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ENTREPRENEURSHIP, INNOVATION AND BUSINESS TECHNIQUE: EMERGING WORLD PATTERNS

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DEDICATION

Dedicated to the International Institute for Policy Review & Development Strategies for providing a platform that supports Institutional and Collaborative Research for Sustainable Development.

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Entrepreneurship and Business Development in Africa: Exploring the Advantages of Innovation.

[1]**Bassey Anam and** [2]**Kabouh Margret Nma**
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Entrepreneurship is critical to economic development. An entrepreneur is someone who, rather than working as an employee, comes up with an idea and starts a small business, bearing all of the firm's risks and rewards. An entrepreneur can also be an innovator, someone with a good idea, business rules, and the ability to turn those ideas into reality. Every entrepreneur contributes significantly to the growth of any country's economy.

Entrepreneurship is the foundation of the economy of each country. It has an inevitable impact on micro- and macro-economic factors such as GDP, economic growth, employment/unemployment rate, regional development, etc. Thus, entrepreneurial practices are crucial for each country to have better economic conditions. Entrepreneurship generates new jobs, accelerates economic growth by attracting higher-productivity firms, raises competition among existing businesses, and stimulates innovation.

Importance of Entrepreneurship
Mohamed (2020) has listed the following as some of the importance of Entrepreneurship;

1. Entrepreneurship Accelerates Economic Growth
Entrepreneurs are important to market economies because they can act as the wheels of the economic growth of the country. By creating new products and services, they stimulate new employment, which ultimately results in the acceleration of economic development. So a public policy that encourages and supports entrepreneurship

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should be considered important for economic growth. A large number of new jobs and opportunities are created by entrepreneurship. Entrepreneurship creates a huge amount of entry-level jobs that are very much important to turn unskilled jobholders into skilled ones. It also prepares and provides experienced workers for large industries. The increase in the total employment of a country largely depends on the rise of entrepreneurship. So the role of entrepreneurship in creating new job opportunities is huge.

By bringing innovation to every aspect of businesses, entrepreneurial ventures enhance production by utilizing the existing resources in the most effective ways. Entrepreneurs develop new markets by introducing new and improved products, services, and technology. Thus, they help generate new wealth and add more to the national income. So the government can offer the citizens more national benefits.

2. Entrepreneurship Promotes Innovation

Through the right practices of research and development, entrepreneurs bring innovation that opens the door to new ventures, markets, products, and technology. Entrepreneurs have a role to play in solving problems that existing products and technology have not yet solved**.** So by producing new products and services or bringing innovation to existing products and services, entrepreneurship has the potential to improve people's lives.

3. Entrepreneurship Can Promote Social Changes

Entrepreneurs change or break the tradition or cultures of society and reduce the dependency on obsolete methods, systems, and technologies. Entrepreneurs are the pioneer of bringing new technologies and systems that ultimately bring changes to society. These changes are associated with improved lifestyle, generous thinking, better morale, and higher economic choice. In this way, social changes gradually impact national and global changes. So the importance of social entrepreneurship must be appreciated.

***4.* Entrepreneurship Promotes Research and Industrial Development**

Along with producing new business ideas and thinking out of the box, entrepreneurs also promote research and development. They cultivate their ideas, shape them into a new form, and turn them into a successful business endeavors. Entrepreneurs are a special kind of people, they are always working to discover new ideas and improve existing ones. But their impact extends beyond their own companies and ventures: when an entrepreneur develops a new product, service, or idea, others often follow (and sometimes even further refine the ideas).

Innovation and industry are accelerated through the combined action of entrepreneurs. They can motivate each other, share ideas and inspiration, and share planning to establish new industries. The change in the existing industrial climate opens the doors for others at the same time. Therefore, we see that the importance of entrepreneurship to the economy is multi-functional.

5. Entrepreneurship Develops and Improves Existing Enterprises

We often think of entrepreneurs as inventing new products and ideas, but they also impact the existing business. Since entrepreneurs think differently, they can come up with innovative ways to expand and develop existing enterprises. For example, modernizing production processes, implementing new technology in the overall distribution and marketing processes, and helping the existing enterprises to utilize existing resources in more efficient ways.

Factors that Hamper Entrepreneurship

1. **Economic factors**: Economic factors are extremely important in an entrepreneur's economic growth. Whatever the case may be, capital flow is required for every idea to become an invention. Every piece of machinery or equipment required for a business requires capital. If an entrepreneur does not obtain capital from the government or his or her resources, his or her business idea will never take shape.
2. **Social factors:** It is difficult to avoid becoming a part of society's rat race. Entrepreneurs come up with novel ideas that are not always well received by society. Numerous other societal factors are important, such as education, awareness, research, and the willingness to accept and participate in change.
3. **Cultural factors**: Many innovations are not supported by a country's cultural front, which is why they are never successful. Entrepreneurs must take a different path to balance cultural ethics and profit.
4. **Overall motivation:** Even a thin stick floating in water can give a sinking man hope because something is always better than nothing. It is not easy to get anything started. Without self-motivation, one cannot achieve success. Along with self-motivation, external motivation, such as from society and loved ones, is critical for an entrepreneur. The only thing that keeps everything running smoothly is motivation.
5. **Availability of resources:** Various resources are required, such as the availability of technology, financial assistance, family support, and a space to work on the entrepreneur's imagination as desired.

Role of Entrepreneurs in Economic Development

1. **Capital formation:** Entrepreneurs mobilize the idle savings of the public through the issues of industrial securities. Investment of public savings in

industry results in productive utilization of national resources. Rate of capital formation increases which is essential for rapid economic growth. Thus, an entrepreneur is a wealth creator.

2. **Improvement in per capita income**: Entrepreneurs locate and exploit opportunities. They convert latent and idle resources like land, labour, and capital into national income and wealth in the form of goods and services. They help to increase net national product and per capita income in the country, which are important yardsticks for measuring economic growth.
3. **Generation of employment:** Entrepreneurs generate employment both directly and indirectly. Directly, self-employment as an entrepreneur offers the best way for an independent and honorable life. Indirectly, by setting up large and small-scale business units they offer jobs to millions. Thus, entrepreneurship helps to reduce the unemployment problem in the country.
4. **Balanced regional development:** Entrepreneurs in the public and private sectors help to remove regional disparities in economic development. They set up industries in backward areas to avail of various concessions and subsidies offered by the central and state governments.
5. **Improvement in living standards:** Entrepreneurs set up industries that remove scarcity of essential commodities and introduce new products. Production of goods on a mass scale and manufacture of handicrafts, etc., in the small scale sector help to improve the standards of life of a common man. These offer goods at lower costs and increase variety in consumption.
6. **Economic independence:** Entrepreneurship is essential for national self-reliance. Industrialists help to manufacture indigenous substitutes for hitherto imported products thereby reducing dependence on foreign countries. Businessmen also export goods and services on a large scale and thereby earn scarce foreign exchange for the country. Such import substitution and export promotion help to ensure the economic independence of the country without which political independence has little meaning.
7. **Backward and forward linkages**: An entrepreneur initiates change which has a chain reaction. Setting up of an enterprise has several backward and forward linkages. For example- the establishment of a steel plant generates several ancillary units and expands the demand for iron ore, coal, etc. These are backward linkages. By increasing the supply of steel, the plant facilitates the growth of machine building, tube making, utensil manufacturing, and other units.

Going forward, old ideas must be replaced by new ones, and old products, services, and processes are substituted by those which are better and more effective; this is indispensable for healthy and sustainable economic development. this is the central

place of innovation in Business and Africa needs this to advance its frontiers. This volume focuses on exploring emerging world innovations and patterns in business and entrepreneurial development.

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Executive Summary

Six Ways to Improve Global Supply Chains

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It used to be a simple matter to outsource production to other countries, have them manufacture clothes, electronics, computer chips, and medicines, and ship the items back to the United States. America provided value through design capabilities and reliance upon domestically-produced components. But many businesses utilized inexpensive labor from abroad to assemble products, and global distributors then would deliver materials "just-in-time" for American firms.[1] Now we are seeing the limits of this model. It is a time of tremendous disruptions in global supply chains with many problems ranging from shifts in consumer demand and off-shoring reliability to transportation jams, anti-competitive practices, and geopolitical complications.[2] As noted in a 2022 Council of Economic Advisers report, supply chains currently "are efficient but brittle – vulnerable to breaking down in the face of a pandemic, a war or a natural disaster. Because of outsourcing, off-shoring and insufficient investment in resilience, many supply chains have become complex and fragile."[3]

In this paper, I outline six ways to improve global supply chains:

1. Boosting domestic production through on-shoring and near-shoring
2. Easing transportation jams
3. Prioritizing public health
4. Managing labor shortages
5. Fighting anti-competitive practices
6. Mitigating geopolitical tensions

Making progress in these areas would go a long way towards easing current global supply chain disruptions and putting global trade back on a firmer footing.

1. Organization of Economic Cooperation and Development, "Trade in Value Added: United States," December, 2018.
2. Richter Consulting, "Supply Chain Challenges COVID Update, June 4, 2021.
3. Ben Casselman and Ana Swanson, "Supply Chain Problems Will Outlast Pandemic, White House Says," *New York Times*, April 15, 2022, p. B3.

Boosting Domestic Capabilities Through On-Shoring and Near-Shoring

Years ago, many companies adopted a "just-in-time" approach to supplies in which they stocked only what they immediately needed and trusted supply chains to deliver other items quickly. That approach saved money because firms did not need to build extended storage facilities or keep a full inventory. Rather, they kept their stocks low and refreshed on an "as needed" basis.[4] At the same time, much of the country's manufacturing capacity shifted abroad as corporate leaders sought low labor and energy cost areas where products could be made inexpensively.[5] While American manufacturing's share of overall output remained constant, its labor share declined as firms automated production lines and relied upon emerging technologies.[6] That production and distribution system worked as planned until difficulties in the global supply chain disrupted those practices and created problems in terms of supplies, safety, and security. Concerns unleashed by the pandemic and dependence on foreign manufacturers combined to increase risks and raise worries regarding just-in-time practices.[7]

The disruptions caused by these alterations have led to calls for a greater domestic manufacturing capability through on-shoring or near-shoring. On-shoring refers to bringing production back to the United States where it is safe from foreign adversaries and subject to domestic health and safety provisions. Near-shoring is bringing production back to friendly countries not far from the United States so that production does not have long transportation times or suffer from security or safety problems. Such a stance would rely more substantially on places such as Canada and Mexico, where the supply lines would be shorter and the politics usually more dependable. Some governments are providing incentives to launch or return production to their homelands. Singapore, for example, has announced a Together Enhancing Enterprise Resilience Programme that offers money to upgrade business operations and capacity. Italy has developed programs to restore the production of luxury goods in jewelry, fashion, and textiles. Japan has established a fund "to finance 70% of the relocation costs for small and medium enterprises producing PPE and raw materials for drugs."[8]

4. Alessio Ishizaka, Arijit Bhattacharya, Angappa Gunasekaran, Rob Dekkers, and Vijay Pereira, "Outsourcing and Offshoring Decision Making", *International Journal of Production Research*, Volume 57, July 20, 2019, pp. 4187-4193.
5. Florian Butollo, "Digitalization and the Geographies of Production: Towards Reshoring or Global Fragmentation?", *Competition & Change*, April 10, 2020.
6. YiLi Chien and Paul Morris, "Is U.S. Manufacturing Really Declining?", Federal Reserve Bank of St. Louis, April 11, 2017.
7. Steven Brakman, Harry Garretsen, and Arjen van Wittleloostuijn, "The Turn from Just-in-Time to Just-in-Case Globalization in and after times of COVID-19: An Essay on the Risk Re-Appraisal of Borders and Buffers," *Social Sciences & Humanities Open*, Volume 2, 2020.
8. Paolo Barbieri, Albachiara Boffelli, Stefano Elia, Luciano Fratocchi, Matteo Kalchschmidt, and Danny Samson, "What Can We Learn About Reshoring After COVID-19?", *Operations Management Research*, Volume 13, 2020, pp. 131-136.

In a number of cases, these incentives are firm-specific and provide funds to individual companies that agree to bring back manufacturing operations to their native lands. At other times, the programs are industry-wide and provide tax incentives and/or infrastructure investment that makes it possible for a variety of firms to reshore their operations. However, a European Parliament report found modest benefits to reshoring in the United Kingdom, United States, and Japan, and argued that "reshoring should be primarily focused on specific critical sectors and products with pronounced supply bottlenecks."[9] Rather than an across-the-board solution, its authors advocated targeted reshoring because host countries often did not have the production facilities and/or workforce required for wholesale reshoring.

A 2021 World Bank analysis went even further in warning against widespread reshoring. In the report, experts stated, "It is, however, premature to conclude that firms should or will shift gears from 'just-in-time' GVCs (Global Value Chains) to 'just-in-case' GVCs. Shorter GVCs and localized production are not necessarily less vulnerable to shocks. Supplier diversification and relocation can be costly and impractical for highly complex products. And holding more inventory and building redundant capacity could create inefficiencies in many industries."[10]

A 2021 World Bank analysis went even further in warning against widespread reshoring. In the report, experts stated, "It is, however, premature to conclude that firms should or will shift gears from 'just-in-time' GVCs (Global Value Chains) to 'just-in-case' GVCs. Shorter GVCs and localized production are not necessarily less vulnerable to shocks. Supplier diversification and relocation can be costly and impractical for highly complex products. And holding more inventory and building redundant capacity could create inefficiencies in many industries."[10]

For these reasons, experts have called for digital tracking that eases logistical delays. In the UN report, for example, writers noted that "The recent shortage in containers and maritime equipment took stakeholders by surprise. Monitoring of port calls and liner schedules, along with better tracing and port call optimization, are among the

9. Werner Raza, Jan Grummiller, Hannes Grohs, Jurgen Essletzbichler, and Niko Pintar, "Post-COVID-19 Value Chains: Options for Reshoring Production Back to Europe in a Globalised Economy," European Parliament Policy Department for External Relations, March, 2021.
10. World Bank, "Global Value Chains in the Time of COVID-19", 2021, pp. 188-217.
11. Jade Man-yin Lee and Eugene Yin-cheung Wong, "Suez Canal Blockage: An Analysis of Legal Impact, Risks and Liabilities to the Global Supply Chain", *MATEC Web of Conferences*, Volume 339, 2021.
12. Peter Goodman, "U.S. Importers Accuse Shippers of Price Gouging," *New York Times*, May 7, 2022, p. B1.
13. United Nations Conference on Trade and Development, "Container Shipping in Times of COVID-19: Why Freight Rates Have Surged, and Implications for Policymakers", No. 84, April, 2021.

issues covered by the growing field of maritime informatics."[14] Improved tracking and tracing would help identify logjams and allow firms to take action that eases delivery problems. Right now, it is not always easy to keep track of the hundreds of thousands of shipping containers that traverse the world. Using technology to monitor movements and anticipate logjams would go a long way to addressing logistical problems and easing transportation logjams.[15]

Prioritizing Public Health

The past two years have been a time of tremendous stress due to the COVID-19 pandemic and product shortages in key areas. The surge in ecommerce and consumer demand and public health challenges during the pandemic put pressure on manufacturing and distribution facilities around the world. With much of the developed world having shifted to off-shore manufacturing and just-in-time supply chains, it did not take long after COVID-19 appeared for global supply chains to become overstretched and frayed. Businesses that had gotten used to manufacturing key products in the developing world and having quick turnaround to global markets discovered that pandemics wreak havoc on component supplies, manufacturing, distribution, public health, and the workforce. Products that might be available in a matter of days shifted to schedules that took weeks or months. There was no easy way to address supply chain issues when manufacturers had product shortages and sick workers.

Research has found that consumer demand rose in some areas such as face masks, medical supplies, and pharmaceuticals and quickly outpaced the ability of manufacturers to keep up with the desire for these products. The pandemic shifted consumer demand and market trends and disrupted established business practices. It limited demand in sectors requiring in-person interactions while increasing it in others that were able to supply goods and services through digital platforms.[16] Some sectors experienced shortages in key components that made it difficult to produce needed products. This included areas such as personal protective equipment, medical supplies, pharmaceuticals, and electric vehicle batteries, among others. Not having access to all the critical ingredients or active drug compounds made it impossible to manufacture certain items and limited the ability of businesses to satisfy consumer demand.

14. United Nations Conference on Trade and Development, "Container Shipping in Times of COVID-19: Why Freight Rates Have Surged, and Implications for Policymakers", No. 84, April, 2021.
15. Mohamed Salah El Din, Masangu Reason, Melisa Neube, and Sultan Al Kaabi, "The Impact of Post-COVID-19 Container Shortage Crisis on Global Supply Chains," Proceedings of the International Conference on Industrial Engineering and Operations Management, Harbin, China, July 9-11, 2021.
16. Naveen Donthu and Anders Gustafsoon, "Effects of COVID-19 on Business and Research," *Journal of Business Research*, Volume 117 September, 2020, pp. 284-289.

To mitigate these problems, it is important to take steps that improve the public health infrastructure. It will be difficult to resolve supply chain disruptions as long as major public health challenges roil the workforce. A March 2021 McKinsey report argued economic recovery is "highly dependent on how quickly health risks recede with vaccinations and whether governments provide further economic support."[17]

There is a close interplay between health and economic productivity so making sure we have effective health infrastructure and treatments is vital to dealing with the negative consequences of pandemics on global supply chains. One should not expect COVID-19 to be the last pandemic the world faces. With the interconnectedness of global life and international travel and commerce, businesses should plan on periodic epidemics and pandemics and have public health systems that are prepared to deal with major outbreaks. Contagious diseases are quite common, and the world needs to invest in infrastructure, contact tracing, and treatment to guard against devastating economic repercussions. Otherwise, many places will be caught off guard and suffer debilitating health and business fallout.[18]

Dealing with Labor Shortages

In recent years, labor shortages and economic shocks have roiled supply chains and generated delays, cost increases, and a range of logistical challenges. As a result, inflation has returned as an economic problem, and there are complications linked to underlying shifts in the workforce. A changing demography is part of the problem. As documented by the Federal Reserve Bank of Boston, the population is aging and so is the workforce. Overall participation in the workforce declined during the pandemic and has not recovered to its pre-COVID-19 levels. Despite a low national unemployment rate, a number of people remain outside the workforce, and this is especially the case with women who are taking care of children and elderly parents.[19]

As the economy has recovered, there remain labor shortages that make it difficult for businesses to staff their positions and deal with current consumer demand. In a 2021 Society for Human Resources Managers survey, 90 percent of firms reported difficulty in filling particular positions. This was especially true for manufacturing, hospitality, and healthcare sectors. COVID-19 generated worries about public health, and it was difficult for businesses to find workers for their open jobs.[20] The pandemic clearly has complicated the labor situation. A Brookings report by Katie Bach found that 30

17. James Remes, James Manyika, Sven Smit, Sajol Kohl, Victor Fabius, Sundiatu Dixon-Fyle, and Anton Nakaliuzhnyi, "The Consumer Demand Recovery and Lasting Effects of COVID-19," McKinsey Global Institute, March 17, 2021.
18. Matt Craven, Adam Sabow, Lieven Van den Veken, and Matt Wilson, "Not the Last Pandemic: Invest Now to Reimagine Public-Health Systems, McKinsey & Company, May 21, 2021.
19. Daniel Cooper, Christopher Foote, Maria Luengo-Prado, and Giovanni Olivei, "Population Aging and the US Labor Force Participation Rate," Federal Reserve Bank of Boston, 2021.
20. Society for Human Resource Managers, "The COVID-19 Labor Shortage," 2021.

million Americans suffered from "long COVID" and that 15 percent of the unfilled jobs were due to people suffering from that malady. She argues it is time for the Census Bureau to add COVID-19 questions to its workforce analysis so there could be a better understanding of the interplay of health and workforce issues.[21] The unanswered question right now is how many of these pandemic issues will be short-term or will remain part of workforce issues going forward. The country is grappling with a number of workforce shifts such as rising automation, digital transformation of many sectors, and a future of work characterized by AI, machine learning, and data analytics.22 Each one of these developments complicates supply chain challenges but taken together generate considerable uncertainties regarding the path ahead.

A McKinsey report recommends that public and private sector leaders invest in digital infrastructure to make it easier for workers to access broadband, perform their tasks, operate remotely, and deal with pandemics, automation, and demographic shifts. Worker retraining will be required for those at risk of falling behind and making sure employers have the employees needed to manufacture, distribute, and sell durable goods.[23]

Fighting Anti-Competitive Practices

Limited market competition fuels supply chain problems by making it difficult to prevent abusive market practices. In several areas, large firms have significant market power and sometimes use their control to raise prices and engage in anti-competitive practices. That accentuates market problems and aggravates supply chain problems. One recent example of market oligopolies is the baby formula sector. There, four firms generate "90% of the US supply of formula." When one firm encountered infections at a plant and the Food and Drug Administration closed that facility, there was a production shortfall and "panic buying" in the United States.[24] Combined with restrictions on the import of formulas produced abroad, shortages skyrocketed and persisted for months.

In this situation, there needs to be vigorous anti-trust enforcement designed to limit market dysfunctions and competitive abuses. In its United Nations report, experts argue, "…it is also important to ensure that national competition authorities can monitor freight rates and market behavior. UNCTAD is contributing to such monitoring through its research and statistics on fleet deployment, port calls, freight

21. Katie Bach, "Is 'Long COVID' Worsening the Labor Shortage?", Brookings Institution report, January 11, 2022.
22. Darrell M. West, *The Future of Work: Robots, AI, and Automation*, Brookings Institution Press, 2018.
23. McKinsey Global Institute, "The Future of Work After COVID-19," February 18, 2021.
24. Madison Muller and Leah Nylen, "How US Baby Formula Monopolies Have Failed Families," *Bloomberg Businessweek*, May 20, 2022.

rates and liner shipping connectivity. It remains important for policymakers to continue to strengthen national competition authorities in the area of maritime transport and ensure that they are prepared to provide the requisite regulatory oversight."[25] In the United States, the Jones Act for many years has limited American shipping to U.S.-owned boats. Although this requirement originally had the intention of boosting the domestic shipping industry, the legislation keeps shipping costs high while not always offering the protections that members of Congress sought. It artificially boosts costs and imposes bureaucratic barriers on domestic shippers without being very successful at aiding American firms. It may be time to revisit that legislation by lifting some of its provisions and consider ways to lower costs and improve supply logistics.[26]

Mitigating Geopolitical Complications

The geopolitical situation has grown more complex as Russia invaded Ukraine, relations between the U.S. and China have become more combative, and various countries have imposed tariffs, sanctions, and barriers to entry on other nations. With many goods, from electronics and medical equipment to clothes and furniture, being made in China, it is difficult to maintain open supply chains as long as geopolitical conflict intensifies and economic and security risks are high. Tensions escalated during the Donald Trump administration when he slapped tariffs on $350 billion of Chinese imports in response to a large trade gap and security concerns. In response, the Chinese added tariffs on $100 billion of American exports. According to Professors Pablo Fajgelbaum and Amit Khandelwal, this trade war raises costs to consumers and reduces aggregate economic growth.[27] COVID-19 did not help, as it revealed a dependence on Chinese manufacturers for personal protective equipment, pharmaceuticals, and electronic devices that endangered public health and security. A report from the Congressional Research Service found that the pandemic led to shortages of medical equipment and drug supplies in the United States. These shortages became particularly acute in 2020 when China nationalized its authority over medical supplies and prioritized deliveries within its own nation and to other friendly countries. That intensified a lack of supply in the United States just when people were suffering the most.[28]

25. United Nations Conference on Trade and Development, "Container Shipping in Times of COVID-19: Why Freight Rates Have Surged, and Implications for Policymakers", No. 84, April, 2021.
26. Colin Grabow, Inu Manak, and Daniel Ikenson, "The Jones Act: A Burden America Can No Longer Bear," Cato Institute, June 28, 2018.
27. Pablo Fajgelbaum and Amit Khandelwal, "The Economic Impacts of the US-China Trade War," National Bureau of Economic Research, December, 2021. Also see Ryan Hass, "US-China Relations: The Search for a New Equilibrium," Brookings Institution, February, 2020.
28. Karen Sutter, Andres Schwarzenberg, and Michael Sutherland, "COVID-19: China Medical Supply Chains and Broader Trade Issues," Congressional Research Service, December 23, 2020.

