (Somani, 2020). With the fourth industrial revolution focusing majorly on manufacturing process enhancement through the internet of things (IOT), cyber security system, artificial intelligence (AI), and cloud computing, MSME's act as a key contributor to the Nigerian economy. Indeed, digital transformation has showcased a paramount shift in the conventional methods of manufacturing, storage, material handling, and delivering. Businesses usually have three top priorities, namely, winning new customers, reducing operational cost, and growing revenue consistently (Somani, 2020).

However, major challenges like increased costing, outpacing the revenue growth, fewer profit margins due to inefficiencies, and financing new investments can be quite daunting in the unprecedented business growth (Somani, 2020). Calvino, Criscuolo & Menon (2016) posit that surviving start-ups scale up faster in high-risk sectors, such as telecommunications, scientific research and development and IT services. Well established MSMEs to innovation has increased in recent decades due to changes in the way innovation takes place in the economy (OECD, 2017c).

Enterprise innovation according to OECD, (2010a) is often the outcome of collaborative efforts in which businesses interact and exchange knowledge and information with other partners as part of broader innovation systems. The shift towards an "open innovation" paradigm is facilitated by digital transition, which has reduced the need for innovation-related capital investments, making business innovation more accessible to MSMEs (OECD, 2017c).

Although Globalization has increased the importance of cross-border collaboration in innovation, MSMEs often find it difficult to identify and connect to appropriate knowledge partners and networks at the local, national and global levels. In light of such developments, the importance of an open, competitive and pro-growth environment and of innovation systems that are conducive to knowledge flows and effective commercialization has considerably increased. Thus, supporting innovation in established MSMEs holds the potential to contribute to inclusive growth by enhancing productivity growth of small businesses and reducing wage gaps between MSMEs and large companies (OECD, 2017c).

Studies carried out by OECD working party on MSME and entrepreneurship in 2017, shows that while conducive framework conditions are essential to small business innovation, managerial skills and formal management practices play a key role for leveraging internal strategic resources towards in-house innovation and collaboration with external partners. In most MSMEs, effective adoption of ICT involves the use of automation and digitalization in manufacturing that requires strong managerial skills in MSMEs (OECD, 2017c).

Digital technologies allow MSMEs to improve market intelligence and access global markets and knowledge networks at relatively low cost. According to report prepared for a joint G20/OECD (2017), digital transition facilitates the emergence of "born global" Small businesses and provides new opportunities for MSMEs to enhance their competitiveness in local and global markets through product or service innovation and improved production processes. Digital transition opens a range of new opportunities for scaling up, and different forms of business growth are emerging, with some enterprises able to achieve a substantial scale without an important mass of employees or other tangible assets. Hence, lean start-ups are emerging that leverage the internet to lower fixed costs and outsource many aspects of the business to stay agile and responsive to the market (OECD, 2017d).

OECD, (2017d) maintain that the use of digital technologies can ease SMEs access to skills and talents, through better job recruitment sites, outsourcing, online task hiring, and connection with knowledge partners. Improved impacts on traditional MSME financing and digitalization enabled by mobile banking and online payment has allowed new financial services to emerge, with innovative solutions to address information asymmetries and collateral shortages (OECD, 2017d). Policy can play a role in ensuring that MSMEs reap the benefits of increased digitalization.

However, because affordable and widespread coverage of digital networks are essential, targeted marketing policies can help diffuse digital technologies to MSMEs and enable their effective use, while

addressing related risks. This can be achieved through the development of appropriate skills and complementary investments in organizational change and innovation. Digital market encourages sound competition that enables new firms to challenge incumbents, and efficient firms to grow, and the inefficient firms to exit (OECD, 2017c).

Digital Transformation Relations Dimensions

The emergence and intensification of the use of IT for digital transformation and the shift from a traditional “producer/consumer” ecosystem (e.g. Business ecosystem) has become more challenging for MSMEs (Neirotti 2018, cited in Pelletier & Cloutier 2019). Similarly, entrepreneurs want to ensure business success strongly encouraged by public and support organizations to initiate a rapid “digital transformation” as well as to elaborate a deliberate digital strategy (OECD, 2017). Based on an increased use of IT that involves different opportunities for innovation, including for service innovation, organizational transformation is understood as a process that engenders a qualitatively different organization (Besson & Rowe, 2012, in Pelletier & Cloutier 2019).

Given what precedes, the use of representations based on the notion of sense making appears promising. According to Weick (1995) in Pelletier & Cloutier (2019), a sense making process in such a context, raises four central questions regarding digital transformation challenges and IT-related issues, that is: how do people construct this sense? what they construct? why? And with what effects? In doing so, the sense making concept joins that of group representations within which individuals create representation of something (Object, idea, concept, etc.) or someone (individual, group, etc.) to construct a cognitive framework for their interpretation of reality.

Digital transformation changes the way of doing business, and in particular how enterprises as well as individuals and groups operate, communicate and create value through IT. In such a context, individuals create a representation of this transformation to construct a cognitive framework for their interpretation of reality. Thus, an individual’s thoughts do not form in isolation, but rather are based on collectively shared images of objects (Pelletier & Cloutier, 2019).

The social dimension of the process of digital transformation is thus revealed, an aspect of sense making that is easily forgotten. In doing so, the need for connecting complementary forces to support entrepreneurship and MSMEs, has been expressed especially given challenges of the digital age. According to Besson & Rowe, (2012) In Pelletier & Cloutier (2019), there are several reasons for this. First, digital transformation in MSMEs addresses psychological inertia at the individual level (e.g. entrepreneur), socio-technical inertia at the group level (e.g. IT professionals) and economic and political inertia at the systemic level (e.g. socio-economic support professionals). Second, the specific and emerging IT needs results in the increased interdependence of varied and more frequent new relationships among actors working together. Third, the very high possibility critical resources or key technological activities for enterprise and its operations stand outside organizational boundaries, especially regarding resources required as inputs into innovation and services offered. Fourth, the need to define the respective boundaries of action for all actors involved, including conditions under which activities and exchanges occur.

Matt, Rauch, & Fraccaroli (2016) insist that given the multidimensionality and the growing complexity of digital transformation, MSMEs are thus increasingly in need of professional IT resources as well as support from socio-economic development organization and institutions. Pelletier & Cloutier (2019) posit that, MSMEs need to develop and / or access strategic technology partnership capabilities with regard to IT and digital transformation issues, which form a complex set of capabilities related to: Complementarity; learning and exploitation; organizational elements; network, alliance and partnership, as well as technological, innovative and internal expertise.

Digital Transformation and Value Cocreation in MSMEs

Given issues experienced in MSMEs, they accelerating digital transformation places IT professionals in front of two challenging situations regarding social interactions among each other and with other actors. The need to develop, which from the learning perspective, the situation refers to the development of a type of co-specialization concerning information and know-how between IT professionals and users with the underlying idea of enhancing the lived common experience. The need to develop corresponds to the “Value Cocreation Framework” where service is defined as a process of using one’s resources for the benefits of another, rather than an outputs in terms of intangible products. Because mind shifts and cultural changes are required, digital transformation according to OECD (2017) is generally costly, time-consuming and risky. As for MSMEs, IT professionals need a complex set of capabilities that implies skills and aggregated knowledge through educated organizational processes.

Similarly, with respect to socio-economic support, professionals particularly the ones focused on financial services, their client needs change and evolve rapidly in response to digital transformation pressures. Given the rising strategic importance of IT for MSMEs, the subgroup of actors may not feel prepared enough to offer this emerging or higher knowledge-based intervention (OECD, 2017). MSMEs social aspects surrounding

the work of IT professionals and socio-economic support professionals interacting with other actors are crucial to help connect their respective resources and expertise. This however, explains why, from an ecosystemic perspective, actual inputs and requirements may sometimes differ from the current discourse about MSME's needing to engage in a "Digital Agenda" and rush to address the urgency of the "Digital Transformation" (Roundy & Fayard, 2019; cited in Pelletier & Cloutier, 2019).