Due to the risks of Chinese and Indian suppliers, some experts have called for a decoupling of America from foreign supply chains in critical areas.[29] The argument is the U.S. should enhance its own domestic capabilities and wean itself from a dependence on China in key sectors. While that advice is well-taken in certain critical areas, it would take years in other sectors to implement such a strategy and build domestic capabilities within the United States.

One stark example of the complex geopolitics impinging on supply chains is the semiconductor industry, where a shortage of computer chips harmed the ability of car manufacturers to produce cars and trucks and many other areas to manufacturing consumer devices, durable goods, and mobile phones. As the economy digitizes, a wide variety of products require computer chips, and production in some areas ground to a near standstill as chip shortages developed. According to Kleinhans and Hess, chip shortages emerged based on "high market entry barriers, high geographic concentration, high fab utilization and long manufacturing cycles."[30] In that area, the difficulties of decoupling are readily apparent because it can take up to a decade to build advanced fab production facilities and cost tens of billions of dollars. For that reason, decoupling is not a viable strategy for the immediate future. Even if implemented in certain sectors, production likely would just move from China to other parts of Asia. That would keep supply lines long and subject to regional politics and rivalries.

ather than outright decoupling, Saif Khan of the Georgetown University Center for Security and Emerging Technology argues the U.S. needs to take a variety of steps to improve its chip manufacturing capabilities and impose limits on China's chip fab buildup, slow its chip design capabilities, and control access to advanced computer chips. Taking these steps would limit the development of China's domestic semiconductor industry while still assuring U.S. access to vital chips.[31] Thinking more broadly, it is hard to imagine supply chain progress outside of a more stable geopolitical relationship between the U.S. and China. Manufacturing and distribution do not take place in a vacuum but rather depend on negotiated agreements, common frames of references, and processes for managing conflict points. A Brookings Institution report by John Allen, Ryan Hass, and Bruce Jones argues for "a concept of persistent competition leavened with calibrated cooperation [that] holds the greatest promise of sustaining support at home and with allies and partners."[32]

29. Jamie Gorelick and Stephen Preston, "US Decoupling From China and the Onshoring of Critical Supply Chains," Wilmer Hale, September 21, 2020.
30. Jan-Peter Kleinhans and Julia Hess, "Understanding the Global Chip Shortages," Stiftung Neue Verantwortung, November, 2021.
31. Saif Khan, "Securing Semiconductor Supply Chains," Georgetown University Center for Security and Emerging Technology, January, 2021.
32. John Allen, Ryan Hass, and Bruce Jones, "Rising to the Challenge: Navigating Competition, Avoiding Crisis, and Advancing US Interests in Relations with China", Brookings Institution, November, 2021.

Specifically, they call for strategic competition, avoiding unrealistic expectations, making investments in crisis management, avoiding war, negotiating arms control agreements, and engaging in efforts that "inoculate critical global systems from debilitating U.S.-China competition." They see climate change, pandemic control, and financial stability as areas of possible agreement. By building partnerships, engaging in diplomacy, and having realistic expectations about what is possible, they believe the two countries can maintain a fruitful relationship that can stabilize global trade, manufacturing, and distribution.

A Multifaceted Problem

To summarize, the challenge of improving global supply chains is their multifaceted nature. There is not a single cause, which, if corrected, would address the situation but a series of difficult problems that interact in complex ways. For example, labor shortages linked to economic shocks and a continuing pandemic weaken production capabilities and impede resolution. A *Washington Post* story made that clear connection when it documented how "COVID shutdowns in China are delaying medical scans in the U.S."[33] The reason is simple. When COVID-19 numbers increase, China closes factories that make medical equipment destined for America and therefore exacerbates supply chain obstacles. The same logic applies throughout supply lines and illustrates why it is so challenging to address these matters. Resolution is going to require progress on many different fronts. There will need to be improvements on a variety of factors to make a difference in production, logistics, and distribution. Progress will not be easy or quick but can be made if there is a clear and comprehensive strategy to deal with the multiple challenges and complex interconnections.

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Executive Summary

Strengthening Africa's Capacity to Trade

World Trade Organization, Geneva, Switzerland

The multilateral trading system overseen by the WTO has helped to spur economic development for both developing and developed economies by creating a more predictable, fair and transparent trading system that encourages investment and industrialization. However, in recent times, this progress has been slowed by crises such as that triggered by the COVID-19 pandemic. This new health and economic crisis has caused major disruptions to trade. In its October 2020 forecast, the WTO predicted that the volume of world merchandise trade would decline by 9.2 per cent in 2020, followed by a 7.2 per cent rise in 2021. In its October 2020 World Economic Outlook, the International Monetary Fund (IMF) forecast negative growth of -4.4 per cent for the world in 2020, with a rebound to 5.2 per cent in 2021. For sub-Saharan Africa, these figures are -8.0 per cent and 3.0 per cent, respectively.

In Africa specifically, the high prevalence of informal employment has been particularly affected by the social distancing measures implemented in an effort to control the spread of COVID-19 and by the disruptions to trade, particularly in services such as tourism and travel, which are important sources of revenues for African countries. The World Bank's April 2020 "Africa's Pulse" report (World Bank, 2020a) projected that, as a result of the pandemic, economic growth in sub-Saharan Africa would decline from 2.4 per cent in 2019 to between -2.1 per cent and -5.1 per cent in 2020. The October 2020 "Africa's Pulse" report (World Bank, 2020b) confirmed that growth in sub-Saharan Africa is predicted to fall to -3.3 per cent in 2020, pushing the region into its first recession in 25 years, driving up to 40 million people into extreme poverty across the continent and erasing at least five years of progress in fighting poverty. The downturn in economic activity will cost the region at least US$ 115 billion in output losses in 2020. These numbers have been driven to an extent by resource-intensive countries, particularly metal and oil exporters. Diversified economies expect more moderate declines. Forty-four out of the 55 member states of the African Union are members of the WTO. These economies are supported by the Development Division of the WTO Secretariat through the work of the African Group. African countries also benefit from other forms of support from the WTO, as well as

capacity-building activities run by other divisions of the WTO or by WTO-sponsored facilities and initiatives. This report also outlines collaborative efforts undertaken in 2019 by the WTO with the African Union in African countries in order to increase the continent's industrial and manufacturing capacity.

African trade in goods and services has amounted to around 3 per cent of global exports and imports on average. In 2019, African countries recorded exports of US$ 462 billion and imports of US$ 569 billion in merchandise trade. This constituted a fall of 3 per cent on average compared to 2018. Between 2005 and 2019, Africa's commercial services exports nearly doubled in value. However, this picture is incomplete; the continent's exports are dominated by one region. North Africa has accounted for about a third of all African goods and services trade, despite comprising only five of the continent's 55 countries. However, the share of exports contributed by sub-Saharan Africa has been steadily increasing and accounts for 70 per cent of all African goods and services exports. The WTO has made broad and diverse efforts to support trade development in Africa over the last 10 years. For example, WTO members, through the different bodies that comprise the organization, and the WTO Secretariat have implemented a broad range of agreements, decisions and technical assistance programmes, ranging from trade facilitation to government procurement regulations. Through technical assistance programmes and support for economic diversification and industrialization on the African continent, the WTO has played a role in fostering economic transformation. The WTO has supported trade development in Africa through its leadership on Aid for Trade. Since the launch of the initiative in 2006, donors have disbursed US$ 451 billion in official development assistance to help developing countries build trade capacity and infrastructure. US$ 163 billion of this amount has gone to African countries, with US$ 16.9 billion being disbursed in 2018, representing a 180 per cent increase from the 2006 baseline.

The Aid for Trade initiative focuses on economic diversification as being key to development; in the 2019 Aid for Trade monitoring exercise, 97 per cent of African respondents pointed to economic diversification as a priority. The Aid for Trade Work Programme for 2020-21 reiterates the importance of investments in digital connectivity, which have become more important as a result of the COVID-19 pandemic. Development financiers have also introduced new aid programmes, including a US$ 160 billion World Bank fund to address the economic impacts of the COVID-19 pandemic and a US$ 10 billion COVID-19 Response Facility from the African Development Bank (ADB). The Trade Facilitation Agreement (TFA) expedites the movement, release and clearance of goods and establishes measures for effective cooperation between economies to establish customs compliance. The TFA entered into force on 22 February 2017 after two-thirds of the WTO membership completed their domestic ratification processes. Studies show that full implementation of the

TFA could reduce trade costs by an average of 14.3 per cent and boost global trade by up to US$ 1 trillion per year, with the largest gains in the poorest countries. For the African region, the reduction in trade costs would average 16.5 per cent, with many countries facing reductions of between 15.8 and 23.1 per cent. Across coastal and landlocked Africa, reductions would average 16.8 per cent and 15.7 per cent, respectively.1This is significant, since the central African region has some of the highest trade costs in the world. As the cost of implementing trade agreements is significant for many economies, the WTO created the Trade Facilitation Agreement Facility (TFAF) to support implementation of the TFA. The TFAF has, for instance, funded the participation of African representatives at meetings and workshops focusing on capacity-building and utilization of the TFA.

The WTO also provides support for developing economies and least-developed countries (LDCs) through the Standards and Trade Development Facility (STDF), which helps imports and exports to meet sanitary and phytosanitary (SPS) requirements for trade based on international standards. The STDF has provided support for the implementation of Africa's SPS policy framework and has helped to strengthen sanitary capacity in many industries. The African Group2 has taken an active role in the implementation of another WTO agreement, the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement). While Article 66.1 of the TRIPS Agreement provides that the Agreement is not immediately binding for LDCs, TRIPS Agreement rules have served as the basis for intellectual property regulations that have helped innovators to market their goods and limit the spread of counterfeit goods. An amendment to the TRIPS Agreement, which took effect in 2017, establishes a secure and legal pathway for developing countries to obtain affordable medicine from generic suppliers. For example, a national workshop held in Dakar, Senegal in July 2019 covered the use of the TRIPS Agreement's special compulsory licence system to obtain affordable intellectual property for the advancement of public health. Transfers of technology to African LDCs, facilitated by the TRIPS Agreement, have played a significant role in the plan to enhance cotton production and processing in Benin, Burkina Faso, Chad and Mali.

Closely related to WTO development initiatives, the Agreement on Government Procurement (GPA) recognizes the importance of government procurement in ensuring sustainable consumption and production patterns. While no African country is currently a party to the GPA, adopting GPA disciplines such as the Article IV principle of non-discrimination can help members to attract foreign direct investment. GPA initiatives to increase competition and develop e-procurement capacity are designed to help reduce the costs of procuring vital foreign-sourced goods and services. The Enhanced Integrated Framework (EIF), an Aid for Trade facility purely dedicated to supporting trade development in LDCs, has successfully

supported African LDCs in building trade-related institutional and productive capacity. One example is an EIF project in Burkina Faso that has helped to increase the production and export of cashew nuts and dried mangoes to create jobs and increase profits for producers. Another example is the Benin Agricultural Development Company which, with the help of the EIF, has increased its production by 25 per cent and generated new exports to West Africa. Both projects provide concrete examples of the WTO's successful combination of development aid and technical expertise at the service of LDCs.

African countries continue to be major beneficiaries of several other WTO technical assistance initiatives: 16 per cent of all technical assistance activities in 2019 were focused on African countries. This includes the Netherlands Trainee Programme, which sponsors junior public officials and provides them with the opportunity to learn about matters dealt with within the WTO, under the direction of staff members of the WTO, with particular attention given to African countries. The French and Irish Mission Internship Programme also sponsors the attachment of officials to their countries' Geneva resident missions, with priority given to African members and LDCs. The WTO Secretariat has also continued to provide technical support with regard to the implementation of regional trade agreements between WTO members in Africa. The WTO Secretariat also works in cooperation with other regional bodies, including the Economic Community of West African States (ECOWAS). The WTO has organized virtual training activities on trade in services, trade facilitation and market access for officials of ECOWAS institutions in both English and in French since mid-2020. Likewise, the WTO collaborated with the Union économique et monétaire ouest-africaine (UEMOA) on a sub-regional training activity on intellectual property in 2019, and it cooperates directly with many African WTO members to collect information on their services policy regimes in the context of the Integrated Trade Intelligence Portal (I-TIP) database.

A stable multilateral trading system and access to international markets has had positive effects on the development and industrialization of Africa, and efforts to build capacity, to enable African countries to take fuller advantage of the benefits that trade brings, are continuing. In recent times, the COVID-19 pandemic has slowed these efforts and reduced the developmental gains of recent years. African countries are particularly vulnerable to the effects of the pandemic because of several factors that affect large swathes of their populations, such as informal employment, weak health systems, few social safety nets, and difficulties in mobilizing resources not only to fight the pandemic directly, but also to summon the fiscal and monetary resources needed to contain its economic impact. Keeping markets open and predictable, as well as fostering a more generally favourable business environment, will be critical to spur the renewed investment that is needed for a swift recovery. The multilateral trading

system and the WTO stand ready to continue providing the necessary framework for this to happen.

1WTO Secretariat calculations using disaggregated estimates from Moïsé and Sorescu (2013) based on Organisation for Economic Co-operation and Development (OECD) trade facilitation indicators.2The African Group is the coordinating informal body comprised of African members and observers. Currently this group comprises Angola, Benin, Botswana, Burkina Faso, Burundi, Cabo Verde, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Egypt, Eswatini, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Seychelles, Sierra Leone, South Africa, Tanzania, Togo, Tunisia, Uganda, Zambia and Zimbabwe.

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Executive Summary

Challenges of African Growth Opportunities, Constraints and Strategic Directions

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This report is one of a series of "Flagship Studies" intended to help clarify the opportunities, constraints, and strategic directions facing Africa and its partners as they attempt to accelerate economic growth to reduce poverty and put Africa on a path toward meeting the Millennium Development Goals (MDGs). It is part of the analytic work promised in a plan entitled "Meeting the Challenges of Africa's Development," also known as the African Action Plan (AAP), discussed at the World Bank Board in 2005. The AAP has a strong focus on "increasing shared growth," and recommends several actions by the World Bank that will support accelerating growth. Offering both a long-term approach and country-specific analysis, the report recommends learning from history and from diverse experiences to guide countries' growth diagnostic work and strategies for scaling up growth. The World Bank's Africa Region intends to provide further studies in this series that will examine several of the areas critical to growth in much greater depth. A study on financial markets is nearing completion. Another on infrastructure is being drafted.

Substantively, this report draws lessons from 45 years of growth experience in Africa and around the world, providing an important repository of lessons learned to shape growth strategies in Africa. It is influenced by, and builds upon, three major studies—The Political Economy of Economic Growth in Africa, 1960–2000, conducted under the African Economic Research Consortium (AERC); Can Africa Claim the 21st Century? produced collaboratively between the World Bank and African partner institutions; and the World Bank's study, Economic Growth in the 1990s: Learning from a Decade of Reform, which draws from in-depth reflection on growth experiences by respected practitioners.

The current report will seek to answer three key issues:

1. The opportunities and hence, options for growth available to the diverse range of African countries;

2. The major constraints to exploiting these opportunities; and
3. The strategic choices to be made by African governments as well as by development partners, including the World Bank, in supporting actions taken by African countries.

The distinguishing characteristic of this study is its long-term perspective, together with its analysis and description of the African growth experience from 1960 (the time when most African countries became independent) to the present. Although there are some commonalities among countries, the growth experiences are also quite diverse, with a few countries experiencing consistent long-term growth, a few experiencing long-term stagnation and decline, and the majority experiencing growth between 1960 and 1973, the decline between 1974 and 1994, and renewed growth since 1995. This long-term perspective explains the current situation in which African countries, for the most part, find themselves—low levels of per capita income and high levels of poverty.

Six countries have more than tripled their per capita incomes between 1960 and 2005, nine countries have per capita incomes equal to or less than where they started in 1960 and the rest have seen some net improvement, but not enough to make a real dent in poverty levels. Many countries seen as fast growers in 1970, such as Côte d'Ivoire, flamed out and have found themselves stagnating or declining during the past 30 years. The critical point is that frequently, over the long term, the tortoise beats the hare. Steady progress and consistent performance, in good times as in bad, are the watchwords. Many African countries made policy choices in 1974 that continue to haunt them today, whereas a few are experiencing the blessings of different choices made at the same time.

The report draws six key lessons to inform the growth strategies in Sub-Saharan Africa.

1. African countries' growth experience is extremely varied and episodic. From a regional strategic perspective, addressing two challenges peculiar to the region is the key to success—the slow growth of large countries and the extreme instability of growth across a large number of African countries. Countries with large populations, such as the Sudan, the Democratic Republic of Congo, Nigeria, and Ethiopia, will have to grow more rapidly and on a more sustained basis to improve the livelihood of a "typical" African and to generate regional traction though positive spillover effects, similar to the experiences in Southern Africa and East Asia. Another crosscutting challenge for the region is how to best manage responses to shocks, particularly in the resource-rich countries, in which their fortunes are currently closely tied to the fortunes of key minerals in the world market.

2. Although lower levels of investment are important for explaining Africa's slower growth, it is the slower productivity growth that more sharply distinguishes African growth performance from that of the rest of the world. Investment in Africa yields less than half the return measured in growth terms than in other developing regions. This situation clearly calls for looking beyond creating conditions for attracting new investors to more explicitly pursuing measures that help to raise productivity of existing and new investment. These include reducing transactions costs for private enterprise, particularly indirect costs; supporting innovation to take advantage of new technological opportunities; and improving skills and institutional capacity to support productivity growth and competitiveness. African countries and populations are still highly dependent on agriculture for food, exports, and income earning more broadly. Productivity in this sector lags far behind the phenomenal progress made in Asia and Latin America, and should be a key target for raising overall productivity of African economies.
3. Consistent with much of the cross-country growth analysis, evidence from the research reviewed earlier suggests that policy and governance matter a great deal for growth. Taking 45 years of African growth experience as a whole and controlling for differences in the composition of opportunities, the impacts of poor policy have been shown to typically account for between one-quarter and one-half of the difference in predicted growth between African and non-African developing countries. However, the evidence also suggests that the importance of policy in explaining the growth differential between African countries and others may have waned since the 1990s as a result of major reforms implemented in the region, which have moved policy performance in African countries much closer to the global average. Thus, whereas it is imperative for countries to identify and address other binding constraints, sustaining these gains in the improvement of the policy environment will have to be a permanent feature of any growth strategy adopted by a country. In particular, it means maintaining durable macroeconomic stability and continued propping up of efficient market functioning. Overcoming disadvantages arising from geographic isolation and fragmentation, as well as natural resource dependence, will be necessary if Africa is to close the growth gap with other regions. Estimates show that taking actions to compensate for these disadvantages may facilitate closing up to one-third of the growth gap with other developing countries. With much higher proportions of countries and populations in Africa being landlocked and resource-rich, it is necessary to compensate for these disadvantages, primarily by closing the infrastructure gap and better managing and using resource rents.

4. Growth of trading partners' economies has a very powerful influence. The key transmission mechanisms are trade and capital flows, requiring greater openness, strengthening capabilities for taking advantage of the rapid growth in the global markets, and improving the investment climate to make African countries better destinations for global capital than in the past. On the side of trade, evidence shows that integration with global markets is associated with higher growth, underpinning the need for growth strategies to emphasize scaling up and diversifying exports. Enhanced competitiveness and reduced barriers to trade are the two critical areas of action. It is important to note that although concerns with border trade policies and facilities (for example, port capacity and efficiency) are still crucial, increasingly, constraints such as infrastructure, standards, and access to information have become much more binding. A core part of any growth strategy, therefore, will need to target reducing the costs of transacting trade, particularly reducing supply chain costs, as well as the cost of trade processes.
5. The analysis points to a very large role played by the delayed demographic transition in Africa in explaining its relatively slower growth performance. In all the empirical studies of the sources of growth differences, the demographic variables consistently predict two-thirds of the observed difference between average growth in Sub-Saharan Africa and other developing regions. Two types of consequences from this delayed transition are particularly important. The first, and probably the biggest challenge is the uncharacteristically high level of age dependency, with its implications on fiscal and household/parental pressure for taking care of the overwhelming number of the young. The second relates to the rapid growth of the labor force, potentially a positive driver of growth but also possibly a negative force if employment opportunities do not keep pace. The latter concern relates to the growing potential instability from rapidly rising youth unemployment. Whereas the strategy needs to address the fundamentals of the slow demographic transition such as how to speed up a reduction in fertility, appropriate actions are also needed to increase the employability of youth and expand opportunities to engage in a growing private sector at home.

This analysis then leads to a set of four specific pillar areas where investment is needed to accelerate growth. These four pillars are critical but not comprehensive. They are as follows:

Improving the investment climate, mainly focused on reducing indirect costs to firms (which are generally infrastructure-related), with energy and transportation topping the list of major impediments; and reducing and mitigating risk, particularly those

relating to the security of property, such as poor adjudication of disputes, crime, political instability, and macroeconomic instability. Although effort in individual countries is the focal point of action, we also suggest pooling efforts to develop cohesive investment areas by coordinating investment promotion, coordinating policy, improving security, and increasing connectivity.

The second pillar is infrastructure, mainly targeting transaction costs in the production of goods and services. Transportation and energy make up the largest proportion of indirect costs for businesses, weighing heavily on the competitiveness of firms in most African countries in which investment climate surveys were conducted. Particular focus would be on how to reduce the high costs associated with the remoteness of landlocked countries to facilitate trade with neighbors, as well as with the rest of the world. It is clear that there will be a need to look beyond individual country borders and adopt a regional approach to coordinate cross-border infrastructure investment, maintenance, operational management, and use (for example, power pooling) to lower costs.

The third pillar is innovation, primarily emphasizing investment in information technology and skill formation (higher education) for enhanced productivity and competitiveness. The potential comparative advantage of low wages in Africa can be nullified by low productivity. Surveys of investors show that labor is not cheap where productivity is low. Information and communication technology (ICT) is now the main driver for productivity growth. There is strong empirical evidence that shows that investment in ICT and in higher education boosts competitiveness, making both key parts of the growth agenda. African countries can make a huge leap forward and over antiquated technology by exploiting the ICT technological advantages as late starters.