III. Methodology

This study adopted the survey research design in examining the impact of digital transformation on MSME's Effectiveness in South East Nigeria. The population figure of 310 was obtained from three entrepreneurial organizations selected from across Owerri, Enugu and Anambra, Nigeria. A sample of 174 was determined for the study using Taro Yamme's formula. The use of pilot study was adopted for determination of the reliability of the research instrument and data obtained from pilot survey were committed to test of reliability using Cronbach Alpha statistic. The result reported a Cronbach Alpha of 0.81. The instrument was therefore 81% reliable. For the data analysis, the descriptive statistics of mean and standard deviation were adopted to answer the research questions. Correlation analysis was used to test the hypotheses. Data were analyzed using SPSS version 20 at 95% confidence level.

The formula for correlation is

$$r = \frac{n\sum xy - \sum x \sum y}{\sqrt{[n\sum x^2 - (\sum x)^2] [n\sum y^2 - (\sum y)^2]}}$$

The rejection of null hypothesis was based on $P < 0.05$

IV. Results and Discussion of Findings

Out of the 174 copies of the questionnaire distributed, 150 copies were properly filled and returned.

Table 1: Respondents' responses on the effect of Information technology on MSME's Effectiveness in South East Nigeria

Q/N	Item	SA	A	UN	D	SD	N	Mean	Std.Dev.
1.	Information technology effect and MSMEs Effectiveness Application of Information technology enhances organizational effectiveness.	70	49	0	7	24	150	3.89	0.71
	Digital technologies can ease MSMEs access to skills and talents, through better job recruitment sites, outsourcing, online task hiring, and connection with knowledge partners.	56	35	14	21	24	150	3.52	0.421
3	Online task hiring influence and MSMEs Effectiveness Use of digital technologies can ease MSMEs access to skills and talents, through better online task hiring.	80	35	7	28	0	150	4.11	0.992
	Digital transformation in MSMEs addresses psychological inertia at the individual level.	70	28	14	35	3	150	3.85	0.781
5.	Globalization impact and MSMEs Effectiveness Globalization has increased the importance of cross-border collaboration in innovation.	77	49	0	7	17	150	4.08	0.803
	Digital market through globalization encourages sound competition that enables new firms to challenge incumbents, and efficient firms to grow, and the inefficient firms to exit.	70	42	14	7	17	150	3.94	0.611
7	Online payment effect and MSMEs Effectiveness Online payment allows new financial services to emerge, with innovative solutions to address information asymmetries and collateral shortages.	70	56	9	7	8	150	4.15	1.126
	Policy plays a role in ensuring that MSMEs reap the benefits of increased digitalization.	55	51	19	2	23	150	3.75	0.784

Field Survey (2022)

The table 1 above presents data from responses by the respondents under study. The result disclosed a strong agreement by the respondents on the effect of Information technology on MSME's Effectiveness in South East Nigeria. A perusal of the values for mean and standard deviation shows that information technology has a significant effect on MSME's effectiveness in South East Nigeria.

Testing of Hypotheses

Here the hypotheses associated with the study were tested. The hypotheses were tested in order to find out whether the difference in opinion was significant to draw conclusion.

Hypothesis 1: Information technology have no significant effect on MSME's Effectiveness in South East Nigeria.

Table.2

Item	Mean	Standard Deviation	Correlation Coefficient	P-Value
Information Technology	3.89	0.71	0.811	0.001
MSME's Effectiveness	3.52	0.421		

SPSS Correlation Analysis Output (2022)

The result on table 2 presents the correlation analysis between Information technology and MSME's Effectiveness. The result shows a p-value of 0.001 and correlation coefficient of 0.811. The result shows a p-value less than 0.05 being the level of significance; therefore, rejecting the null hypothesis and accepting the alternative hypothesis which states that Information technology has a significant effect on MSME's effectiveness in South East Nigeria. Therefore, the correlation coefficient between application of Information technology and MSMEs effectiveness is statistically significant. Thus, application of Information technology significantly affects MSMEs organizational effectiveness.