The fourth pillar is institutional capacity. The results from the investment climate assessment surveys and analysis for the World Development Report (2005) identify costs associated with contract enforcement difficulties, crime, corruption, and regulation as being among those weighing most heavily on the profitability of enterprises. The main focus of action here would be partly to strengthen the capacity of relevant public institutions for protecting property rights, and partly to strengthen scrutiny of, and accountability for, public actions.

Building institutional capacity entails strengthening individual competencies, organizational effectiveness, and rules of the game. Under this pillar, particular attention should be paid to capacity and space for scrutiny of public action mainly within a framework of a strong domestic accountability system and capacity to clarify and protect property rights to spur private enterprise. The key strategic areas of

action, therefore, include enforcement of contracts (for example, commercial courts); exercise of voice as an agency of restraint with enhanced involvement of civil society, media, and parliament; enhanced revenue transparency in resource-rich countries; and prevention of corruption as a country-driven agenda—including checks and balances.

Applying these strategies in a specific country context is beyond the scope of this study. Each country faces its own challenges and opportunities. Each country has to work within its own historical and geographical resources and constraints. Dealing with these specific situations is a subject of specific analysis and beyond the scope of a generalized study such as this one. Nevertheless, we hope that the ideas and approaches raised here will enable analysts and policy-makers at the country level to approach their particular challenges with a more informed sense of what may be important, and of what has worked in the past in other situations.

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Chapter 1

ICT a Digital Marketplace and Tool for Job Creation in Nigeria

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Abstract:
Staying unemployed forces people who can earn a living and are willing and able to work for others to remain idle, not able to get a job is a serious problem. The objective of this study is to explore various ways ICT can be used to tackle the increasing joblessness trend in Nigeria. The study employs a desk research methodology, where pertinent documents from textbooks, journals, magazines and other source where reviewed. The findings revealed that ICT sector has e-commerce, e-communication, e-education, e-entertainment which is presently enhancing the federation efforts employment generation. The development of online creation of jobs depends on ICT infrastructure and government support for broadband incentives to bring the internet to Nigeria's remote areas. The study came to a conclusion and made the following recommendation: the government, organizations, and business owners should seize this excellent opportunity to produce employments for the young ones while expanding the economy from one based on natural resources to one grounded on knowledge and powered by IT.

Keywords: *Digital, Communication, Technology, Information, Market place, Unemployment.*

Introduction

The majority of developing countries have started a number of reforms that promote ICT usage in their economies. When compared to the wealthy nations of the world, these reforms typically have little to no positive effects on economic growth and development. It is well known that rapid economic growth is impacted by technological improvement. In 1999, when a civilian rule assumed control, a policy for the adoption of ICT was established in Nigeria. In terms of the generation of jobs,

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quicker service delivery, lower transportation costs, more security, and higher national output, the actions of the licensed communications service providers in the nation have had some well-noticed macroeconomic benefits. ICT is now a key instrument for achieving a competitive edge in business, and as a result, it has been incorporated into the actions of the majority of excellent performing firms across all economies. According to a recent policy paper from the World Bank, ICTs are changing the nature of work, opening up fresh work prospects, and enhancing the innovation, inclusivity, and globalization of labor markets. ICTs are having an impact on employment in two ways: as a sector that generates works and as an instrument that allows employees to contact fresh types of work in novel and elastic ways (Samuelson, 2008). Because nations all over the world are trying to increase the number of decent jobs, which have favorable economic and social repercussions for both employees and society, the rising ICT-enabled employment opportunities are important. ICT is essential to Nigeria's effort to rank among the world's top economies in the following five years. The world is getting more and more technologically based, and ICTs continue to be an important economic driver since they have the capacity to address the nation's rising unemployment rate.

Statement of Problem

Being unemployed is in fact a forced inactivity for salary recipients who are willing and able to work but are unable to do so. Being jobless is a big issue in civilizations where the majority of people can only make a living by working for others. The level of unemployment is frequently employed as a gauge of employees' welfare due to the human costs of hardship, a sense of rejection, and personal failure. The percentage of unemployed workers also demonstrates how sound a nation's human resources are exploited and acts as a gauge of economic mobility (Ramey, 2008). The Nigerian economy needs to be more concerned than before with jobless. It still remains one of the government's primary macroeconomic goals. A number of major developmental issues, including jobless, are becoming more widespread in Nigeria. The main objective of the government's and international organizations' policies is to lower the jobless rate.

Objective of the Study

To explain various ways ICT can be used to tackle the increasing joblessness rate in the country.

Research Methodology

The study employs a desk research methodology where pertinent documents from textbooks, journals, magazines and relevant sources to the topic were reviewed.

Literature Review

An Overview of Information and Communication Applications (ICA)

According to Wirtz (2019), ICA development has a lengthy history. The fundamental building blocks for modern information and communication applications were developed in ancient times and the Mid Ages. The "Sieve of Eratosthenes," the first algorithm to identify prime numbers, was developed in 250 B.C. This algorithm describes a regulation that uses a limited number of steps to address issues. The theoretical underpinning of computer-aided calculation is represented by algorithms. Wilhelm Schickard, an astronomer and mathematician, creates the first four-function calculator in 1623 that can add and subtract numbers. Gottfried Leibnitz develops the first mechanical calculator with the four conventional calculations about 50 years later, in the year 1672. The "Boolean algebra," which George Boole published in 1854, depicts logical operators and set theory, the theoretical underpinnings of electronic technology. Based on Philipp Reis' foundational study, Alexander Graham Bell invented the telephone in 1854 as part of the development of modern communication infrastructures. In 1903, Nikola Tesla receives a patent for electrical circuits after the grant of a patent for wireless energy transfer. These accomplishments created the foundation for radio technology, which enabled wireless signal transmission via electromagnetic waves. 33 years after, a clear foundation for theoretical informatics has been established. Alan M. Turing creates a model for computing functions for the resolution of various decision problems with the Turing machine. Konrad Ernst Otto Zuse, a construction engineer, in 1941, a computer was built that was fully automated, program-controlled, and freely programmable. Number processing was the main function of this machine. A few years later, in 1946, the US introduces the world's first mobile network as a development in radio technology. The continued promotion of new communication tools and enhanced information transmission are characteristics of the growing digitalization of ICT. William Bradford Shockley receives a patent for the transistor in 1948, which is used for electrical signal switching and amplification. Both color television and the IBM 350 magnetic hard disk for data storage are first introduced in the United States in 1953 and 1956, respectively. This technical advancement paved the way for safe data storage in addition to enabling faster access times and more storage space.

The operating system for IBM mainframes is the Disk Operating System/360 (DOS), which was first released in 1966. As a result, the IBM 350 magnetic hard drive's potential could now be completely realized. Computer activities founded on directly addressable magnetic disc storage medium were distributed in a quasi-parallel fashion thanks to DOS. The cross-linked decentralized network ARPANET, developed in 1969 by Paul Baran and Donald Watts Davies, served as the forerunner of the modern Internet. The first series-produced microprocessor, the 4004, is introduced by Intel in the year 1971.IBM releases the first personal computer ten years

later, in 1981, creating new opportunities for the creation of ICAs. The Dynatac 8000x was the first commercial mobile phone released by Motorola in 1983. Microsoft soon after launches Windows 1.0 to facilitate the use of many devices. Steve Case founded the online business Quantum Computer Services in the year 1985. Three years later, it changes its name to AOL. With the launch of the World Wide Web in 1989, the Internet started to have a bigger impact on media and started a movement toward digital technology that is still going strong today. SAP released its ERP software SAP R/3 as a result of the need for business software improvement. Since then, businesses have been able to connect many business sectors thanks to this software. Toshiba releases the DynaPad T100X, the first tablet PC, in the same year. Jeff Bezos founded the online retail giant Amazon in 1994, transforming the world's online trading in goods. A year after Amazon's launch, Pierre Omidyar founds eBay Inc., an online auction house that swiftly overtakes Amazon to become the biggest marketplace for both individual and commercial distributors. At this time, a general word for a range of services in the domains of electronics, electrical engineering, IT, and informatics may be used to describe ICA. The components of these domains are usually digitalized, and interactive use is often possible.

The information society (IS) is in a phase of growth that is dynamic, placing significant demands on the functioning corporations in terms of their ability to innovate and adapt. With the release of the first smartphone, created and sold by Nokia in 1996, an important trend in the advancement of ICT began. Although smartphones were not widely used at first during the smartphone age, they are now an indispensable part of everyday life and a mobile companionship. Google Inc., an Internet service provider and its widely used search engine were founded in 1998 by Lawrence Edward Page and Sergei Brin. High data transfer speeds are made possible by AT&T's launch of the broadband market in the USA in 1999.For corporate customers, the company introduces its service, which includes digital subscriber line (DSL), cable modem, and wireless Internet access. The relevance of the information society has increased dramatically since the 1990s, in large part because of the growth of the Internet economy. Since 1998, a number of dotcom enterprises have been founded as a result of changes in the market's intense competition and the overall economy. The continued advancement of mobile networks and the widespread adoption of the Internet have aided this trend. For instance, a key turning point for mobile ICT was the installation of the first UMTS network on the Isle of Man by the local business Manx Telecom in 2001.This change is making it easier to offer new Internet services. For the music industry, the Internet has become a new medium for distribution. An essential cornerstone in this sense is the 2001 release of iTunes by Apple. Facebook was founded by Marc Zuckerberg in the year 2004. 2005 sees a continuation of the Web 2.0 and social media application explosion. Internet platforms like Facebook and Twitter are a reflection of the Internet's developing networked growth. Social media is now a

crucial component of the information society. Using the FTTP, VDSL, and ADSL communication protocols, AT&T launched its brand U-verse in 2006, providing triple-play telecommunications services in 21 states across the country. The first commercial LTE network is launched by the Swedish business Telia Sonera in Oslo and Stockholm as early as 2009. The most recent iteration of Samsung's popular smartphone, the Samsung S7, is finally released in 2016 along with the company's virtual reality gear, the Samsung Gear VR.

Internet Usage

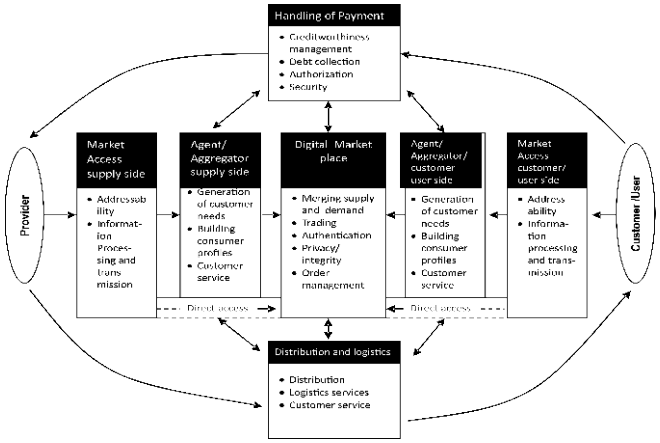
Internet usage among people all around the world is rapidly expanding along with the number of Internet hosts. More than 3.7 billion people were already use the Internet in 2017. This indicates that four out of ten individuals utilize the Internet currently, an increase of 933.8% since the year 2000. (Internet World Stats 2017). Modern ICTs' development, dissemination, appropriate repositioning, and appropriate use all contributed significantly to the shift from an industrial to an information society. The population and recent Internet usage statistics for the world are displayed in the table below as a reflection of this progress.

Regions	**Population-2017 Est**	**www Users -31 Dec, 2000**	**www Users -31 Mar, 2017**	**Pop. in %**	**Growth-2000-2007 in %**	**Users in %**
Africa	1,246,504,866	4,514,400,	345,676,502	27.8	7557.10	9.30
Asia	4,148,177,673	114,304,000	1,873,856,653	45.1	1539.30	50.20
Europe	822,710,363	105,096,092	636,971,823	77.3	506.20	17.10
Latin America/ Caribbean	647,604,646	3,284,800	385,919,381	59.5	2035.80	10.30
Middle East	250,327,574	108,096,800	141,931,764	56.50	4220.90	3.80
North America	363,224,005	18,068,918	320,068,242	88.10	196.10	8.60
Oceania/ Australia	40,479,845	7,620,480	27,549,053	68.10	261.50	0.70
World total	**7,519,028,970**	**360,985,493**	**3,731,973,422**	**49.60**	**933.80**	**100.00**

The information society and digital business have considerably increased in prominence as a outcome of the above-mentioned changes.

Digital Market Place

Similar to the traditional economy, the digital marketplace serves as the focal point of e-business transactions and the point at where supply and demand converge. In contrast, the market access for digital businesses is rather different from that for traditional businesses.



On the one hand, market access is necessary for vendors of goods and services to engage in commerce online. Here, technical considerations are especially crucial. It is necessary to handle product-specific data in a way that makes it transferrable to the market. Special gear and software are needed for this. If these requirements are satisfied, the provider has the option to enter the digital market directly, through an intermediary agent, or through an aggregator. In the first scenario, the supplier is required to develop client requirements, compile client profiles, or provide client services. These duties fall under the purview of the agent or aggregator. On the other side, clients also need access to the market. There are numerous service providers that provide Internet connection in this setting. It is crucial to communicate details about client wants for products to the market. They can choose from a variety of alternatives for market entry, just like on the supply side (Papazoglou and Ribbers 2011). In addition to gathering and organizing offers, the intermediate agent or aggregator assists customers in their search for goods and services. In some cases, other parties are involved in the distribution and processing of payments. Customers receive the things they have requested from distributors like FedEx. Creditworthiness monitoring, debt collection authorisation, and security are all included in payment processing. These operations are carried out by credit card providers and online payment platforms like PayPal or Amazon Payments. The subsequent segment describes the actions of the players engaged and specific success elements for digital business after describing the evolution of ICAs and methodically arriving at an e-business definition.

Digital Business Operation

The concept is functionally systematized through the activities of digital business. According to this, e-commerce, e-collaboration, e-communication, e-education, and e-

information/entertainment are all part of digital business. The distinct traits and intents of the corresponding activities lead to this functional classification. The initiating, negotiating, and concluding of transaction among economic agents via electronic networks are all included in the process of e-commerce. The actors sell goods and services using the opportunities provided by information and communication technologies while avoiding the expenses associated with maintaining a physical presence (Turban, 2015). E-commerce aims to increase efficiency, reduce costs, and provide rewards for convenience throughout a (trade) transaction (Hsu, Kraimer and dunkle,2006). This applies to the effective structuring of company-to-end customer relationships as well as the intra- and inter-organizational field. E-commerce operations, for instance, include signing supplier bills using a digital signature or conducting pricing negotiations online. E-commerce refers to the use of electronic networks to support actions that are openly related to the buying and selling of products. Electronic, network-based, interactive, and intra- or inter-organizational interaction is referred to as e-collaboration. Through the support of collaborative processes and their adaptation to business operations, e-collaboration makes it possible for collaboration to be time and location independent (Wirtz and Vogt 2003). Additionally, the potential for intermediate storage enables the coordination of collaborative outcomes and the transmission of information-based components. The delivery and usage of network-based and electronic communication podia for both paid and unpaid purposes is referred to as e-communication. E-communication attempts to offer communication opportunities for understanding on the basis of tasks or interests. The potential for intermediate storage makes communication more flexible and able to be coordinated. In addition to intra- and inter-organizational levels, communication can also take place at the retail level. ICT, such as email, video conferencing, and the newest social media options, are used for one-way or two-way communication. E-education is the practice of providing education and training services across electronic networks to outside parties. The goal of e-education is the efficient use of resources to supply educational services through the application of electronic networks across all space and time. In this case, network-based education may be provided by the company itself or by outside organizations. One can distinguish between individualized conceptions of education and training as well as concepts created for a broad audience with relation to the recipients of education and training services. The delivery of educational and/or entertaining ideas and content to third parties via electronic networks is referred to as e-information/entertainment. Access to decision-relevant, time-sensitive, or stimulating and enjoyable content is made easier for consumers of e-information and entertainment by means of ICAs. Due to its characteristics, this material is an intangible good that, while being utilized numerous times, is not consumed. Proficiency and cost benefits that emerge from the features of the online economy can be obtained while producing, reproducing, and disseminating content. The

aforementioned descriptions distinguish between the various digital business activities and identify their "pure forms." Therefore, from a theoretical and conceptual standpoint, the division of e-commerce, e-collaboration, e-communication, e-education, and e-information/entertainment illustrates the phenomena of digital business. However, businesses typically combine these functions in their daily operations. Moreover, it is rarely possible to make a definite demarcation, which leaves room for overlaps.

Discussion of Findings

According to a fresh information from the National Information Technology Development Agency (NITDA), the development of over 12 million new jobs by the ICT sector has aided the Federal Government's attempts to increase employment. It stated that the employment prospects produced by the industry have improved as a result of this current contribution. The federal government's efforts to create jobs are currently being aided by the Nigerian ICT sector, which annually adds over 12 million new jobs. That represents a huge increase above the 2.5 million employment the sector generated previously. The GDP growth of Nigeria is also boosted by this, to the tune of roughly 9%. According to the Nigerian Ministry of Labour and Productivity, using ICT systems and activities geared at training unemployed Nigerians, the Federal Government is prepared to wage a total war on lack of jobs in the nation. According to Fakiyesi (2010), ICT has improved the nation's economy, especially the GDP, which has increased to 1.62 percent despite some Nigerian youths taking advantage of its negative aspects (Oluleye, 2006). Although he regretted that, in addition to boosting the economy, ICT has also increased deception, the spread of bad information, and unscrupulous business practices. A Nigerian with solid ICT skills also has no business being unemployed because the Internet is a wealth producer, and the IT specialist is the engine that drives this process. The world's largest marketplace is the Internet. Online sales were over $180 billion in 2008, and it is predicted that they will reach $263 billion in 2012 (Credit Suisse). The development of the necessary ICT infrastructure and the advancement of broadband stimulus by the government for spreading internet access to the outlying villages of Nigeria are crucial for the actualization of employment creation via the internet. Therefore, unless efforts are made to promote self-employment, this could spark an unanticipated revolution with highly negative effects.

Conclusion and Recommendation

ICT is one of the eight crucial economic sectors in Nigeria with the ability to generate 460,000 new employments, and it has the highest potential for job growth. As part of a concerted effort to provide jobs for the teeming youth population of the nation, the government is anticipated to concentrate its efforts on supporting "technology start-ups and young innovators." The ICT industry is crucial because it can stimulate the

creation of jobs in other industries. Nigeria is eager to shift its economy from one that is dependent on natural resources to one that is knowledge-based and fueled by ICT. The IT Development Entrepreneurship Accelerator is a cutting-edge concept that will significantly increase the number of jobs in Africa. The Nigerian government should teach young people, especially those who are unemployed, how to take advantage of the development of information, communication, and technology (ICT) in order to establish their own businesses. In order to help persons with disabilities, the government, proficient personalities, and establishments should develop screen intensification or screen reading software that permits blind or partly sighted persons to operate with regular text rather than Braille. The Nigerian government, organizations, and entrepreneurs should use this excellent chance to give our thronging youths jobs while diversifying our economy from one based on natural resources to one based on knowledge and powered by IT.

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Chapter 2

Emerging Relationship Marketing and Marketing Performance of Microfinance Banks in Abia State

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Abstract
This study focused on relationship marketing and marketing performance. Relationship Marketing is the process that addresses all aspect of identifying customers, creating customer knowledge, building customer relationship and shaping their perception of the organization and its products. The problem and gap that aroused the interest in this study stem from the paucity of literature which exists on the relationship marketing and marketing performance of microfinance banks (MFBs) in Abia state. The main objective of this study is to examine the effect of relationship marketing on the non-financial marketing performance metrics. Correlation analysis, means, standard deviations and descriptive statistics were used to analyze the generated data. Purposive sampling design and random sampling techniques were used adopted for the study and 150 micro finance bank staff was randomly selected for the study using purposive sampling design and 94 copies of valid questionnaire were used. The reliability analysis, reflected coefficient values which indicates satisfactory internal consistency amongst variables within each dimension. Study result indicate that there is a weak relationship exist between communication of values by the MFBs and customer satisfaction; there is a significant relationship between commitment to service and customer satisfaction and that there is a significant relationship between trust and customer retention in the MFBs under study. The study concludes that strong and effective relationship marketing influences marketing performance in the MFBs through positive relationship with customer satisfaction and customer retention which in turn impact positively to customer retention, customer satisfaction and customer patronage in a long run. It is recommended that financial service firms should adopt integrated marketing communication strategy in reaching out to their customers about benefits and values

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attached to their different services, that financial service firms should devote effort to build up the level of commitment to service and so on. The major limitation of the study hinges on the limited sample size of 150 respondents used in this study which indicates that caution is needed in the interpretation of these findings as these results cannot be generalized as completely true of other states in Nigeria. Hence, greater sample size than the one used in the study is suggested for further studies.

Keywords: *Relationship Marketing; Communication; Commitment and Customer Satisfaction*

Introduction

Relationship marketing is a facet of customer relationship management (CRM) that focuses on customer loyalty and long-term customer engagement rather than shorter-term goals like customer acquisition and individual sales. The goal of relationship marketing (or customer relationship marketing) is to create strong, even emotional, customer connections to a brand that can lead to ongoing business, free word-of-mouth promotion and information from customers that can generate leads (Rouse, 2016). Relationship marketing (RM) has over the years proven to be a sustainable avenue for competitive business growth and development. Historically, marketing has been about goods and, more recently, about services and brands (Balmer, 2001, 2006, 2008). Marketing is going through another paradigm shift by focusing on factors and interactions at the corporate level. Balmer (2006) has labeled this perspective of marketing as "corporate marketing". This is also in agreement with the American Marketing Association's 2007 definition of marketing: "marketing is the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large". This new definition of marketing refers to marketing as "the activity" rather than an organizational function. The activity definition of marketing reflects that marketing is "an action word" (Hunt, 2010). Additionally, it points out that marketing is no longer solely the role of a marketing department, but rather an organization-wide responsibility (Hunt, 2010).

Relationship marketing (RM) is frequently employed by firms to improve their dealings with customers. Despite the absence of a universally acceptable definition of RM, it has gained considerable interest and application in business-to-business (B2B) industries since the 1990s. RM is the process that addresses all aspects of identifying customers, creating customer knowledge, building customer relationship and shaping their perception of the organization and its products (Ngambi and Ndifor, 2015). In order to have a more efficiently-managed customer relationship, CRM focuses on effectively turning information into intelligent business knowledge. That information can come from anywhere inside or outside the firm. This requires

successful integration of multiple databased and technologies such as the internet, call centers, sales force automation and data warehousing (John and Fredrick, 2002). RM integrates sales, marketing services, resources planning and supply chain management through business process automation, technology solutions, and information resources to maximize each customer's contact. But all these activities need to be used in combination. It is an enterprise approach to understanding and influencing customer behavior through meaningful communications in order to improve customer acquisition, customer retention, customer loyalty and customer profitability. Firms are spending a tremendous amount of time and money to attract new customers as well as retaining old ones through promotional activities (Razzaque and Boon, 2013). Financial institutions for example are employing researchers to study and discover customer needs and wants. They recognize now that customer satisfaction is a critical success factor.

Statement of Problem

The creation of long-term relationships with customers requires knowledge of the dimensions contributing to the establishment and maintenance of such relationships. Although numerous empirical studies have been conducted, most focused on specific sections of the marketing relationship, such as the influence of satisfaction on trust (Leisen and Hyman 2014; Liang and Wang 2006), trust on commitment (Razzaque and Boon 2013; Tellefsen and Thomas 2005) and commitment on an exchange partner's intention to stay in a relationship (Abdul-Muhmin 2015; Gounaris 2015), to name a few. As far as can be ascertained, no comprehensive study of the dimensions relevant for the establishment of long-term marketing relationships and enhanced marketing performance has been reported yet. Despite the literature on the importance of corporate behaviors and relationship building with stakeholders, veryminimal research was found studying relationship marketing in relation to non-financial marketing performance (Albassami, Alqahani and Saleh, 2015). In fact, when thequestion of how relationship marketing is related to marketing performance is posed on Google Scholar, not a single paper was found (Albassami, Alqahani and Saleh, 2015).

Hence, there is paucity of literature of the effect of relationship marketing and marketing performance of microfinance banks in Abia state. This gap has constituted a pressing issue in the Nigeria financial sector (Ngambi and Ndifor, 2015) and that also aroused the interest for the study.

Objective of the Study

The main objective of this study is to examine the effect of relationship marketing on the non-financial but marketing performance metrics. Specifically, the study set out to achieve the following sub-objectives;

I. To examine the effect of customers trust on customer retention in the microfinance bank subsector in Abia State.
II. To ascertain the effect of commitment to service on customer satisfaction in the microfinance bank subsector in Abia State.
III. To determine the effect of effective communication on customer satisfaction in the microfinance bank subsector in Abia State.

Research Questions

The following research questions were raised to gain in-depth knowledge on the subject matter and they are as follows;

I. To what extent does customers trust influence customer retention in the microfinance bank subsector in Abia State?
II. How does commitment to service affect customer satisfaction in the microfinance bank subsector in Abia State?
III. To what extent does effective communication influence customer satisfaction in the microfinance bank subsector in Abia State?

Research Hypothesis

Ho_1: There is no significant relationship between customers trust and customer retention in the microfinance bank subsector in Abia State.
Ho_2: There is no significant relationship between commitment to service and customer satisfaction in the microfinance bank subsector in Abia State.
Ho_3: There is no significant relationship between effective communication to service and customer satisfaction in the microfinance bank subsector in Abia State.

Review of Related Literature

Conceptual Framework

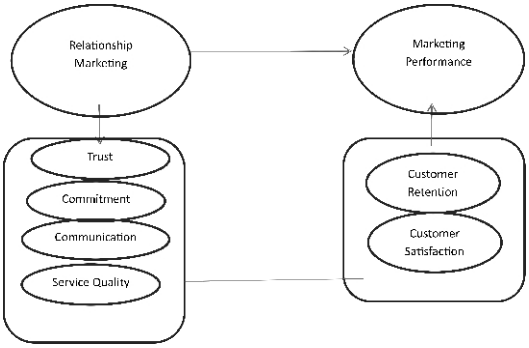

Fig. 1: Conceptual Framework for Relationship Marketing and Marketing Performance.
Source: Researcher's Concept, 2021

Overview of Relationship Marketing

The marketing environment has changed considerably over the past few decades (1990) and firms are increasingly attempting to build relationships with their customers to shield off competitors' offerings. Although relationship marketing (RM) had been in practice since the 1800s, it was the re-emergence of RM at the beginning of the 1990s that triggered off a renewed focus on the part of both marketing practitioners and marketing academics on the potential value of relationships with customers (Sheth and Parvatiyar, 1995). Modern-day firms realize the value of long-term relationships with customers, and considerable evidence exists that validate the profit impact emanating from strong relationships (Barry et al. 2008). RM is essentially about building relationships at every point of interaction with the customer, with the intention to create various benefits for both the firm and the customer. The re-emergence of RM as an academic field has resulted in extensive research, with the concept being studied under a variety of constructs, such as networks and interaction, long-term interactive relationships and interactive marketing (Gummesson 1997; Möller and Halinen 2000). As the popularity of the RM concept increases, service marketers have started to recognize the importance of building more sustainable and long-lasting relationships with their customers (Eisingerich and Bell 2007). Furthermore, Liang et al. (2009) found that an investment in customer relationships provides the basis for developing strategies for creating customer value, and that such strategies provide the foundation for sustainable competitive advantage, which in turn leads to solid financial performance.

Relationship Management and the Financial Services Industry

The financial services industry has undergone significant changes since the 1980s, and the forces of dynamic change are aggressively challenging today's financial institutions (Lee 2002). Increased competition in the financial services industry has forced role players within this industry to differentiate themselves from competitors (Farquhar 2004; Heffernan et al. 2008; Rajaobelina and Bergeron 2009). The relevance of RM for financial services can be traced back to the early 1980s, when financial institutions realized that they could increase their earnings through maximizing the profitability of the total customer relationship over time (Gilbert and Choi, 2003). Due to the nature of service delivery (in terms of intangibility and complexity) it is important for financial services providers to adequately manage relationships with customers (O'Loughlin et al. 2004; Eisingerich and Bell 2007; Shekhar and Gupta 2008; Rajaobelina and Bergeron 2009). From a financial services perspective many customers have explicit desire for an effective relationship with the service provider (Xu, *et al*. 2006), which has resulted in a need among financial services providers to manage customer relationships (Chiu,*et al*. 2005). Soureli *et al*. (2008) mention that relationship banking is fast becoming the fundamental success factor in the financial services market.

The Dimensions of Relationship Marketing

Soon after the re-emergence of Relationship Marketing, the antecedents driving it received prominence in academic and trade journals. Despite empirical support for many of the dimensions of RM, Liang *et al.* (2009) refer to the 'ongoing debate regarding the specific dimensions of the customer relationship construct'. Furthermore, uncertainty still appears to exist in respect of a generic set of dimensions to be used to represent RM in a variety of industries. Despite the uncertainty in respect of a complete set of dimensions to represent RM, overwhelming support of the importance of four dimensions in particular – trust, commitment, satisfaction and communication – are evident in the literature. Overwhelming support was found in the marketing literature for the inclusion of trust as an important dimension of a marketing relationship, with several authors regarding it as a central construct to the development of successful service relationships (Eisingerich and Bell 2007; Soureli *et al*. 2008; Liang *et al*. 2009). Cyr,*et al.* (2007) view trust as essential in a marketing relationship, while Bauer *et al*. (2002) view it as a prerequisite for the success of RM. Although the marketing literature appears to offer a number of definitions of trust, common to most is a confidence between exchange partners that the other party is reliable and that they will act with integrity (Heffernan *et al*. 2008; Macintosh 2009).

The marketing literature furthermore appears to concur on the role of commitment when a long-term marketing relationship is established (Ndubisi 2006; N'Goala, 2007; Dabholkar *et al*. 2009). According to Ndubisi (2006), commitment is a central expectation or norm within business relationships, while Lacey and Morgan (2007) found that commitment is well entrenched in the relationship literature and essential to the creation and preservation of marketing relationships. Liang and Wang (2006) confirmed the important role of commitment in a relationship, and found that, as commitment becomes more remarkable, the relationships on both sides become more stable. Satisfaction appears to be a further important dimension of marketing relationships, with several studies indicating the concept's critical role (Lee and Jun 2007; Massey and Dawes 2007; Chen et al. 2008). Although alternative definitions for the concept of satisfaction were found, this study utilises the definition by Garbarino and Johnson (1999) that satisfaction is 'an overall evaluation based on the total purchase and consumption experience with a good or service over time'. The perpetual importance of satisfaction as an important variable in business relationships is highlighted by Sheth and Parvatiyar (1995), who state that partners should deliver high-level satisfaction during each business transaction.

The influence of communication on the management of long-term marketing relationships appears to be equally well documented (Doney *et al.,* 2007; Fam and Waller 2008; Palvia 2009). The widely accepted definition of communication was coined by Anderson and Narus (1990) as 'the formal as well as informal sharing of

meaningful and timely information between firms'. Customer's satisfaction and retention to a considerable extent is dependent on how effective that the sender communication channel and message is. Goodman and Dion (2001) argue that the significance of effective communication for social and business relationships has universal acceptance, while Coote, *et al*. (2003) described communication as 'the glue that holds industrial marketing relationships together'. Although there appears to be agreement on the importance of trust, commitment, satisfaction and communication when a marketing relationship is managed, researchers appear to differ on the specific position of each of these variables in a marketing relationship. Commitment, for example, may well be both an antecedent (Medlin *et al.* 2005) and a consequence (Moorman *et al,*. 1992) of trust.

A comprehensive review of the marketing literature produced a list of 22 dimensions that can impact on marketing relationships between a firm and its customers. These 22 dimensions, together with each dimension's definition (and reference) appear in Table 1.

For the purpose of this study it was necessary to identify those dimensions in Table 1 that are perceived as important by RM managers and that they are able to manage. The rationale for this approach is threefold. First, some of the dimensions identified in the literature review are industry specific and not relevant to the financial services industry. Second, not all dimensions are equally important when establishing and managing marketing relationships in the financial services industry. Third, it is deemed desirable from a practical point of view that the number of dimensions that can be managed and measured efficiently for performance on a regular basis should be limited to those that are critical to ensure reliable performance measurement.

Table 1 Dimensions of RM identified in the marketing literature

Dimension	Definition	Reference
Attractiveness of alternatives	The client's estimate of the likely satisfaction available in an alternative relationship	Sharma and Patterson (2000)
Power	The ability of one individual or group to control or influence the behaviour of another	Hunt and Nevin (1974) Ashnai *et al.* (2009)
Bonding	The (psychological) process through which the buyer and the provider build a relationship to the benefit of both parties	Gounaris (2015)
Commitment	The desire for continuity manifested by the willingness to invest resources into a relationship	Gounaris (2015)
Communication	The formal as well as informal sharing of meaningful and timely information between firms	Anderson an d Narus (1990) Vatanasombut *et al.* (2008)

Competence	The buyer's perception of the supplier's technological and commercial competence	Selnes (1998) Sichtmann (2007)
Conflict	The overall level of disagreement in the working partnership	Anderson and Narus (1990)
Cooperation	Similar or complementary coordinated actions taken by firms in interdependent relationships to achieve mutual outcomes or singular outcomes with expected reciprocation over time	Anderson and Narus (1990) Lages *et al.* (2008)
Coordination	The extent to which different parties in a relationship work well together to accomplish a collective set of tasks	Mohr *et al.* (1996) Payan (2007)
Customization	The extent to which a seller uses knowledge about a buyer to tailor his offerings to the buyer	De Wulf and Odekerken Schröder (2000) Danaher *et al.* (2008)
Dependence	The extent to which there is no equivalent of better alternatives available in the market	Gao *et al.* (2005)
Empathy	Seeking to understand the desires and goals of somebody else	Sin *et al.* (2005)
Goal compatibility/ goal congruence	The degree to which partners share goals that could only be accomplished through joint action and the maintenance of the relationship	Wilson (1995) Coote *et al.* (2004)
Opportunistic behavior	The behaviour of a party that endangers a relationship for the purpose of taking advantage of a new opportunity	De Ruyter and Wetzels (1999) Delerue-Vidot (2006)
Reciprocity	The component of a business relationship that causes either party to provide favours or make allowances for the other in return for similar favours or allowances at a later stage	Sin *et al.* (2005)
Relationship benefits	Partners that deliver superior benefits will be highly valued and firms will commit themselves to establishing, developing and maintaining relationships with such partners	Noordewier *et al.* (1990)
Uncertainty	The unanticipated changes in the circumstances surrounding an exchange	Wilson (1995) Perry *et al.* (2002)
Satisfaction	An overall evaluation based on the total purchase and consumption experience with a good or service over time	Garbarino and Johnson (1999) Barry *et al.* (2008)
Service quality	A comparison between customer expectations and performance	De Ruyter and Wetzels (1999)
Shared values	The extent to which partners have beliefs in common about what behaviours, goals and policies are important, unimportant, appropriate or inappropriate, and right or wrong	Morgan and Hunt (1994) Vatanasombut *et al.* (2008)

Switching costs	The one-time costs that customers associate with the process of switching from one provider to another	Burnham *et al.* (2003) Barry et al. (2008)
Trust	A willingness t o rely on an exchange partner in whom one has confidence	Moorman *et al.* (1993) Orth and Green (2009)

Researcher's Concept, 2016

Concept of Marketing Performance

Marketing performance is a measure of contribution of an organization's marketing functions to its corporate goals and objectives (Kurtz, 2008). The emerging body of empirical evidence indicates that there is an increase in the performance of marketing activities among both domestic and foreign organizations. Contemporarily, marketing representatives are under increasing pressure to report on their activities. Improvement of marketing performance and specifically, the ability to highlight the drivers has been a major concern to marketing organizations. The pressure to improve performance has increased over the years, and organizations are now faced with finding new ways to make marketing activity more effective, efficient and yielding higher returns. This implies that performance has been a central issue in marketing and remains a vital concern for a large majority of organizations (Morgan, Clark and Grooner, 2002). However, the assessment of business performance remains an important but elusive concept (Point and Shaw, 2003). It is important because consensual measures of performance would promote scholarly investigations, and clarify managerial decisions. For the purpose of this study, Customer retention and Customer satisfaction were used as metrics for measuring marketing performance.

Customer Retention

Customer retention is the activity that a selling organization undertakes in order to reduce customer defections (Kotler and Armstrong, 2010). Successful customer retention starts with the first contact that an organization has with a customer and continues throughout the entire lifetime of a relationship. A customer retention strategy is a process through which a business ensures customer re-enter the sales funnel and become repeat customer. A retention strategy aims to maintain a customer base and prevent customers from looking elsewhere for the same products or service. Customer retention refers to the percentage of customer relationships that, once established, a business is able to maintain on a long-term basis (Kurtz, 2008). Customer retention is simple concept of happy customers who feel important and are regularly communicated within the right way which makes them to keep coming back.

Customer Satisfaction

Knowledge of what customers need, wants, and expect is a central concern of

companies focused on building sustainable brand equity. This information is also vital first set in setting up system to measure customer satisfaction (Kurtz, 2008). Marketers must carefully monitor the characteristics of their product that really matter to customers. They must remain constantly alert new elements that might affect satisfaction. Satisfaction can be measured in terms of the gaps between what customers expect and what they perceive they have received (Kotler and Kevin, 2012). Such gap can produce favorable or unfavorable impressions. Customer satisfaction is one of the most essential elements of customer retention, customer loyalty, and product repurchase. The art and science of customer satisfaction involves strategically focusing on creating and reinforcing pleasurable experiences so that they might retain existing customers and add new ones. As markets shrink, firms are scrambling to boost customer satisfaction and keep their current customers rather than devoting additional resources to chase potential new customers. Kotler and Armstrong, (2010) opine that it costs five to eight times as much to get new customers than to hold on to old ones and this is the key to understanding the drive towards benchmarking and tracking customer satisfaction.

Theoretical Review

The Commitment-Trust Theory of Relationship Marketing was adopted for this study because it best suitable for the research, the theory explains how relationships are maintained through trust and commitment so as to attain maximum satisfaction of consumers at a profit.

The Commitment-Trust Theory of Relationship Marketing

The theory was propounded by Robert M. Morgan and Shelby D. Hunt in the year 1994. The commitment-trust theory of relationship marketing says that two fundamental factors; trust and commitment, must exist for a relationship to be successful. Relationship marketing involves forming bonds with customers by meeting their needs and honoring commitments. Rather than chasing short-term profits, businesses following the principles of relationship marketing forge long-lasting bonds with their customers. As a result, customers trust these businesses, and the mutual loyalty helps both parties fulfill their needs. Morgan and Hunt (1994) propose that relationship commitment and trust are key variables for successful relationships because they promote cooperative behaviors between relationship partners and encourage them to maintain long-term relationships. They suggest that relationships characterized by trust and commitment allow partners to be more accepting of high-risk situations because each party believes that the other party will be inclined to engage in activities that are in the long-term best interests of both partners. Morgan and Hunt (1994) tested their theory on business relationships between automobile tire retailers and their suppliers and concluded that it was clearly supported by the data. This theory is relevance to this study in the sense that it tries to

guide the understanding of how relationships are maintained through trust and commitment so as to attain maximum satisfaction of consumers and enhanced marketing performance.

Empirical Review

The creation of long-term relationships with customers requires knowledge of the dimensions contributing to the establishment and maintenance of such relationships. Although numerous empirical studies have been conducted, most focused on specific sections of the marketing relationship, such as the influence of satisfaction on trust (Leisen and Hyman 2004; Liang and Wang 2006), trust on commitment (Razzaque and Boon 2003; Tellefsen and Thomas 2005) and commitment on an exchange partner's intention to stay in a relationship (Abdul-Muhmin 2005; Gounaris, 2005), to name a few. As far as can be ascertained, no comprehensive study of all the dimensions relevant for the establishment of long-term marketing relationships has been reported yet. Mahsa, Ali and Fariddeddin (2013), studied the effect of CRM on the marketing performance of Isfahan Saderat Bank and concluded that customers who trust a bank capability in delivering promises remain committed to the brand, and are willing to pay higher prices for that brand and promote it as well. Tim, Timothy and David (2009) studies CRM and firms performance and their result revealed a positive and significant path between a superior CRM capability and firm performance. It was shown that CRM initiatives that jointly emphasize customer intimacy, cost reduction and analytic intelligence outperform those that take a less balanced approach. The results helps to explain why CRM programs can be successful and what capabilities are required to support success. The context of this study is the Nigeria Micro finance services industry because RM is widely applied in the financial services industry. The Nigeria micro financial services industry was selected for this study because of the intense competition in the industry and the widespread application of Relationship Marketing in the industry.

Research Methods

To obtain an objective perspective, a literature study was conducted on relationship marketing and marketing performance as well as an empirical investigation. Primary data was collected using a quantitative research technique with the use of a structured questionnaire as the survey instrument.

Research Design

The researcher employed the use of cross-sectional survey design. This involves studies which are done at one point in time (Anyanwu, 2000). This survey method allows for generalization of findings and is also descriptive in nature which suits the purpose of this study. The researcher adopted the used of structured questionnaire designed on a 5-point Likert scale to measure the responses of the respondents on the

subject matter. Pearson's product moment model correlation was to test the hypothesis and descriptive statistics was used to analyze the generated data.

Population of the Study

The population of the study comprises 273 staff of the twenty-one (21) microfinance banks (MFB) in Abia state (NSB, 2014).

Sample Size Determination

The researcher adopted purposive sampling design to determine the sample size for the study, since it is difficult to study the entire population. Hence, ten (10) staff were selected from fifteen (15) MFB in the state, giving a sample size of 150 respondents. The MFB that was selected include as follows; Abia State University MFB limited, Bundi MFB limited, Chibueze MFB limited, Egosal MFB limited, Express MFB limited, Inri MFB limited, Investment MFB Limited, Merchant MFB limited,MOUAU MFB limited, MOUAU Vasmus MFB limited, Ohafia MFB limited, Swift MFB limited, Umuchukwu MFB limited, Uvuoma MFB limited and Uzuakoli MFB limited

Method of Data Collection

The researcher adopted the use of a well-structured multiple choice questionnaire instruments designed with twenty (20) question construct that covered the entire researcher's variable of interest. Two fieldworkers to conduct the interviews were selected by the researchers based on their ability to understand the concept of customer relationship management. These students were screened and selected from a marketing department of a University in the state. They were trained in various aspects of questionnaire fieldwork administration.

Psychometric Properties of the Research Instrument

(a) To ensure the validity of the research instrument, the researcher subjected the instrument to Pre-testing on 10staff of MOUAU MFB in order to ensure that the questionnaire met expectations in providing accurate information and to assess whether or not respondents understood the questions correctly. In addition, a pilot study was conducted with fifteen (15) MFB staff in Umuahia. This technique was used as an indispensable aid for developing the final questionnaire.

(b) To ensure reliability of the research instrument, the researcher subjected the research instrument to Cronbach's coefficient alpha to ensure that the instrument gives internal consistency and obtained .968, .942, .980, .955 and .974.

Method of Data Analysis

The study employed the use of percentages, frequency tables, descriptive statistics and factor extraction analysis to present the data that were generated and Karl Pearson's Correlation Coefficient was used in testing the hypotheses with the aid of Statistical Package for Social Sciences (SPSS).

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

r=Correlation Coefficient

Where Y = (Customer Retention and Customer Satisfaction)

X = (Trust, Commitment, Communication and Service quality)

Model Specification

The correlation coefficient model is given as: source (Osuala, 2009)

Where:

rxy	=	Correlation coefficient
x	=	deviation from the mean of x
y	=	deviation from the mean of y
x	=	variables represented by x
y	=	Variables represented by y
$\sum$	=	Sigma (Total)

Decision Rule

If the computed "P" value is greater than the tabulated value, at appropriated degree of freedom (DF) and significant level, the null hypothesis (H_0) was rejected and the alternative (H_1) accepted. (i.e. if the p- values are less than 0.05 – $p<0.05$).

Results and Discussions

The section presents the results of data analysis based on the studies theoretical framework.

Response Rate and Demographic Outcomes

Out of the 150 copies of questionnaire distributed, a total of 130 were returned. This produced a response rate of 86.87 per cent. Out of this, 31 copies of questionnaire were discounted based on serious omissions in some of the vital questions as well as scale items. Therefore, to avoid obtaining misleading information in this research, the researchers concluded that it would be appropriate to exclude such data in favour of more genuine and standard questionnaires. Consequently, the usable copies questionnaire extracted were 99 which produced a response output of 66 per cent.

However, it was clearly supported within literature that response rate above 30 per cent is good and acceptable level when the research uses survey questionnaire (Crimp and Wright, 2005). Female respondents had the highest frequency level at 81.4 per cent while the male respondents' frequency level was 18.6 per cent. This is culturally influenced because lesser percentage of women engages in small and medium scale enterprise. In terms of respondents' age, 10.7 and 40.0 per cent of the respondents were within the age brackets of 20-29 and 30-39, respectively, while 34.0 and 13.5 per cent were within the age bracket of 40-49 and 50-59, respectively, whilst only 1.9 per cent of the respondents were 60 years and over.

Analysis of Research Questions

The variables of this study focused on Relationship Marketing as the preditor (Trust, Commitment, Communication and Service Quality) and long-term element of marketing performance (Customer Satisfaction and Customer Retention) as criterion.

Table 1: **Reliability Analysis of the Variables**

S/N	Items	No. of Items	Cronbach's Alpha
1.	Trust	4	.968
2.	Commitment	4	.942
3.	Communication	4	.980
4.	Customer retention	4	.955
5.	Customer Satisfaction	4	.974

Source: Researcher's computation, 2021

The table 1 above summarizes the reliability result of the dimensions of brand equity and long-term elements of marketing performance. The reliability scale was examined by computing their coefficient alpha. All scales were found to exceed a minimum threshold of 0.7 recommended by Cronbach, (Nunnally, 1978) as (cited in Nwokah, 2010). Hence, we accept that the research instrument measured the variables of the study accurately.

Validity

Content validity refers to items used to measure a construct that are conceptually consistent with the definition of a variable (Scheepers, Bloom and Hough, 2008). To ascertain content validity the instrument was refined during the pre-testing stage where a review of the questionnaire was undertaken by ten managers of microfinance banks after which several changes were made to the instrument. In addition, the questionnaire was pilot-tested with fifteen bankers to ensure that the variables clearly examined the marketing research problem.