Hypothesis 2: Online task hiring have no significant influence on MSMEs Effectiveness in South East Nigeria.

Table 3: Correlation Analysis between Online task hiring influence and MSMEs Effectiveness

Item	Mean	Standard Deviation	Correlation Coefficient	P-Value
Online task hiring	4.11	0.992	0.732	0.001
MSMEs Effectiveness	3.85	0.781		

SPSS Correlation Analysis Output (2022)

The result on table 3 presents the correlation analysis between Online task hiring influence and MSMEs Effectiveness. The result shows a p-value of 0.001 and correlation coefficient of 0.732. The result shows a p-value less \leq 0.05 level of significance; therefore, rejecting the null hypothesis and accepting the alternative which states that online task hiring has a significant influence on MSMEs effectiveness in South East Nigeria.

Hypothesis 3: Globalization have no significant impact on MSMEs Effectiveness in South East Nigeria.

Table 4: Correlation analysis between Globalization and MSMEs Effectiveness

Item	Mean	Standard Deviation	Correlation Coefficient	P-Value
Globalization	4.080.803	0.71	0.883	0.001
MSMEs Effectiveness	3.94	0.611		

SPSS Correlation Analysis Output (2022)

The result on table 4 presents the correlation analysis between Globalization and MSMEs Effectiveness in South East Nigeria. The result shows a p-value of 0.001 and correlation coefficient of 0.883. The result shows a p-value \leq 0.05 level of significance, thereby rejecting the null hypothesis and accepting the alternative which states that Globalization have no significant impact on MSMEs Effectiveness in South East Nigeria.

Hypothesis 4: Online payment have no significant effect on MSMEs Effectiveness in South East Nigeria

Table 5: Correlation Analysis between Online payment and MSMEs Effectiveness

Item	Mean	Standard Deviation	Correlation Coefficient	P-Value
Online Payment	4.15	1.126	0.883	0.001
MSMEs Effectiveness	3.75	0.784		

SPSS Correlation Analysis Output (2022)

The result on table 5 presents the correlation analysis between Online Payment and MSMEs Effectiveness. The result shows a p-value of 0.001 and correlation coefficient of 0.883. The result shows a p-value ≤ 0.05 level of significance, thereby rejecting the null hypothesis and accepting the alternative which states that Online payment has a significant effect on MSMEs Effectiveness in South East Nigeria.

V. Recommendations

1. MSME's should achieve digital transformation by continually investing in the latest software tools to gain a competitive advantage.
2. Application of Information and digital technologies that could enhance globalization should be encouraged to promote organizational effectiveness.
3. To address information asymmetries and collateral shortages in Organizations, Online payment that allows new financial services to emerge, with innovative solutions should be adopted by MSMEs.
4. Firms should introduce the use of digital technologies to ease MSMEs access to skills and talents, through better online task hiring.

VI. Conclusion

In digital transformation literature for MSME's, there are a number of factors that play a dominant role in shaping up the desirable output. Without having a proper business goal and sufficient technologies and tools to back it up, companies will continue to suffer in the long run. In testing hypothesis one, result shows a p-value of 0.001, correlation coefficient of 0.811 and a p-value less than 0.05 lead to the rejection of the null hypothesis and accepting the alternative hypothesis which states that Information technology has a significant effect on MSME's effectiveness in South East Nigeria. The result from test of hypothesis two shows a p-value of 0.001 and correlation coefficient of 0.732. The result shows that online task hiring has a significant influence on MSMEs effectiveness in South East Nigeria.

In testing hypothesis three result shows that Globalization has a significant impact on MSMEs Effectiveness in South East Nigeria, having recorded a p-value of 0.001 and correlation coefficient of 0.883. Test of hypothesis four indicated a p-value of 0.001 and correlation coefficient of 0.883. The result shows a p-value ≤ 0.05 level of significance, that lead to the rejection of the null hypothesis and acceptance of the alternative which states that Online payment has a significant effect on MSMEs Effectiveness in South East Nigeria.

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