Table 2: **Descriptive Analysis of the Variables**

Questionnaire Items	N	Sum	Mean	Std. Deviation
Trust	94	366.60	3.743	1.215
Commitment	94	254.40	2.735	1.436
Communication	94	357.10	3.866	1.231
Customer Satisfaction	94	367.00	3.945	1.123
Customer Retention	94	355.85	3.856	1.214

Source: Field Survey, 2021

The Table 2 above represents the sum, mean and standard deviation of the descriptive statistics of the study variables.

Frequencies on Relationship Marketing and Marketing Performance

Table 3**: Trust, Items and Scores**

Response options and scores								
S/N	Question Items	1	2	3	4	5	Sum	Mean
1.	Customer of financial services have trust on our operations	6(6.3%) 6	12(12.8%) 24	21(22.3%) 63	26(27.7%) 104	29(30.9%) 145	342	3.638
2.	Customers opt for our services because of the level of trust on my bank	3(3.2%) 3	8(8.5%) 16	24(25.5%) 72	28(29.8%) 112	31(33%)	358	3.809
3.	Our customers recommends new clients to us	2(2.1%) 2	7(7.4%) 14	23(24.5%) 69	28(29.8%) 112	34(36.2%) 170	367	3.904
4.	Our MFB enjoys long term customer patronage because we keep to our promises	1(1.1) 1	10(10.6%) 20	27(28.7%) 81	22(23.4%) 88	34(36.2%) 170	360	3.830

Source: Field Survey, 2021

As it is shown in the table 3 above, the minimum mean score elicited by the items intended to measure trust as a dimension of Relationship marketing is 3.632. This implies that there is a high level of construct validity as well as agreement among the respondents that the items in the questionnaire adequately measure what it supposed to measure.

Table 4**: Commitment, Items and Scores**

Response options and scores								
S/N	Question Items	1	2	3	4	5	Sum	Mean
1.	Commitment to service of our staff meets customers' expectations	14(14.9 %) 14	22(23.4 %) 44	27(28.7%) 81	12(12.8 %) 48	19(20.2 %) 95	282	3.000
2.	Customers of our MFB have good image about us	16(17.0 %) 16	24(25.5 %) 48	29(30.9%) 87	10(10.6 %) 40	15(16.0 %) 75	266	2.830
3.	Customers that patronize our services gives testimonies of good experience with its usage	31(33.0 %) 31	18(19.1 %) 36	31(33.0%) 93	4(4.3%) 16	10(10.6 %) 50	226	2.404
4.	Customers of my firm believe that our bank is stable and can deliver its promises	8(8.5%) 8	24(25.5 %) 48	35(37.2%) 105	8(8.5%) 32	19(20.2 %) 95	288	3.064

Source: Field Survey, 2021

From the table 4 above, the minimum mean score of commitment is 2.404, this shows that the respondents did not agree perfectly on the questionnaire items. The result portrays that commitment to service is not a major determinant of marketing performance in the microfinance bank subsector. This can be justified by dividing the total mean value of 11.298 by 4. The result will be a mean value of 2.8245 which is less than the benchmark mean of 3.0.

Table 5**: Communication, Items and Scores**

Response options and scores								
S/N	Question Items	1	2	3	4	5	Sum	Mean
1.	Our bank clearly communicate the attributes and features of our products to the target market	6(6.3%) 6	8(8.5%) 16	15(16.0 %) 45	30(31.9 %) 120	35(37.2 %) 175	362	3.852
2.	Our bank ensure consistency in the message sent out to customers through various media	4(4.3%) 4	7(7.4%) 14	29(30.9 %) 87	22(23.4 %) 88	32(34.0 %) 160	353	3.755
3.	The context and content of our message captures the customer's core values	1(1.1%) 1	8(8.5%) 16	23(24.5 %) 69	32(34.0 %) 128	30(31.9 %) 150	364	3.872

4.	Our communication channels are credible and self-educating	5(5.3%) 5	11(11.7%) 22	19(20.2%) 57	38(40.4%) 152	21(22.3%) 105	341	3.628

Source: Field survey, 2021

From the tabulation in the table 4.5 above, the minimum mean score elicited by the items intended to measure communication as a dimension of relationship marketing is 3.628. This means that there is a high level of agreement among the respondents that the items in the questionnaire adequately measures what they were supposed to measure.

Table 6**: Customer Satisfaction, Items and Scores**

Response options and scores								
S/N	Question Items	1	2	3	4	5	Sum	Mean
1.	MFB customers often express how service quality exceeds their expectations	4(4.3%) 4	11(11.7%) 14	26(27.7%) 78	30(31.9%) 120	23(24.5%) 115	339	3.606
2.	Your firm customers express that the interest they pay on facilities sorted for commensurate with the loan they get	6(6.3%) 6	10(10.6%) 20	20(21.3%) 60	28(29.8%) 112	30(31.9%) 150	348	3.702
3.	Customers of this firm are completely happy about the firm's relationship with them	5(5.3%) 5	9(9.6%) 18	23(24.5%) 69	29(30.9%) 116	28(29.8%) 140	348	3.702
4.	Customers of my firm always report about being delighted with our additional customer services	2(2.1%) 2	3(3.2%) 6	5(5.2%) 15	46(48.9) 184	38(40.4%) 190	397	4.223

Source: Field survey, 2021

From the table 4.6 above, it can be seen that the entire item elicited a mean score above 3.5. This means that the items in the questionnaire adequately measured the concept they were intended to measure. Indicating that questionnaire construct items are valid and that customer satisfaction is a long-term measure of marketing performance in the MFB subsector of the financial sector.

Table 7: Customer Retention, items and scores

Response options and scores								
S/N	Question Items	1	2	3	4	5	Sum	Mean
1.	My firm has maintained a good customer base over their competitors	2(2.1%) 2	4(4.3%) 8	15(16.0%) 45	41(43.6 %) 164	32(34.0%) 160	379	4.032
2.	The firm has experience increase in market share with respect to the rate of customer retention	8(8.5%) 8	16(17.0%) 32	15(16.0%) 45	29(30.9 %) 116	26(27.7%) 130	331	3.521
3.	The firm's level of customer re -patronage is exceptional	6(6.3%) 6	12(12.8%) 24	21(22.3%) 63	39(41.5 %) 156	16(17.0%) 80	329	3.50
4.	The firm has a long - term customer relationship and goodwill	3(3.3%) 3	9(9.6%) 18	11(11.7%) 33	33(35.1 %) 132	38(40.4%) 190	376	4.00

Source: Field survey, 2021

From the table 7 above, the minimum mean score of 3.50 elicited by the items intended to measure customer retention as a long-term element of marketing performance. There is a high level of agreement among the respondents that the items in the questionnaire measures adequately what they were supposed to measure.

Test of Hypotheses

This section of the study aimed at testing the two null (2) research hypotheses stated in the section one of this study. Pearson correlation coefficient model was used in carrying out the analysis. This is aimed at identifying the degree of the relationship between the dimensions of relationship marketing and long-term elements of marketing performance.

Test of Hypothesis

Ho1: There is no significant relationship between Trust and customer Retention.

Table 8: Correlation Analysis of the Relationship between Trust and Customer Retention.

Variables	Statistics	Brand loyalty	Customers satisfaction
Trust	Pearson correlation Sig. (2-tailed) N	1. 94	.966** .000 94
Customer Retention	Pearson correlation Sig. (2-tailed) N	.966** .000 94	1. 94

**Correlation is significant at the 0.01 level (2tailed)
Source: Researchers computation using SPSS version 20.0

From the analysis, the table 8 above shows a very strong relationship between Trust and customer retention in the MFB subsector of the financial sector. This test was carried out at 0.01 level of significance in a 2 tailed test, the result generated a 0.966 score which means that there is a very strong relationship between trust and customer retention in the MFB sector. Judging by the result, the null hypothesis is hereby rejected; and the alternative hypothesis is accepted.

Test of Hypothesis
Ho_2: There is no significant relationship between commitment to service and customer satisfaction

Table 4.9: Correlation Analysis of the Relationship between Commitment and Customer Satisfaction.

Variables	Statistics	Brand loyalty	Customers satisfaction
Commitment	Pearson correlation Sig. (2-tailed) N	1. 94	.341** .001 94
Customer Satisfaction	Pearson correlation Sig. (2-tailed) N	.341** .001 94	1. 94

Source: Researchers computation using SPSS version 20.0

From the table 4.9 above, the result of the correlation coefficient is estimated as 0.341 which indicates a significant but moderate relationship between commitment to service and customer satisfaction in the MFBs. The test was performed at 0.01 level of significance in a 2 tailed test. Based on the result generated, the null hypothesis is hereby rejected and the alternative is accepted.

Test of Hypothesis

Ho_3: There is no significant relationship between communication of values and customer satisfaction

Table 10: Correlation Analysis of the Relationship between Communication and Customer Satisfaction.

Variables	Statistics	Brand loyalty	Customers satisfaction
Communication	Pearson correlation Sig. (2-tailed) N	1. 94	.169** .001 94
Customer Satisfaction	Pearson correlation Sig. (2-tailed) N	.169** .001 94	1. 94

Source: Researchers computation using SPSS version 20.0

From table 10 above, the summary of the result shows that result of the correlation coefficient is estimated as 0.169at 0.01 level of significance in a 2 tailed test; the result generated indicates that there is very weak relationship between communication of values and customer satisfaction in the Microfinance banks under study. Judging by the probability value of 116 which is greater than 0.01 level of significance, we hereby accept the null hypothesis and take the stand that there is no significant relationship between communication of values by the MFBs and customer satisfaction.

Discussion of Findings

The results of this study reveal that the relationship marketing implementation influences marketing performance. Also the results show that concentration on building and maintaining trust and sound communication by the MFBs has significant positive effects on the marketing performance. Commitment to service was found to be very poor and this does not in any way enhance marketing performance and this need to be handled with more care.

The Degree of Relationship between Trust and Customer Retention

The study ascertained the degree of the relationship between trust and customer retention. Hence, it was postulated that there will be no relationship between trust and

customer retention. This hypothesis was tested using Pearson moment correlation. The analysis showed a strong relationship between trust and customer retention. This result is in line with the view of Mahsa, Ali and Fariddeddin (2013) that concluded that customers who trust a bank capability in delivering promises remain committed to the brand, and are willing to pay higher prices for that brand and promote it as well. However, this is equivalent to what we have amongst numerous customers of MFBs in Abia state at large. The result shows that customers know what they want and that firms the firms that enjoy customer loyalty are those firms that tailor their products and services to be in consonance with the needs of their customers.

The Extent of relationship between Commitment to service by MFBs and Customer Satisfaction

The hypothesis 2 sought to identify the relationship between commitment to service by the MFBs and customer satisfaction. It was postulated that there will be no significant relationship between the two variables. The hypothesis was tested using product moment correlation. The researcher's analysis of data showed a significant weak relationship between commitment to service and customer satisfaction. For the micro finance commitment to service to be as perceived as effective and high, firms must demonstrate a clear view of strategies that could guarantee their service quality and follow up implementations of their plan to meet their set out target.

The Extent of relationship between Communication of MFBs and Customer Satisfaction

The hypothesis on communication of MFBs and customer satisfaction aims at determining the extent of relationship between communication and customer satisfaction. Hence, it was stated that there is no significant relation between communication of value by MFBs and customer satisfaction. But, the researchers' analysis of data generated from the field survey showed a very weak relationship between communication of MFBs and customer satisfaction. Based on this, the researcher accepts the null hypothesis and rejects the alternative and concluded that there is no relationship between communication of values by the MFBs and customer satisfaction. This finding conforms to the view of Payne and Frow (2009) that was in agreement that communication has no significant influence on customer satisfaction. Also Vatanasombut, *et al.,* (2008) opine that customers rarely have all the information necessary to make a rational and objective judgement on service quality and even when they do not have information, they may lack time and motivation to process it. Little wonder that it was ascertained that the customers were not satisfied when communication of value is not clear and consistent. However, the key to influencing communication of value by the MFBs is to understand and manage clues properly and to adhere to the basic principles of communication. Thus, it is important to understand that the little information that customers have forms their basis for making a

judgement of quality and which services to sort for.

Summary of Findings

The overall objective of this study was to examine the effect of relationship marketing and non-financial or long-term elements of marketing performance in Microfinance Banks in Abia State as the study area.

The findings are summarized as follows;

I. The relationship between Trust as a dimension of relationship marketing and customer retention as a measure of marketing performance is significant and very strong as a result of some committed and loyal customers of the MFB under study in Abia State as a result of the customer consistent in re-patronage.
II. There is a moderate relationship between commitment to service and customer satisfaction, but more efforts need to be made by these MFBs to improve on their overall commitment to service and service quality in Abia state.
III. It was shown that a very weak relationship exists between communication of values by the MFBs and customer satisfaction. Based on this, the researcher accepted the null hypothesis and rejected the alternative and concluded that there is no relationship between communication of values by the MFBs and customer satisfaction.

Conclusion

Considering the fact that strong and effective relationship marketing has some competitive advantage in the dynamic and sophisticated MFB service industry, it is essential to build a strong relationship which is known to be among the key driver in the overall performance of organizations. One of the competitive advantages that companies with strong relationship marketing have is the opportunity to retain their customers' overtime, satisfy and delight their customers.

The issue of attracting new customers, retaining the existing customers and creation of long relationship management among them has been the ultimate aim of every organization. This can only be achieved through a comprehensive understanding of Relationship marketing, its evolution, RM process and successful implementation of RM which has been the motivation of this study. Based on the findings of this study, the researcher, therefore, concludes that strong and effective relationship marketing influences marketing performance in the MFBs in Abia State through positive relationship with customer satisfaction and customer retention which in turn impacts positively to sales growth, market share and profit in a long run.

Recommendations

Based on the findings of this study, the following recommendations have been made for establishing a strong and effective relationship marketing in the MFB financial service subsector in order to achieving long-term marketing performance in an unpredictable business environment less cost.

i. MFBs should take cognizance of the impact of each of the dimensions of relationship marketing as they influence non-financial elements of marketing performance and allocate resources in order to stand out or match the competition in the dynamic financial service industry.
ii. MFBs should reposition their financial service quality to be in consonance with the expectations of their customers.
iii. Customer care officers of the MFBs should associate their bank name with positive and possible attributes and features that would help their customers retain their brands in memory.
iv. Financial service firms should adopt integrated marketing communication strategy in reaching out their customers about benefits and values attached to their different services.
v. Financial service firms should devote effort to build up the level of commitment to service.
vi. Customers trust on the financial services should be persevered with utmost level of integrity since it transforms to customer retention and satisfaction.

Limitations of the Study/ Suggestions for Further Studies

Due to the relatively small number of respondents (150) that participated in the empirical phase of the study, this study might to a certain degree be regarded as of an exploratory nature. Further research, with larger samples, might add additional insights into the dimensions that are important to the management of Relationship Management in the Micro financial services industry. Suggestions for future research are to replicate this study among (1) other Micro financial services providers in other states in Nigeria and (2) intermediaries in the marketing channel that provide financial services. Such studies could support the findings of the present study and enhance our understanding of the management of marketing relationships.

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Chapter 3

Reshoring Advanced Manufacturing Supply Chains to Generate Good Jobs

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Abstract
One of the most common challenges that COVID-19's frontline workers face has been shortages of personal protective equipment (PPE). This has exposed core weaknesses in a lean global supply chain model that prioritizes costs reduction, just-in-time production, and forecasting strategies that do not typically consider major disruptions such as natural disasters, pandemics, or other geopolitical crises. Supply chain resilience strategies that localize critical industries and their component supply chains could not only alleviate the weaknesses uncovered during the COVID-19 pandemic, but also increase employment growth across historically well-paying industries and provide economic development opportunities for U.S. regions with the economic fundamentals conducive to advanced manufacturing. To provide one model approach for other cities, this brief captures Central New York's strategy to better position itself and its core industries to capture new production opportunities and strengthen resiliency in the face of future global disasters.

Keywords: *Reshoring, Advanced Manufacturing, Supply Chains, Good Jobs*

Challenge
Given the growth Central New York was seeing before the COVID-19 pandemic in sectors key to the region's economic health (communications equipment, defense, manufacturing, tech, food products, etc.) and due to supply chain weaknesses made apparent in the pandemic's early days, targeted strategies are needed to strengthen essential industries and their supply chains to make them more resilient and better able to adapt to global disruptions. The COVID-19 crisis has revealed that supply chains for critical medical products such as PPE quickly led outside of the United States. China is the main supplier for PPE, but given that COVID-19 broke out in

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China, the country needed to reduce exports of PPE to deal with its own crisis. That meant that local health care providers in the U.S. were reporting significant and immediate supply shortages as the pandemic intensified this spring. The challenges in sourcing PPE are emblematic of supply chain realities in other critical industries, including pharmaceuticals, medical devices, semiconductors, automotive, aerospace, textiles and chemicals, communications, and IT hardware manufacturing. Even as domestic manufacturers retrofitted operations to produce PPE, the challenge for the U.S government, states, and health care facilities was that they were all bidding against each other to purchase additional PPE from China. Similar situations arose with testing swabs, face shields, and other critical high-volume, low-price PPE commodity goods, as well as testing reagents. In June, New York Lieutenant Governor Kathy Hochul said, "It was an awakening for us; it exposed our vulnerabilities. I don't ever want to go back there again".

Component and capability shortages in the medical supply industry share several common features with other critical industries' supply chains, including cost of goods and labor, technical expertise, and available turnkey facilities. The United States has an opportunity to leverage industry-led supply chain resiliency strategies to localize advanced manufacturing and transition workers from low-paying retail and service employment into better jobs. The country can create strategic manufacturing industries in central cities and rural areas, connecting individuals who were disproportionally affected by COVID-19 to these high-quality jobs. In the longer term, national security implications must be factored in to reshoring decision making. Secure supply chains in communications infrastructure, packaged food production, defense-contract-driven civilian applications (e.g., the unmanned aerial systems industry in Central New York), and pharmaceuticals are logical next reshoring opportunities. However, overcoming the cost-competitive challenges that led to outsourcing and offshoring these operations in the first place needs to be addressed.

Response

"Reshoring" is the practice of bringing manufacturing and services back to the United States from overseas. This process can help balance trade and budget deficits, reduce unemployment by creating well-paying manufacturing jobs, and develop a skilled workforce. Reshoring also benefits manufacturing companies by potentially reducing the total cost of their products, improving balance sheets, and making product innovations more effective. While many of these supply chains can operate less expensively in Asia, the COVID-19 crisis has underlined the societal risks of leaving this production offshore. What can Central New York and other similarly positioned communities do to address these opportunities and assuage some of these threats? Before designing any interventions, communities thinking about this type of strategy need a better understanding of which industries may be deemed "essential" by a

government entity. A good way to do this is to use the list of industries that were allowed to remain open (or reopen first) during the pandemic's initial shutdown phases. Communities must map the supply chains of these industries to understand their relative localization.

Next, we would suggest conducting a "stress test," as described in a recent Harvard Business Review article, to measure the resiliency of supply chains. Once those industries are defined and mapped and key opportunities are identified, communities can think about executing a series of programs and strategies to address some of the concerns raised above regarding cost competitiveness:

1. **Connect to and leverage regional talent generators and workforce development providers.** With the labor demand of many manufacturers shifting from low-skill, low-cost labor to mid- to high-skill engineering and technical capabilities, U.S. educational institutions are well positioned to produce the very talent that will increasingly be in demand from these sectors.
2. **Target industries needing new investments in "Industry 4.0" technologies.** Related to the need for a digitally fluent workforce, massive disruption is underway in manufacturing, with an increased reliance on technology as opposed to low-cost labor.
3. **Take advantage of Opportunity Zones**. While the Opportunity Zone program has shown success in spurring real estate development projects, it is an underutilized tool for larger, capital-intensive manufacturing projects.
4. **Invest in regionally based soft-landing services**. Companies setting up new operations in any community will need assistance with site selection, permits and local approvals, and optimizing their processes.

Many of these strategies can be bolstered by federal programs and policies that catalyze reshoring efforts, including:

1. **Guaranteed contracting** as part of the ongoing PPE shortage is one example of a successful means of catalyzing reshoring production. After winning a pair of contracts from the Department of Defense, 3M plans to triple monthly production of N95 masks to produce 96 million by October. Some will be manufactured in Wisconsin, and later in Aberdeen, S.D. Puritan Medical Products, the only domestic maker of test swabs, is in the process of renovating a plant in Maine and hiring 150 employees to produce foam swabs. Like 3M, the new investment is driven by a $75.5 million contract with the federal government.
2. **Opportunity zones** can reduce the costs of financing new facilities, another barrier to reshoring. The Tax Cuts and Jobs Act of 2017 established the federal Opportunity Zone program to encourage long-term investments in low-

income urban and rural communities nationwide. An example of an urban manufacturing facility (while not a direct example of reshoring) is JMA's new plant in the south side of Syracuse, N.Y. The $15.8 million investment will renovate a former industrial laundry plant to produce 5G equipment. Scheduled to open early in 2021, the 119,000 square foot plant will employ up to 100 workers in a historically underserved neighborhood. The physical placement of facilities like this one will be critical to how we think about linking and supporting workers as they access jobs. Regions will need to establish workforce programs and wraparound services to ensure these jobs benefit underserved communities. Additionally, with the need to move toward automation, it will be critical to link those programs with educational institutions and training providers to move workers up the skills ladder and meet increasing demand for mid-to high-skill labor. Coupling that with talent attraction initiatives can provide both short- and long-term solutions for reshoring operations.

3. **Federal grants** are another tool that can help regions attract significant technological investments. The Economic Development Administration (EDA) has received "$1.5 billion for economic development assistance programs to help communities prevent, prepare for, and respond to coronavirus." The EDA is using much of this money to recapitalize existing revolving loan funds, so in addition to the possibility of directly funding the development of new facilities for producing PPE, the revolving loan funds will make it possible for new business entrants to benefit from that funding in the future.

It is widely accepted that countries such as China are evolving their manufacturing from cheap labor to capabilities such as custom machining, design, and product innovation. Therefore, incentivizing or funding existing manufacturing-enabling organizations such as Manufacturing Extension Partnerships (MEP) could guide new and existing manufacturers in creating or expanding capabilities. This can be especially effective if combined with initiatives to move manufacturers into Industry 4.0 or smart factories. This is ultimately the way forward in the long run for sustainability, especially for commodity production.

Funding

For a community to take meaningful action in reshoring, an annual investment of around half a million dollars is likely needed for programming, technical assistance, soft-landing services, and coordination among talent generators. This could be coupled with a formula-based economic incentive program, such as New York's Excelsior program, which offers up to 6.85% in fully refundable tax credits per net new job.

Importantly, these strategies cannot be successful without a designated federal strategy and policies intended to localize support chains and drive reshoring. Possible policy measures to expand, examine, or fund include:

1. Expanding on a May 14 executive order allowing the United States International Development Finance Corporation to partner with the Department of Defense to lend money to U.S. companies looking to build out supply chains for critical goods such as ventilators and generic drugs
2. Time-limited tax incentives to build national self-reliance in key pharmaceuticals, medical supplies, and other critical goods
3. Local content rules for medical supply chains and generous investment subsidies to encourage increased domestic production of a range of goods and components
4. Expanding reshoring provisions in the National Defense Authorization Act
5. A dedicated fund to support the upfront costs of reshoring, administered by states to boost revenues and supplement more immediate federal aid
6. Expanding and diversifying the State Department's new economic security strategy beyond the initial targeted countries of Australia, New Zealand, Japan, India, and South Korea
7. Continued support and investment in the NIST MEP program, in coordination with state efforts to develop high-tech and manufacturing-based businesses

Potential Impact

As with any economic development program, increased employment and investment are natural metrics for reshored industries. Upstate New York's former Oneida Flatware, now Sherrill Manufacturing, is an example Select USA recently highlighted in *Reinvesting in the USA: A Case Study of Reshoring and Expanding in the United States.* The company doubled its employment to 56 jobs with a modest $1.8 million investment.

Intentional focus on industry and geographic targets can drive regional prosperity by purposefully siting facilities close to underemployed workforce populations and facilitating the adaptive reuse of underutilized industrial properties. Building on existing regional strengths and supply chains that may be adapted to new customers in communities which have a combination of low operational costs and an available workforce will set up reshored industries for more successful and sustainable operations. Additionally, communities will see increased growth within their existing manufacturers, as they benefit from the same programs and supports used to facilitate reshoring, with organic growth in support industries to meet the increased demand for goods and services.

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Chapter 4

Gender at the Intersection of Education and Entrepreneurship in Bhutan and Vietnam

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Abstract
Micro, small and medium-sized enterprises (MSMEs) constitute the backbone of most countries' economies, representing about 90 percent of businesses and more than 50 percent of employment worldwide. Formal MSMEs contribute up to 40 percent of GDP in emerging economies, making them key to accelerating the achievement of the Sustainable Development Goals (SDGs), especially SDG 1 (no poverty), SDG 5 (gender equality), SDG 8 (decent work and economic growth), and SDG 10 (reduced inequalities). For this reason, the United Nations General Assembly has designated June 27 as MSMEs Day to highlight the contributions of these enterprises.

Keywords: *Gender, Education, Entrepreneurship, Bhutan, Vietnam*

Introduction

Central to the development of a vibrant MSME sector is entrepreneurship because it creates new businesses, which in turn create jobs, enhance competition, introduce innovation, and increase productivity. In the face of the unprecedented global challenges brought on by the COVID-19 pandemic, investing in women and diverse entrepreneurs has become central to inclusive and sustainable recovery and development. As East and South Asia remain the most dynamic regions with growing influence on the world economy, a brief overview of female entrepreneurial activities in these regions, particularly in Bhutan and Vietnam, will help focus attention on promoting needed structural changes in the economy to become more gender friendly.

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Women's Entrepreneurship in Bhutan and Vietnam

Bhutan and Vietnam are among the fastest growing economies in East and South Asia and share many similarities in landscape, culture, and people. The Troika consisting of Bhutan, Thailand, and Vietnam has publicly committed to engaging in sustainable development and poverty eradication efforts. Against that background, women-owned MSMEs in these countries are growing rapidly. However, their ventures tend to be informal, small, and concentrated in low productivity sectors, which put them at greater risk in times of economic crisis. During the COVID-19 pandemic, for example, women entrepreneurs in these countries have suffered more than their male counterparts from temporary business suspension and permanent closures.

According to a recent study commissioned by the Bhutan Chamber of Commerce and Industry (2022) and led by 2014 Echidna Global Scholar Nima Tshering, 91 percent of businesses in Bhutan were negatively impacted by the COVID-19-related lockdowns and business restrictions, with women-owned informal and home-based businesses most affected. Similarly, in Vietnam 80 percent of women-owned businesses were among the most impacted sectors, as compared to 60 percent of businesses owned by males. The pandemic intensified major barriers women already faced, such as small networks, legal challenges, limited access to technology, and reduced time for education due to higher work-family conflict. In other words, women entrepreneurs are overrepresented at the base of the economic pyramid in general and with respect to MSMEs in particular.

Empowering women entrepreneurs to survive and thrive amid the pandemic and beyond: Education as investment

In response to the current economic crisis, some governments have put in place measures to support the survival of women entrepreneurs. For example, in Bhutan, entrepreneurial innovation has been promoted as a COVID-19 recovery strategy for businesses. According to the Minister for Economic Affairs Loknath Sharma, the "innovate first, regulate later" approach, which allows Bhutan's entrepreneurs to open a business in under a minute, has been implemented as a solution to remove barriers facing women entrepreneurs. This is an important and relevant support because most of the women entrepreneurs in Bhutan are in informal, cottage, and small businesses. Furthermore, new capital business investments of less than 2,000,000 Nu (around U.S. $26,000) will be allowed to commence operations without requiring a license or regulatory clearance, except for those on the prohibited and controlled list. Likewise, in Vietnam where women still experience limited access to land and credit, the government has given financial assistance to enterprises affected by COVID-19 including a 15 percent reduction in land rental fees and a 2 percent reduction in loan interest rates as an emergency response.

These policies may provide immediate supports to women entrepreneurs, but as countries move from recovery to development, due attention should be paid to interventions that balance short-term economic objectives with sustainability and resilience in the long run. A growing body of research demonstrates that no tool is more effective for doing that than education. Educated girls and women can "understand their social and legal rights, become economically independent, acquire a voice in the affairs of the family and the community" (Pachaiyappan, 2014). As they exercise agency, greater gender equality can be achieved, economic performance enhanced, and development outcomes for future generations improved.

While access to education for today's girls and women has dramatically expanded, they are still less likely to receive education than boys and men, which has major consequences on their personal growth and well-being. In Bhutan and Vietnam, the disproportional representation of women entrepreneurs at the bottom of the economic pyramid may have its roots, in part, in girls' and women's limited access to quality education. In Vietnam, according to a 2020 report by UN Women, lack of knowledge and skills is the major barrier facing women entrepreneurs. Investing in girls' and women's education, therefore, will put them in the fast development lane. The Informal Economy Diagnostic Study in Bhutan conducted by the Ministry of Economic Affairs (2021) shows that 90 percent of workers in the informal economy have not completed secondary education, with 39 percent of women having no education compared to 34 percent of men. Bhutan's data shows that girls' quality education can have downstream implications for the economy. Modern education began in Bhutan only in 1961 and in 1970, only 2 girls were enrolled in primary school for every 100 boys. Half a century later, while Bhutan's gender ranking for primary school as well as secondary school enrollment is 1st out of 156 countries, according to the latest Global Gender Gap Report 2021 by the World Economic Forum, Bhutan's gender ranking for economic participation is a dismal 130th. It is also notable that Bhutan's gender ranking for tertiary education is 117th, and women make up only 18.5 percent of senior executives or managers in the economy. Such data indicate that there may be a link between the educational attainment of girls and young women and their positions later in the economic pyramid, although the promise of gender parity in primary and secondary school enrollment is yet to be reflected in the economic sector.

It is important to take a more systemic and gender-transformative view of education that not only empowers girls as individuals allowing them to develop needed skills and move up the economic pyramid but also transforms the larger context of gender equality within a country that then promotes structural change in the economy. In other words, we must move toward a female-friendly economy and female-friendly entrepreneurial ecosystem.

Education for Girls and Women should go beyond Access to School

Much of the conversation around MSMEs over the years has centered on increasing the number of female entrepreneurs. It is imperative now that we focus more on helping them grow their businesses and reach the upper levels of the pyramid, instead of being stuck at the base. Increasing access to education for girls and women has not been sufficient to reach this end. Rather, it is fundamental to focus on what we call the "gender intersection of education and economy streets" to address systemic barriers such as gender norms and stereotypes, as well as the specific needs of girls and women.

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Chapter 5

BTA FX Strategy: A Panacea to Successful Trading in Period of Fundamental Interference to Forex Market

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Abstract
Forex is market where currencies are bought and sold with the aim of making profit. Traded currencies are paired together one on the front and the other on the rear, the front currency known as the base is the trading item and it is bought and sold with the one at the rear. One of the major factors responsible for loss in the forex market is fundamental factor. A fundamental factor is an event occurring outside the market that is capable of causing undetected, unanalyzed and unprecedented changes in price of currency pair in most cases going in the opposite direction of traders. The most prevalent event that is fundamental is war. Russia-Ukraine war has come with negative impact on forex market causing large losses to traders, particularly swing and position ones. The researcher after suffering from heavy loss from individual account and managed account, has to go deeply into research and search of solution to make trading at this period and similar period safer. The researcher came up with a forex trading strategy which he called 'Buy Them All', or simply BTA. The strategy was experimented on different forex live accounts with assistant of volunteers and was found to drastically eliminates the losses associated with the war. The strategy which is a body of methods, terms and procedures, is therefore recommended for use by Swing and position traders without fear of fundamental interference.

Keywords: *Forex, BTA, Swing, Position, trading style, Currency pairs.*

Introduction

Forex is an online market that handles selling and buying of currency pairs worldwide using a computer terminal. It is the largest market transacting liquid cash worth $6 million in a single day. Challenges used to come up causing loss and annoyance to people who trade in the market, out of all challenges one is big and notorious and that

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is fundamental factor. A fundamental factor is an event somewhere outside the market, in our day-to-day activities that tends to make impact on price changes in the market. War is an example of such fundamental factors that pushes or pulls price of currency pairs. The Russia-Ukraine war fundamentally makes prices to go direction different from what has been analyzed technically by traders thereby incurring on them unpredicted losses and annoyance. The loss is of higher magnitude to long term traders i.e., Swing and Position and search for remedy to prevent or neutralizes losses on forex trading due to fundamental factor like war, thus begins.

Forex

The global foreign exchange market ('FX', 'Forex' or 'FOREX') is the largest market in the world as measured by the daily turnover with more than US$5 trillion a day eclipsing the combined turnover of the world's stock and bond markets. The forex market measuring a propelling turnover is one of the many reasons why so many private investors and individual traders have entered the market. The investors have discovered several advantages many of which are not available in the other markets (Tutotials Point, 2018). The forex market consists of a worldwide wired network of buyers and sellers of currencies, with trading all done over-the-counter (OTC), which means that there is no central exchange and clearinghouse where orders are matched (Chen, 2011). Tutorials Point (2018) defines Forex in simple terms, as currency exchange, it is also called the foreign exchange, FX or currency trading. It is a decentralized global market where all the world's currencies trade with each other. It is the largest liquid market in the world. Depending on the country, a currency may be available for trading once the apex bank of the country opens for business in the five business days of the week. table 1 and 2 show business time of major countries that formed forex market in both summer and winter session.

Table 1: Summer Session Business Time

Time zone	Nigerian Time	GMT
Sydney open	11:00 PM	10:00 PM
Sydney Close	08:00 AM	07:00 AM
Tokyo Open	12:00 PM	11:00 PM
Tokyo close	09:00 AM	08:00 AM
London open	08:00 AM	07:00 AM
London close	05:00 PM	04:00 PM
New York open	01:00 PM	12:00 PM
New York close	10:00 PM	09:00 PM

Source {Tutorials Point, 2018]

Table 2: Winter Session Business Time

Time zone	Nigerian Time	GMT
Sydney open	10:00 PM	09:00 PM
Sydney Close	07:00 AM	06:00 AM
Tokyo Open	12:00 PM	11:00 PM
Tokyo close	9:00 AM	8:00 AM
London open	09:00 AM	08:00 AM
London close	06:00 PM	05:00 PM
New York open	02:00 PM	01:00 PM
New York close	11:00 PM	10:00 PM

Source {Tutorials Point, 2018]

The most traded, dominant and strongest currency is the US dollar. The primary reason for this is the size of the US economy, which is the world's largest. The US dollar is the preferred base or reference currency in most of the currency exchange transactions worldwide. (Tutorials Point, 2018). The term "bull" (bullish) and "bear" (bearish") are often used to describe how the overall financial market is performing in general – whether there is an appreciation or depreciation. Simply put, a bull (bullish) market is used to describe conditions where market is rising and a bear (bearish) market is the one where market is going down. It is not, a single day which describes if the market is in bullish or bearish form; it is a couple of weeks or months which tell us if the market is in the bull(bullish) or the bear(bearish) grip (Tutorials Point, 2018). In a bull market, the confidence of the investor or the traders is high. There is optimism and positive expectations that good results will continue. So, in all, bull market occurs when the economy is performing well – unemployment is low, GDP is high and stocks markets are rising. While bear market denotes a negative trend in the market as the investor sells riskier assets such as stock and less-liquid currencies such as those from emerging markets. The chances of loss are far greater because prices are continually losing value. Investor or traders are better off short-selling or moving to safer investments like gold or fixed-income securities.

Technical Analysis

Technical analysis helps in the prediction of future market movements (that is, changes in currencies prices, volumes and open interests) based on the information obtained from the past (Tutorials Point,2018). There are different kinds of charts that help as tools for technical analysis. These charts represent the price movements of currencies over a certain period preceding exchange deal, as well as technical indicators. The technical indicators are obtained through mathematical processing of averaged and other ccharacteristics of price movements (Tutorials Point, 2018). Technical Analysis (TA) is based on the concept that a person can look at historical price movements (for example currency) and determine the current trading conditions and potential price movement (Tutorials Point).

Fundamental Analysis

Fundamental analysis is analysing the currency price forming, basic economical and other factors influencing the exchange rate of foreign currency. It is the analysis of economic and political information with the hope of predicting future currency price movements. Fundamental analysis helps in forecasting future prices of various foreign currencies. Forecasting of prices is based on a number of key economic factors and indicators that determine the strength of a country's economy. The factors may also include various geopolitical aspects that may impact the price movement of a currency pair. The market's momentum can easily reverse or an extreme volatility can be seen in a matter of minutes after an important announcement or press release is made by the central bank. Information related to the status of the local and global economies can have huge impact on the direction in which the forex market trends (Tutorials Point, 2018). Fundamental factors cause diversion in price trend in forex market and may cause volatility.

Trading Style

In forex there are four trading styles which are separate ways of trading forex markets. These styles are:

1. Scalping trading style: Trade session duration lasts for hours and less than a day.
2. Day trading style: Trade session duration lasts for a day and not beyond that.
3. Swing trading style: Trade session duration lasts for a week and up to a month.
4. Position trading style: Trade session duration lasts for a month and up to a year.
5. Chen (2011) referred to these four as trading time frame.

Trading Strategy

Forex strategy is an embodiment of methods and procedures, knowledge and disciplines meant to guarantee success in forex trading. Forex like soccer, is a financial game where many losses money and very few win money. In soccer tournament only one team out of many others wins. Team with a winning strategy usually wins also trader with a winning strategy profit in forex. Chen (2011) identified three major parts of forex strategy as mind, money and method. This research sees definition by Chen (2011) to be an aerial perspective which can be further broken in the following manner:

1. Mind is the house of disciplines and knowledge,
2. Money works successfully with risk management, knowledge and discipline, and finally
3. Methods contains procedures and methods leading to success.

Strategy to a trader is as important as strategy to soccer team.

Valutrades (2019) in explaining importance of strategy to Forex trade, stated that due to forex popularity with day traders, forex has even gained a reputation for turning

quick profits. In truth, it's just as complex and competitive as any other world marketplace. To not only succeed but also succeed consistently, one needs to understand the market and hone one's trading strategy. The author also highlighted about nine trading strategies that can be applied in Forex as follows:

1. Trend trading strategy: Trader observes price trend and studies its strength and how far it will last before an opposite trend manifest. After those studies, trader trades in the direction of the trend. trend traders, who are naturally long term in nature, favour trending markets or those that swing between overbought and oversold thresholds with relative predictability.
2. Position strategy: Valutrades (2019) sees this as strategy too apart from being a trading style or timeframe, by holding trading position for long term makes trader to balance losses with profit over long term.
3. Range strategy: Somehow similar to trend, the strategy looks for support and resistance levels and trading is done in between the two.
4. News strategy: The trader relies heavily on fundamental factors and studies them very well before trading.
5. Swing strategy: Requires the knowledge of which of the two players controls the market and then follow the pattern of such player. A swing emerges when players change baton. The players are buyers known as bulls and sellers known as bears. Valutrades (2019) sees this as strategy in addition to being a style.
6. Scalping strategy: Just as Valutrades (2019) sees position and swing as also strategies apart from being styles, also sees scalping as strategy too. Holding position for very brief and short-term guarantee exit with small profit or small loss, the latter is the motivation behind this strategy not to go away and in absence of trader heavy loss is incurred on opened position.
7. Day trade strategy: Similar to the above.
8. Retracement strategy: Retracement is when price reverses direction shortly on trend before coming back to course. Here, trader capitalizes on retracement and make short profit.
9. Grid strategy: A breakout occurs, when price go up above resistance level or below support level. In grid strategy, trader places orders above and below the breakout so as in any direction the breakout moves an order will be triggered and the trader comes into the market.

Cheng (2011) itemized seven strategies in Forex which she called "winning strategies", different from that of Valutrades, picking only a strategy and not a style pushed to the position of strategy. These strategies according to Cheng (2011) are:

1. Market sentiment: This is very similar to news strategy of Valuetrade (2019).
2. Riding trend strategy: Also similar to trend strategy of Valuetrade (2019).

3. Breakout fading strategy: Similar to retracement strategy of Valuetrade (2019).
4. Breakout trading: Is a synonym to grid strategy of Valuetrade (2019).
5. Decreased volatility breakout strategy: Similar to breakout fading, however market volatility must be studied first before taking position, if the market is calm then position can be taken to the advantage of volatility.
6. Carry trade strategy: Which is market sentiment strategy, but mostly undertaken by institutional traders.
7. News straddling: Also another form of market sentiment strategy, but thorough review of the news affecting forex market are done in order to guide actions of trader.

The Impact of Russia-Ukraine War on Forex

World trade organization (2022) asserted that the crisis in Ukraine has created a humanitarian crisis of immense proportions and has also dealt a severe blow to the global economy. It further asserted that GDP forecasts for 2022 are certain to be downgraded in light of the Russia–Ukraine war. Output in the war zone will be directly reduced, while economic sanctions will impose costs on both Russia and its trading partners. Higher prices for food and energy will depress real incomes and reduce consumption and investment worldwide, which will, in turn, lower global import demand. The negative impact to the economy is seen from the fact that Russia and Ukraine are both large agricultural exporters, especially of grains (wheat, maize, barley) and sunflower products. This is shown in figure 1 and 2.

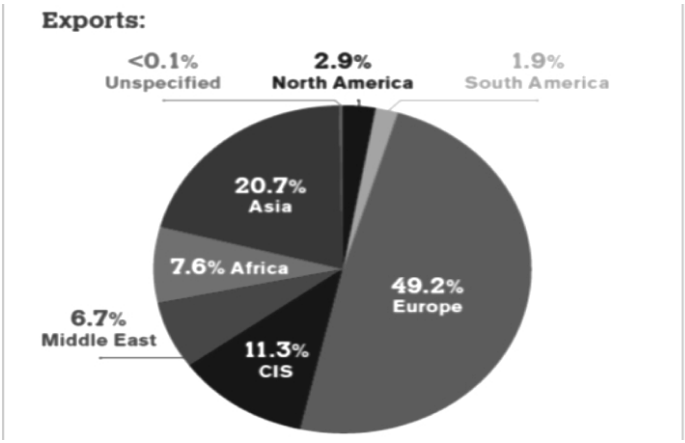


Figure 1: Merchandise exports of Ukraine. (Source: World Trade Organisation, 2022)

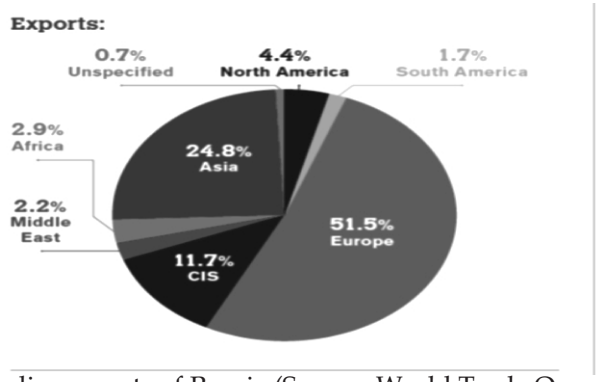


Figure 2: Merchandise exports of Russia (Source: World Trade Organisation, 2022)

These exports when distributed to countries of the World shows how significance it is and if sanctions are imposed on it, definitely there will be dramatic effect on global economy and forex market inclusive. Figure 3 shows the distributions among countries:

Figure 3: Distribution of Russia and Ukraine exports among countries of the world (Source: World Trade Organistion, 2022)

Shifting to non-agricultural sector the data is same, showing significant reliance of the rest of the world on Russia and Ukraine. Figure 4 shows the raw material exports for manufacturing industries, of Russia and Ukraine among the countries of the world:

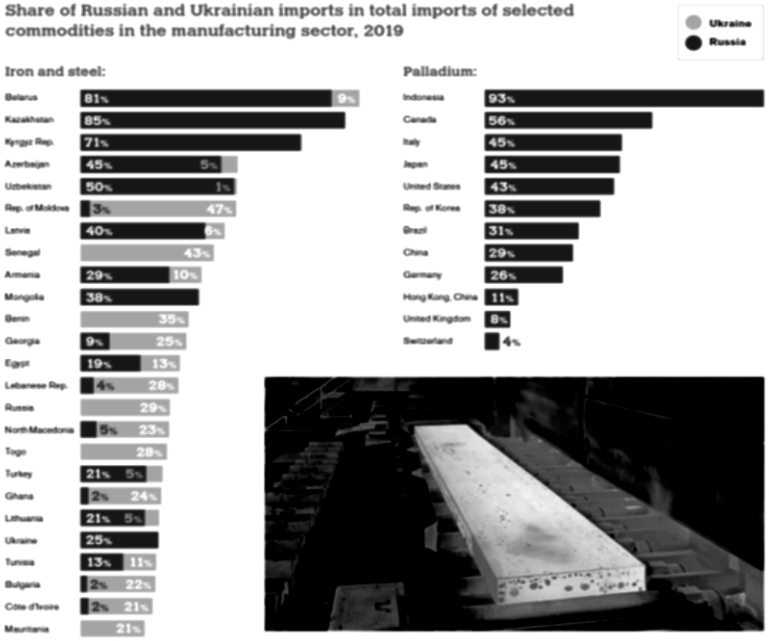
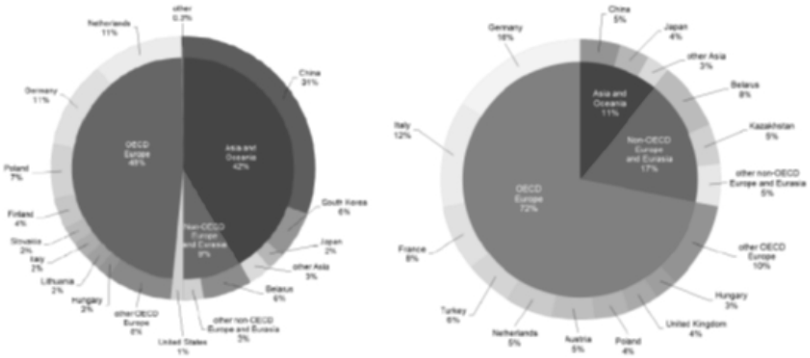


Figure 4: Distribution of manufacturing raw materials of Russia and Ukraine to countries of the world (Source: World Trade Organisation, 2022)

While energy exports of the two countries is shown in figure 5



Balbaa, Eshov and Imailova, (2022)

GDP of several countries is predicted to lower down directly from the effect of the crisis in Ukraine. This will give rise in inflation of currencies of these countries and thereby affecting Forex market. Balbaa *et al.* (2022) stated that hyperinflation will occur in European countries even after the war ended, due to the effect of the war. Figure 6 shows the prediction of falling of GDP resulting from the crisis.

Figure 6: falling GDP prediction resulting from Ukraine crisis (Source: World Trade Organisation)

Balbaa *et al* (2022) has seen that by retaliation sanctions on energy Russia is imposing on Europe will put several European countries into recession. Here too, Forex market will be affected and with Europe as the focal point of Forex market where $^{1}/_{3}$ of Forex deals are executed, Forex market will experience sharp price changes. Volatility of currency pairs is observed two months after the war and unpredicted price changes is gradually dominating the market. Fundamental factors render technical analysis no longer reliable in forex trade at this period of Russia-Ukraine war.

Scope of the Study

The study and experiment of new strategy in this research, is limited to currency pairs available on two broker's platform, namely etoro and FXTM. In etoro virtual account and in FXTM US Cent account. Experiment is conducted within four weeks period (The month of April 2022).

Problem Statement

Russia-Ukraine war that erupted in the first quarter of 2022 has severe consequences on the global economy, giving rise to unavoidable inflation on currencies of many countries. Inflation caused prices of currency pairs in Forex market to go towards direction that is not anticipated by traders thereby causing them to loss in much of their trading. Swing and Position traders are mostly affected negatively. Strategies appear not to be working due to fundamental factor throwing weight and influencing the market.

Objectives

The aim of this research is to develop a working forex strategy that Swing and Position

traders can use at the time of fundamental influence like war without suffering heavy loss. The specific objectives are:

1. Formulation of a strategy with philosophy that may appear to be working at time of fundamental influence.
2. Testing the formulated strategy at control trading environment within the period of Russia-Ukraine war.
3. Analyzing result of test in terms of profit and loss.

Research Question

How can Swing Trading Style be done in a period of fundamental influence like war (Russia-Ukraine) without suffering loss outweighing profit.

Summary of Relevant Literature

Chen (2011) and Valutrades (2019) agreed on 5 strategies commonly used by traders. These are:

1. News or market sentiment strategy
2. Trend or trend riding strategy
3. Breakout fading or retrenchment strategy
4. Breakout trading or grid strategy
5. Decreased volatility breakout strategy

Methodology

The research formulates a strategy that is named BTA which stands for "Buy Them All". The philosophy behind the strategy is that fundamental factor cannot affect all currency pairs and makes them go towards unpredicted directions. Some pairs may not be affected at a given time; some may even be pushed to go toward the right direction. If all pairs are to be traded with relative risk management, trader may have loss and profit and with ability to close position on pairs that are seem to be affected and indicated by loss, trader can make a gain from those giving profit. The following postulates are the framework of the strategy:

1. Different formula were adopted to calculate the lot size of each pair with strict consideration to pair equilibrium and free margin.
2. Both bullish and bearish patterns are used.
3. Alligator or moving average technical analysis tools are used.
4. 1D (1 Day) or 1W (1 Week) timeframes are used for Swing and Position styles respectively.
5. Trend or trend riding strategy is adopted.
6. Any pair showing swing emerged, then position is opened on the pair toward the pattern of swing. Several positions can be distinctly opened on pairs, up to 20 positions.
7. As part of risk management SL is calculated at 2% of opening position price

and TP is calculated at 1:1, 1:2 or 1:3 risk/reward ratio and each used at an appropriate place.

8. Gradually closing of positions that are consistently going negative (called weeding) is done during follow-up of trades.
9. Gradually closing of positions that gave profit and if allowed another new and opposite swing will soon emerge (called harvesting).
10. If position required no weeding and no harvesting it is allowed to have TP to trigger.
11. Technical analysis is done on daily basis to determine weeding, harvesting or new order (Except Saturdays and Sundays, since forex market is closed on weekends).

During experimenting the strategy, four forex accounts were used, these are:

1. Etoro virtual account accessed through web having virtual equity US$ 75,000. Full time trading on currency pairs and selected commodities using Swing style with BTA strategy are used. We will refer to this account as Account Alpha.
2. FXTM USC live account accessed through desktop app and having USC 1,400. Full time trading on currency pairs only and Swing style and BTA strategy are used. We will refer to this account as Beta.
3. FXTM USC live account accessed through Android MT4 App, having USC 1,900. Part time trading on currency pairs only and BTA strategy, but scalping and Swing style are used. We will refer to this as Omega.
4. FXTM USC live account accessed through Android MT4 app having USC 900. Full time trading on currency pairs only and BTA strategy, but scalping and swing styles are used. We will refer to this as Theta.

Period of test is all weeks of April 2022 during which Russia-Ukraine war is ongoing.

Discussion of Result

The Result obtained is shown on table 3.

Table 3: Result of Testing BTA Strategy

S/N	Account	Starting Equity	Closing Equity	Profit/Loss	Percentage Profit/ Loss
1	Alpha	US$ 75,000	US$ 103,836.81	US$ 28,836.81	38.45%
2	Beta	USC 1,400	USC 3,068.63	USC 1,668.63	116.33%
3	Omega	USC 1,900	USC 1,573.41	USC -326.59	-17.19%
4	Theta	USC 900	USC 1,110.73	USC 210.73	23.41%

Source Field work

Result of the experiment indicates BTA can be profitable strategy in period of fundamental influence like war for Swing trader and success is governed by the following parameters as indicated in the results of the experiment with four forex accounts:

1. The strategy best work in full time trading as indicated in Alpha, Beta and Theta accounts.
2. Best work on currency pairs only as indicated in Beta and Theta accounts.
3. Best work with Swing trading style as seen by comparing Alpha and Beta with Theta account.
4. In 4 weeks, period of trading, it has capability of building profit as seen in Beta account.

Conclusion

The new strategy named BTA is experimentally found to be a profitable strategy to Swing on full-time trading of currency pairs even in fundamental influenced period. The strategy which is based on trend riding strategy, seem to be a working one in Forex market and minimizes losses and maximizes profit.

Recommendation

Resulting from the findings of the four experiments, BTA FX strategy is hereby recommended for use by Swing traders and by extension to Position traders as well, since the two shared many common features. The strategy is best used in period of high influence from fundamental factors like war and yet can be used in period of calm. It is further recommended that subsequent researchers on this strategy, should conduct experiment on using the strategy on position style during this period of Russia-Ukraine war and separate experiment to be conducted in period of calm when the war comes to an end for both Swing and Position style.

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Chapter 6

Fiscal Space and COVID-19 Pandemic: Evidence from Nigeria

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Abstract
Fiscal sustainability concerns in Nigeria and the rest of Africa have increased recently following heightened fiscal (debt and taxation) vulnerabilities attributed to external shocks including the COVID-19 pandemic. This paper investigated debt, taxation and financing for development and immediate responses to global emergencies and efficient planning for Nigeria. This paper covers the periods 1986 to 2020. The framework of this study follows the Keynesian fiscal reaction function and the SVAR) approach was adopted on variables of debt-to-GDP ratio, fiscal balance, inflation, interest rate and trade openness. The variance decomposition and impulse response function results show that apart from the shock of debt-to-GDP ratio, fiscal balance and real GDP contributed 40% of the total variations in debt-to-GDP ratio made more severe by the COVID-19 pandemic. The policy implication of the result is that fiscal policy reform for innovative development financing and virile taxation system is necessary for global emergencies in Nigeria. To entrench fiscal sustainability therefore, Nigeria policy makers need to strengthen domestic resource mobilization and improve public debt management. Consequently, strategies and complimentary policy options to efficient tax revenue collection and public debt management are critical.

Keywords: *COVID-19 pandemic, Fiscal space, Debt, Efficient tax revenue, SVAR*

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Introduction

The COVID-19 pandemic has exacerbated the risk of a debt crisis for low- and middle-income countries (LIMCs) that has been rising since the 2008 global financial crisis. According to the International Monetary Fund (IMF), a quarter of LIMCs, home to 200 million children, are currently at a high risk, of debt challenges. As the global economy contrasts and revenues fall, the growing burden of debt interest threatens to crowd out social spending even the more (UNICEF, 2021). The outbreak of COVID-19 and its rapid spread across the world introduced a new dimension of the disruption ever in history and its impact took more toll on government revenues, business, families and individuals across the world. This has prompted various governments across the world to introduce fiscal and economic stimulatory measures to ameliorate the impact of the pandemic on taxpayers (KMPG, 2020). Around the world, governments have used emergency powers to lock down economies and curtail the movement of people to forestall the spread of the virus. Simultaneously, policymakers have attempted to offset some of the resulting collapse in private sector economic activity by crafting massive debt-financed government spending.

Empirically, in the last two years, several studies have been carried out using both time series and cross- sectional dimensions to examine the relationship between COVID-19 and the fiscal space. A survey of the literature provides ample evidence (Fernades, 2020; Atkeson, 2020; McKibbin and Fernado, 2020; Altig et al.,2020; Ozili, 2021; Ozili and Arun, 2020; Daniels, 2020; Lubik and Schwartzman, 2020; Nafula *et al,* 2020; Issahaku and Abu, 2020; Brown, 2021; Ndugu and Abebe, 2020; Seck, 2020; Kateria, 2021; Zgova, 2021; Nwesigye, 2021; Chisadza *et al.*, 2021; Olubuwye and Ogbonma, 2021; Alan *et al.,* 2020; Fjestad and Therkildsen, 2020 and Rephann, 2020, Osabuohien *et al.*,2021). Majority of these studies were cross-country studies and focused on other social economic indicators. However, Ozili (2021) and Osabuohien *et al.,* (2021) are studies related to this study, but not empirically evidence- based like this study.

The research gap and policy insight covered by this study is three- fold: i) This study contributes to country-specific studies on the literature on COVID-19 pandemic and development finance in Nigeria, ii) While Osabuohien *et al.,*(2020) focused mainly on budget, our study focused on the sensitivity of COVID-19 pandemic to debt and taxation using structural vector autoregressive(SVAR) approach and the data set of oil price, real GDP, foreign direct investment, inflation, population growth, aggregate investment, and trade openness. Other controlled variables include corruption, rule of law, per capita income and government expenditure, iii) these included variables in the empirical model are impacted negatively by the COVID-19 pandemic. It is on account of this and preceding issues from the literature that this study claims its value addition. This study covers the period 1986 to 2020 and the data used in this study

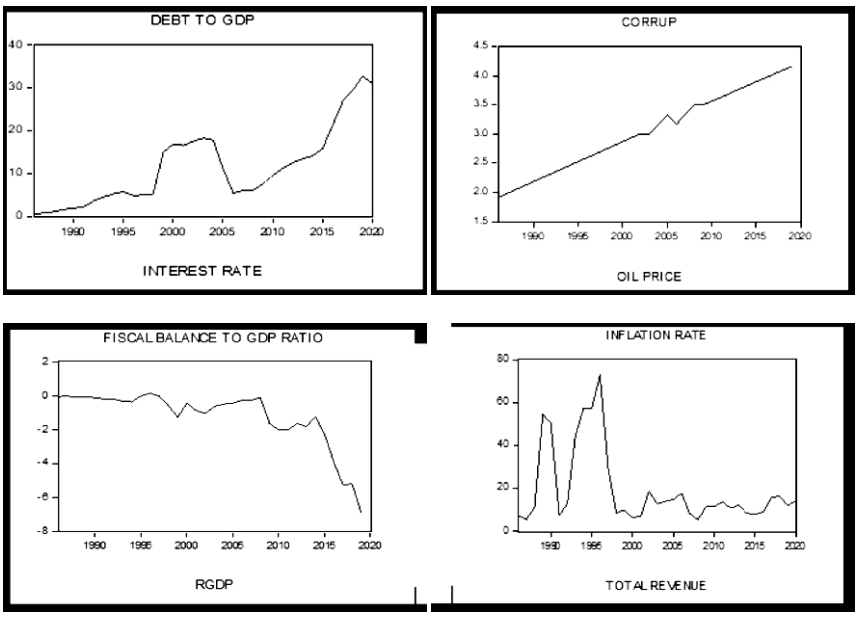
come from the Central Bank of Nigeria Statistical Bulletin of various issues; National Bureau of Statistics and UN Economic Commission for Africa database (2020).

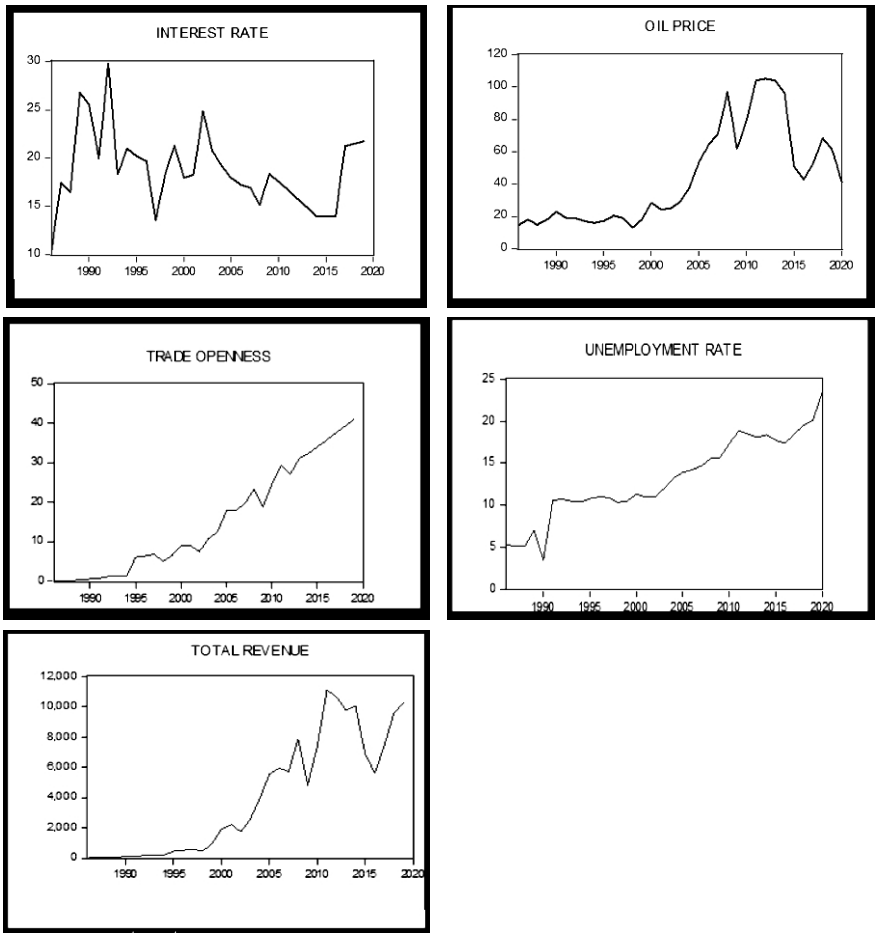
Following this introductory section is section two, which highlights some stylized facts on the Nigerian economy, debt and finance before and during the COVID-19 pandemic. Section three is on the methodology while section four is on the results and discussion. Section five present the conclusion and policy implications.

Methodology and Data Analysis

Data Analysis

The data used in this research come from the Central Bank of Nigeria (CBN) Statistical Bulletin, the National Bureau of Statistics (NBS) and the Economic Commission for Africa database (2021). They cover the period of 1986 to 2020. The key variables of interest are: debt-to-GDP ratio (proxy for public debt), fiscal balance, inflation, interest rate, oil price, real goes domestic product, total revenue, trade openness, and unemployment. The description of these variables and the justification for inclusion are presented at the annex. The data was analyzed using the descriptive statistics, unit root test, the co-integration test and the structural VAR approach.





Source: CBN (2021)

The graphical analysis of the variables is presented above. From the trend of these variables, it was shown that debt –to-GDP, corruption, fiscal balance, inflation rate, interest rate, oil price, trade openness, unemployment and total revenue trended moderately at the early years from 1980 to 2015 but from 2019 to 2020, the trends became more severe following due to the COVID-19 pandemic.

Theoretical Framework and Model Specification

The fiscal reaction function is the theoretical framework of this paper. The fiscal reaction function is a rule or condition derived from budget constraint of governments. It analyzes the relationship between primary balance and debt stock. It

also signals how sound and sustainable fiscal policy stances are and where appropriate responses should be channeled.

The fiscal reaction function is in line with Bohn (1998) model specification as:

$$bt = \alpha + \beta d_t + \beta z_t + \mu_t \qquad 2.1$$

Where β is approximately measures the presence of the internal debt correlation term. The term Z represents vectors of other variables that can also determine primary balances such as output gap, interest rate, exchange rate and inflation rate.

Estimation Procedures

Impulse Response Functions (IRFs)

Impulse response function analysis provides extremely useful information with which to characterize the dynamics of a model by illustrating the evolution over time of effects of shocks on variables and importantly, on the persistence e of the effects of shocks over a long period. An IRF traces out the response of a variable of interest to an exogenous shock. This means that the ultimate effects of a shock can vary depending on the state of the system at the time of the impact of the shock and the sign and magnitude of the shock.

Variance Decomposition Analysis (VDC)

The VDC provides a tool for analyzing the importance of the independence variables in explaining the variations in the dependent variable (Debt-to-GDP ratio). In other words, after identifying the structural shocks, the VDA shows what percentage of the forecast error variance for the debt-to-GDP ratio in the Nigerian economy as explained by the various shocks as represented by the included variables in the model.

Model Reliability and Stability Test

Accordingly, the econometrics literature places a good deal of emphasis on procedures for interrogating the quantity of a model's specification. These procedures address the assumptions that may have been made about the distribution of the model's error term, and they also focus on the structural specification of the model, in terms of its functional form, the choice of regressors and possible measurement errors. This is the diagnostic test involving the normality (Jargue-Bera statistics), the serial correlation LM test, the autoregressive conditional heteroscedasticity Lm test), the specification error (Ramsey Reset test) and the Heteroscedasticity (white test).

It is now a standard practice to incorporate short-run dynamics in testing for stability of the long-run parameters of the econometric model for stability of the short-run model, it is important that the recursive residuals and CUSUM of squares stay within

the 5% critical bound (represented by two straight lines whose equations are detailed in Brown *et al.*, 1975).

Empirical Results

Summary of Descriptive Statistics

The empirical results commence with the examination of the statistical properties of the interested variables in terms of their measures of central tendency and measure of dispersion. The descriptive statistics of corruption, fiscal balance, inflation, interest rate, price, real GDP, total revenue, trade openness debt-to-GDP and unemployment are presented in table 4.1.

Table 1: Summary of Descriptive Statistics

Variables	Obs.	Mean	Std	Min	Max	Kurtosis
CORRUP	34	3.04416	0.684324	1.9117	4.1666	1.775560
DEBTTOGDP	34	10.86585	8.418455	0.45866	32.63169	3.056647
FISCALBAL	34	1.224146	1.701028	6.8832	0.151334	6.055818
INFL	34	19.55175	18.14077	5.3822	72.83550	4.363003
INT	34	18.73921	4.015342	10.5000	29.80000	3.641995
OIL PRICE	34	44.21012	30.82057	13.0644	105.0096	2.243548
TREVENUE	34	571026.8	370074.5	20.48065	1847.691	5.126041
TROP	34	3967.390	3905.846	12.59580	11116.85	1.745676
UNEMP	34	15.17869	13.5722	0.072361	40.96037	1.839606
		12.90206	4.591099	3.50000	20.13000	2.179651

Notes: CORRUP = Corruption, DEBTTOGDP = Debt-to-GDP ratio, FISCALBAL = Fiscal balance; INFL = Inflation; INT = real interest rate; OILPRICE = Oil price US$; TREVENUE = Total revenue (oil x non-oil), TROP = trade openness (X+M/GDP), UNEM = Unemployment rate.

Source: Researcher's Computation using Econometric View (10.0).

Table 1 show 34 observations. The statistics show the existence of wide variations in the variables. It shows that corruption has an average value of 3.7 with minimum and maximum values of 1.9117 and 4.1666 respectively; this is compared to the debt-to-GDP ratio of 10.8658 and -1.224146 for the fiscal balance. Oil price has an average value of US$44 dollars while the total revenue stood at NGN571026.8. The kurtosis statistic showed that corruption, total revenue and trade openness are platykurtic, suggesting that their distribution is flat relative to normal distribution, while oil price and unemployment are leptokurtic, suggesting that the distribution is peaked relative to normal distribution.

Unit root with structural breaks

Most traditional unit root tests have been on the basis of failure to allow existing

breaks, leading to a bias that reduces the ability to reject a false unit roof null hypothesis. To overcome this, this study undertook unit root with structural breaks as presented in Table 2.

Table 2: Unit root with structural breaks (Zivot and Andrews)

Variable	Break	At level	1st Diff	Critical value	Remark
CORRUP	2005	-5.34	-10.86	-5.34	I(I)**
FISCALBAL	2014	-0.65	-5.34	-4.58	I(I)**
INF	1999	-5.34	-5.44	-4.93	I(I)**
INT	1996	-5.34	-4905	-4.93	I(I)**
OIL PRICE	2015	-3.39	-5.34	-4.93	I(I)**
RGDP	2014	0.76	-5.34	-4.93	I(I)**
TREVENUE	2004	-3.43	-5.34	-4.93	I(I)**
TROP	1998	-3.35	-5.34	-4.93	I(I)**
DEBTTOGDP	2005	-4.41	-5.34	-4.93	I(I)**
UNEMP	2020	-3.02	-3.730	-3.14	I(I)**

Source: REVIEW 10.0; Researcher's Computation (2022)

Note: i) * and ** Significant at 1% and 5% respectively, ii) The attached year(s) are the break years.

The result from the unit root test shows that virtually all the variables had a major structural shock. These include corruption (CORRUP) that experienced shock through government attention and institutional control mechanism through the establishment of Economic and Financial Crime Commission (EFCC) in 2002 for financial embezzlement and public officers corrupt tendencies and the establishment of the Independent Corrupt Practices Commission in 2000. Fiscal balance (FISCA BAL) received shocks in 2015 through the depletion of the Nigeria's excess crude account from $2.1 billion to $60 million.

The inflation rate was positively influenced by the performance of the monetary policy, following the enthronement of fiscal prudence by the nascent democratic government. The inflation rate, achieved a single-digit of 6.6 percent against the 9.0 percent target in 1999. Meanwhile, the interest rate received a shock in 1996 via the increase of the commercial bank's cash reserve requirement. The oil price of the brent, Nigeria's crude oil version received a shock in 2015 driven by supply factors, including booming U.S oil production, receding geopolitical concerns and shifting OPEC (Organization of Petroleum Exporting Countries) policies. Then, it also received a shock in 2020 as a result of the COVID-19 pandemic that caused a reduction in daily barrel production and drop in demand.

The Nigerian economy received a shock in 2014 following the GDP rebasement. The rebased GDP at 60 percent bigger than it had been pushed Nigeria ahead of South

Africa to become the continent's largest economy. Again, the Nigerian total revenue earned in 2004 received a shock. The total revenue was NGN3,920 billion out of which oil accounted for NGN3,354.8 billion and non-oil revenue was NGN2,438.8 billion while the Federally retained revenue was NGN1,253.6 billion. Actual expenditure was NGN1, 426.2 billion, made up of NGN1,032.7 billion expenditures and NGN351.3 capital spending. The fiscal operations of the Federal Government resulted in a current account surplus of NGN220.8 billion and an overall deficit of NGN172.6 trillion or 1.51percent of GDP. This deficit was financed through the non-bank public and draw down from the excess crude account. The shock followed the fiscal policy thrust of the 2004 budget designed to underpin and support the reform programme-accelerated privatization, liberalization and private sector development. Public sector reforms were to further reduce public sector expenditure on salaries and overheads encourage transparency and accountability through extractive industries transparency initiative that would make the oil, gas and solid minerals industries more transparent; simply the multiple taxes and levied faced by companies and possibly lower the company and personal income tax rates and bring Nigeria's tariffs in line with ECOWAS regional initiatives. The 2004 budget also continued with fiscal discipline through narrowing of the fiscal deficit to 2% of GDP, while financing the deficit from the domestic bond market (CBN, 2004). Similarly, the trade openness-the degree of openness of the Nigerian economy in the context of international trade equally received a short in 1998, within this period, a World Trade Organization (WTO) report on Nigeria's trade policies and practices states that political and institutional persist in Nigeria and that the weakening of the rule of law has discouraged foreign direct investment and trade flows outside the oil export sector.

The financial leverage of the economy (debt-to-GDP ratio) received a shock in 2005. In October 2005, Nigeria and the Paris club announced a financial agreement for debt relief worth $18 billion and an overall reduction of Nigeria's debt stock by $30 billion. The deal was completed on April 21, 2006, when Nigeria made its final payment and its book were cleared by any Paris club.

Co-integration Test

To evaluate the long-run relationship among the variables in the presence of a structural break, the Gregory-Hensen (G-H) Co-integration technique was adopted. The G-H Co-integration method is a non-linear co-integration procedure that accounts for structural breaks and allows co-integrating vectors to change at an unknown time period to capture the shifts in time series trends caused by policy changes. In adopting this method, the optimal length of the model needs to be established using various information criteria. Thus the optimal lag length of 2 is selected based on Schwarz Information Criterion (SIC). The results presented in table 3 shows the co-integration results of the model variables.

Table 3: Gregory and Hansen Structural Breaks Co-integration

ADF Procedure			
t-stat	-5.217*	-5.954*	-6.102*
Lag	2	2	11
Break Point	2004	2004	2004
Philips Procedure			
Za-test	-32.341*	-35.882*	-36.560*
Za-break	2004	2004	2004
Zt-stat	-5.209*	-5.814*	-6.009*
Zt-break	2004	2004	2004

Note: * denotes significance at 5% based on percentage points of the asymptotic distribution critical values as provided by Gregory and Hansen (1996).
Source: Researcher's Computation using Eview-10

The results presented in Table 3 reveal a long-run relationship between debt-to-GDP ratio and the control variables in Nigeria in the presence of structural break. Specifically, the augmented ADF, Z_t and Z_α test statistic exceed the critical value at the 5 percent level and 2004 is the observed breakpoint, which coincides with a coincides with fiscal discipline and narrowing the fiscal deficit to 2 percent of GDP and the financing of the deficit through domestic bond market.

The long-run relationship established through the Gregory and Hansen Structural Break Co integration is supported by the Johansen co integration test as shown in Table 4a and 4b.

Table 4a: Johansen Co-integration Test

Unrestricted co integration rank test (trace)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Trace Statistic**	**0.005 Critical Value**	**Prob***
None*	0.989447	517.0890	239.2354	0.0000
At Most 1*	0.972881	371.4458	197.3709	0.0000
At Most 2*	0.919106	256.0056	159.5297	0.0000
At Most 3*	0.818015	175.5380	125.6154	0.0000
At Most 4*	0.706504	121.0154	95.75366	0.0003
At Most 5*	0.631758	81.78691	69.81889	0.0041
At Most 6*	0.526946	49.81841	47.85613	0.0323
At Most 7	0.404550	25.86496	29.79707	0.1328
At Most 8	0.214956	9.274959	15.49471	0.3406
At Most 9	0.046702	1.530479	3.841466	0.2160

Trace test indicate 7 co-integrating eqn (s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level ** Mackinnon-Haug-Michelis (1999) P-values
Source: Researcher's Computation using Eview (10)

Table 4b: Johansen Co-integration Test

Unrestricted co-integration rank test (maximum eigenvalue)				
Hypothesized No. of CE(s)	**Eigenvalue**	**Max-Eigen Statistic**	**0.005 Critical Value**	**Prob***
None*	0.989447	145.6432	64.50472	0.0000
At Most 1*	0.972881	115.4402	58.43	0.0000
At Most 2*	0.919106	80.46758	52.36261	0.0000
At Most 3*	0.818015	54.52257	46.23142	0.0053
At Most 4*	0.706504	39.22850	40.07757	0.0621
At Most 5*	0.631758	31.96850	33.87687	0.0830
At Most 6*	0.526946	23.95345	27.58434	0.1364
At Most 7	0.404560	16.5900	21.13162	0.1923
At Most 8	0.214956	7.744481	14.26460	0.4053
At Most 9	0.046702	1.530479	3.841460	0.2160

Max-eigenvalue test indicates 4 co-integrating equ(s) at the 0.05 level * denotes rejection of the hypothesis at the 0.05 level **Mackinnon-Haug-Michelis (1999) p-values

Source: Researcher's Computation using EVIEW10

From the results of the trace statistic and maximum eigenvalue of the co-integration, there exist a long-run relationship between the dependent variables debt-to-GDP ratio and the explanatory variables of corruption, fiscal balance, inflation, interest (real), oil price, economic growth, total revenue and trade openness.

Optimal Lag Length Selection

The effects of regressors in dynamic models are known to spread over time and as such appropriate lag length for the variables is required. The vector autoregressive (VAR) lag order selection method is needed. The optimal lag length selected is based on final prediction (FPE), Akaike information criterion (AIC), likelihood ratio (LR), Hannan Quinn (HQ), and Schwarz criterion(SC).

Table 5: VAR lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1275.619	NA	3.73e+22	80.35117	80.80921	80.50300
1	-1061.655	280.8269	4.02e+19	73.22846	78.26692	74.89857
2	-850.5215	145.1545*	3.89e+17*	66.28259*	25.90148*	69.47098

Note: *Indicates lag order selected by the criteria

Source: Researcher's Computation using Eview 10

In table 5, the values asterisked indicate the lag selected by the criterion. The final prediction error, the likelihood ratio (LR) and others selected lag order 2. Since the selection criteria selected order 2, we estimate a SVAR model of K = 2. A confirmation of the VAR lag order selection criteria is presented in the VAR lag exclusion Wald tests

presented in Table 6.

SVAR Estimates

A major advantage of SVAR modeling is that it allows one to identify the effects of structural shocks, taking cognizance of the underlying economic theory, thereby making it possible to analyze the net effects of an unexpected change in one variable on other variables in the system. Given the structural factorization and the identifying restrictions imposed on the SVAR model.

Table 6 presents the coefficient estimates of the relationship that exists among the variables.

Table 6: Structural VAR estimates

	Coefficients	Std. Error	Z-statistic	Prob.
C(1)	0.002945	0.005055	0.582540	0.5602
C(2)	0.101733	0.042835	2.375010	0.0175
C(3)	0.888973	1.209084	0.735245	0.4622
C(4)	-0.447613	0.228462	-1.959242	0.0501
C(5)	1.268664	0.811252	1.563835	0.1179
C(6)	0.186071	1.490080	0.124873	0.9006
C(7)	9.607877	38.79011	0.247689	0.8044
C(8)	-1.734352	7.275408	-0.238386	0.8116
C(9)	-84.63488	24.43334	-3.463910	0.0005
C(10)	-4.551510	4.600773	-0.989292	0.3225
C(11)	1.438599	0.875171	1.643791	0.1002
C(12)	-17.10948	3.057988	-5.595011	0.0000
C(13)	-0.122896	0.033124	-3.710147	0.0002
C(14)	0.185604	0.132916	1.396397	0.1626
C(15)	-0.509358	0.593151	-0.858733	0.3905
C(16)	2.156763	0.269595	7.99999	0.0000
C(17)	0.061674	0.007709	7.99999	0.0000
C(18)	0.519857	0.064982	7.99999	0.0000
C(19)	13.52975	1.691219	7.99999	0.0000
C(20)	2.535188	0.316899	7.99999	0.0000
C(21)	8.506488	1.063311	7.99999	0.0000
Log Likelihood	-368.5801			

Source: Researcher's Computation using Eview 10.

From table 7, our primary interest is on the coefficients of C(I) through C(21). C(21) represents the impact of the shock including the COVID-19 pandemic on the debt-to-GDP ratio lagged by a period. From the table, the value 8.506 with the Z-statistic of 7.999 shows that the debt-to-GDP ratio responds positively and significantly to shocks from itself and that of the COVID-19 pandemic. The level of the difference between a government's revenue (taxes and proceeds from asset sales) and its expenditure as

proxy by fiscal balance (% of GDP) positively induced the level of debt-to-GDP ratio as presented by C(II) with a coefficient of 1.439 though not statistically significant conformed to a priori expectations.

Oil price (oil revenue) as designated as C(14) though with marginal impact on debt-to-GDP ratio by 0.186 with Z-statistic 1.396 are much volatile and dependent on international development. The oil price was seriously affected to a decline during the COVID-19 pandemic. Trade openness was also with marginal impact on debt-to-GDP ratio. Restriction on borders placed during the COVID-19 pandemic seriously affected Nigeria's trade relations with the rest of the world. To have a clearer picture of the nature of the relationships, the next discussions are on the impulse response function.

Analysis of the Impulse Response Functions (IRFs)

Impulse responses trace the responsiveness of the dependent variable in the SVAR to shocks from the other restricted variables. Thus, we analyzed changes in the debt-to-GDP ratio to shocks in the model using the IRFs technique. Table 4.7 depicts the combined structural responses of the debt-to-GDP ratio indicator to one standard deviation innovation to itself and other variables.

Table 7: The Responses of Debt-to-GDP Ratio to itself and other Variables

Period	CORRUP	DEBTTOGDP(-1)	FISCALBAL	INFL	INT	OIL PRICE	RGDP	TREVENU	TROP	UNEMP
1	0.000175	2.537831	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
2	-1.271098	2.937330	-0.227036	-4.446252	0.415362	-0.824	0.078	0.011	0.128228	-0.115374
3	-2.999006	2.353967	4.361969	-0.107519	1.786696	2.056	-5.069	-0.017	0.065298	-0.229786
4	-3.005010	3.789054	-1.008261	1.008261	-1.109096	-1.284	2.260	0.407	0.965337	0.140216
5	-2.226997	-0.868434	7.237477	0.553007	1.399687	-1.299	-3.594	-0.760	-0428172	-0.388142
6	8.216546	3.379426	7.062594	0.891216	0.325283	5.851	-5.831	0.798	0.668502	0.340278
7	-11.05060	-0.744958	-17.17535	-3.572934	-8.050263	-13.970	22.832	0.754	1.692836	0.964313
8	18.11479	-10.05198	34.71867	5.241033	11.40073	15.163	-33.821	-3.041	-5.084633	-1.513424
9	-0.345988	17.45624	-43.39811	-5.543128	-16.45987	-1.283	34.090	6.022	7.736461	3.894148
10	4.639921	-29.31245	-4.877704	-2.412516	1.784074	-35.449	17.791	-6.91	-6.102359	-2.481876

Cholesky: Ordinary: CORRUP DEBTTOGDP FISCALBAL INF OILPRICE RGDP TREVENUE TROP UNEMP

Source: Researcher's Computation using Eview 10.

The table shows that in period 7, the debt-to-GDP ratio is to a greater extent autoregressive with the highest value of 17.45624 among the contemporaneous variables in the model. However, this positive effect falls progressively as it declined into the past. The debilitating effect of fiscal balance on debt-to-GDP ratio is also evident as it oscillates between positive and negative with more of the latter. The responses of debt-to-GDP ratio to the level of inflation shock are positive and negative, oscillating between -5.543128 to 5.241033. These same oscillations are noticeable for oil price between -35.449 to 5.851 values. The responses of total revenue, trade openness and unemployment are negligible as most of the values fall between -6.1023 to 7.736461 and -2.4818 to 3.894.

Variance Decomposition Analysis (VDA)

Variance decomposition analysis (VDA) provides a tool for analyzing the relative importance of the independent variables in explaining the variation's in the dependent variable. Hence, after identifying the structural shocks, the VDA analysis shows what percentage of the forecast error variance for the debt-to-GDP ratio in the Nigeria economy is explained by the various shocks as represented by the included variables in the model. The result of VDA over a 10-year time horizon is summarily shown in Table 8

Table 8: Variance Decomposition of DEBTTOGDP and other Variables

Period	S.E	CORRUP	DEBTTOGDP (-1)	FISCALBAL	INFL	INT	OIL PRICE	RGDP	TREVENU	TROP	UNEMP
1	2.5378	4.74E.07	100.00000	0.00000	0.00000	0.0000	0.00000	0.00000	0.00000	0.00000	0.00000
2	4.2236	9.1427	84.469	0.28894	1.1163	0.967129	3.81342	0.0343	0.000793	0.092	0.07461
3	9.1971	12.5610	24.365	22.5546	0.2491	3.977924	5.8024	30.386	0.0005	0.0244	0.0781
4	10.5675	9.6215	31.3115	19.3112	1.099	4.114596	5.8724	27.590	0.149	0.8530	0.0768
5	13.8428	10.3195	18.6409	38.589	0.8000	3.420227	4.3038	22.821	0.389	0.5927	0.123380
6	18.1170	7.5357	14.36257	37.725	0.7090	2.02902	12.943	23.6830	0.421	0.4822	0.10730
7	35.5968	6.19218	3.201698	28.114	1.0131	4.7973	15.953	40.212	0.13109	0.29864	0.086064
8	66.985	4.7800	3.31485	36.197	0.9485	4.4894	10.420	38.843	0.249	0.6753	0.079620
9	92.6286	6.3242	5.28502	40.8800	0.854	5.50541	5.4688	33.859	0.553	1.0507	0.21837
10	105.6317	5.0560	11.76441	31.6488	0.7089	4.2619	15.467	28.872	0.854	1.1417	0.223127

Source: Researcher's Computation using E-View 10

It can be observed from the table that most of the variations in the forecast error of the debt-to-GDP ratio are explained (100%) by the shocks to itself over a 10-year period, thus decreasing and increasing. The second and third most influential determinants of the public debt (Debt-to-GDP) ratio are RGDP and fiscal balance (40). This explains the reason for the incentivizing of economic growth through monetary and fiscal policy measures. Total revenue, trade openness and unemployment influences on debt-to-

GDP ratio are insignificant from 0.000 to 0.85 for total revenue between 0.02 to 1.14 for trade openness and 0.07 to 0.22 respectively.

Table 9: Model Diagnostic Tests

	Test	**F-Statistic**	**Probability**
1	Normality Jarque-Bera Statistic	0.5617	0.75515
2	Serial Correlation Breusch -Godfrey Serial LM Test	0.461687	0.907472
3	Autoregressive Condition Heterosk elasticity ARCH LM Test	0.817894	0.605462
4	VAR Residual Normality	21.29342	0.3800

Source: Researcher's Computation using Eview10

From table 9, no heterroskedasticity or autocorrelation of residuals was found in the analyzed model. Autocorrelation LM Test rejects the null hypothesis that there is no serial correlation at a lag to at a significance level of less than 0.05. The white heteroskedasticity test uses elements similar to those of the autocorrelation LM test in determining the absence of heteroskedasticity, rejecting the null hypothesis also at a significance level of less than 0.05. Normality Test-Cholesky (Luckephol) was not applied to check the normal distribution of the residuals. As shown figure 1 and 2, neither the recursive residuals nor CUSUM of squares plots cross the 5 percent critical lines, therefore it can safely be concluded that the estimated parameters are relatively stable, well specified and robust for policy analysis.

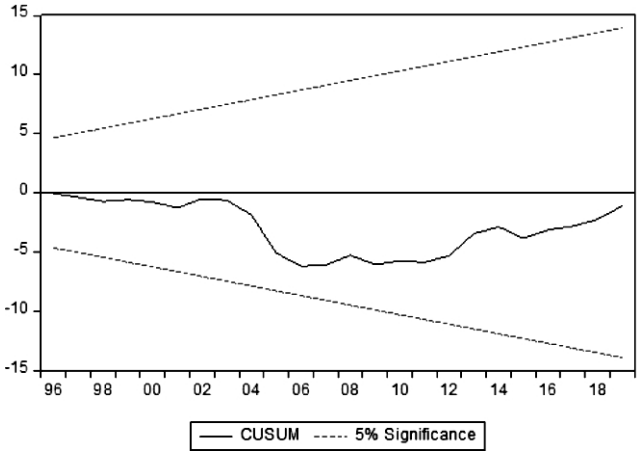
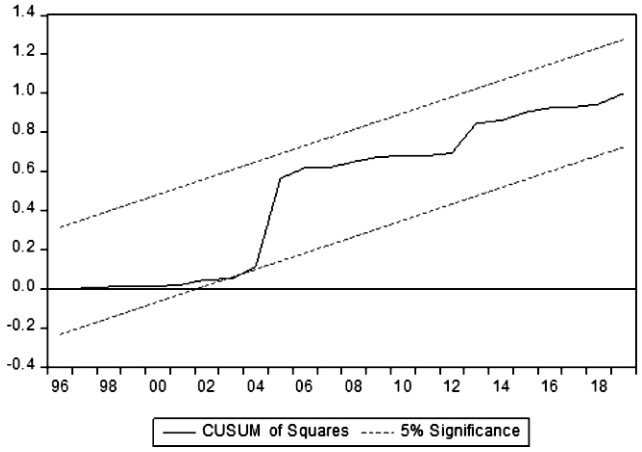


Figure 1: CUSUM Residual



In the final analysis, the regression results were presented to show the relationship between debt-to-GDP ratio and the explanatory variables of interest.

Conclusions and Economic Policy Implications

This study examined debt, taxation and financing for development in Nigeria for immediate response to global emergencies and efficient planning from 1986 to 2020 using the structural vector autoregressive (SVAR) approach. From SVAR estimates, the Z-statistic of 7.999 shows that the debt-to-GDP ratio responds positively and significantly to shocks from itself and that of the COVID-19 pandemic. The level of the difference between a government's revenue (taxes and proceeds from asset sales) and its expenditure as proxy by fiscal balance (% of GDP) positively induced the level of debt-to-GDP ratio with a coefficient of 1.439 though not statistically significant conformed to a priori expectations.

Oil price (oil revenue) though with marginal impact on debt-to-GDP ratio by 0.186 with Z-statistic 1.396 is much volatile and therefore has much effect on the debt-to-GDP ratio. The oil price was seriously affected to a decline during the COVID-19 pandemic. Trade openness was also with marginal impact on debt-to-GDP ratio. From the impulse response function and variance decomposition results, debt-to-GDP ratio shock and shock of other interested variables had an impact on public debt in Nigeria within the reviewing period. These imply that with appropriate support measures and policies and coordinate efforts, shocks including COVID-19 and global emergencies can be navigated by:

1. Keep trade open and refrain from imposing trade restrictions. Trade, transport and transit facilities should continue to operate without

restrictions, in line with the joint ministerial statement issued by seven World Trade Organizational members and the Dakar 2019 Consensus on Sustainable Debt Management.

2. Fiscal improvements that encourage domestic resource mobilization, efficient debt management strategies and reliance on domestic debt rather than external debt for increased development financing is needed
3. Public borrowing should strictly be for capital projects that have the capacity to create jobs only. Again, the policymakers should be exhibit high level of transparency in public expenditure (PEM) and procurement process.

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Chapter 7

Dimension of ICT and Changes in the Media: An Issue for Public Acceptance in Nigeria

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Abstract
The media must be acknowledged as a crucial tool for informing the public about obviously identified national goals and for informing them of their responsibilities, but the way the media has changed how society interacts with communication as a result of new technologies is now obvious. The objective of this paper is to examine the dimension of public acceptance of ICT in relation to media production and distribution. The study adopts and used secondary data that have direct bearing on ICT, the media and public acceptance. The findings revealed that the development of modernization and Information Technologies (IT) has greatly facilitated the job of media professionals in both the creation and packaging of media programs for the general audience. The study comes to a conclusion and makes the suggestion that media organizations equip their staff with sufficient and cutting-edge tools for gathering and reporting news. By doing this, they would be able to meet the demands of the news taste brought about by science, technology, education, and global cultural, political, and social development.

Keywords: *Media, Information, Communication, Technology, Public, Journalism.*

Background of the Study
With its cave painting, dance, and singing, media activities have existed from the beginning of humankind. In the 1770s, the industrial revolution had its start in England. It was built on innovations that could increase human physical strength when reduced to its bare essentials. The steam engine, which propelled transportation vehicles like trains and ships as well as producing machinery like mechanical looms, was one of the enabling technologies. A century later, the development of gasoline engines and electricity sparked a new wave of industrialization. Along with mass production, improving living standards, and urbanization, the industrial revolution

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was also marked by social unrest and environmental degradation. The information revolution is the current economic transformation we are seeing. This time, the limits of human brain capacity are being reached. Our capacity for memory, logical thinking, communication, sensory cognition, narrative, and interaction is improved by new technologies. This second revolution is even more fundamental than the first because human brainpower is a more fundamental trait than human muscle power. In essence, the media and innovative technologies are introducing new methods to convey ideas, sentiments, views, beliefs, and information, as well as novel approaches to discover the world, its characteristics, and the prospects. These services have improved global information flow and realized Marshal McLuhan's vision of the global village, in which one's neighbor is no longer the person who lives next to you. He would be in a far-off region of the hemisphere, apart from the other only by time and geography as well as by variations in language, culture, conventions, and values. Within a brief second, what occurs to those who are known by the other (Agba, 2002). ICT has improved the global neighborhood in terms of medially in communication and information dissemination across the globe. Information technology is any artifact that man manipulates to help him communicate personally, massively, and above all, promptly.

Technology has a profound impact on how we live, work, and create and consume media. Technology has always been the catalyst for major media advances for media companies. The publishing industry was founded by the printing press. The telegraph gave rise to the world's wireline networks. The music recording industry was started by the phonograph. Mass media has moved indoors thanks to TV displays and broadcast technology. In more recent times, media has seen a rapid transformation thanks to personal computers, cellular mobile networks, and the internet.

Statement of the Problem

The media must be acknowledged as a crucial tool for informing the public of their obligations and roles in achieving clearly defined national goals. Public interest is prioritized in media practice. It is the mechanism through which the public holds the government, institutions, organizations, and everyone else in power accountable. It means that people's thoughts, feelings, and the entire universe are influenced by the media's content. However, it is now obvious how the media, using new technology, have changed the character of communication experiences in society. The changing dynamics of applied technology in people's preferences and delivery has also impacted people's attitudes toward conventional media like television, music, radio, film, and print. The development of new IT has been met with interest as a young and rather enormous sector. It has sparked evaluations of the risk and possibilities of its native potential, Ukonu (2006). Investments in prospective ICT breakthroughs are difficult to justify in terms of traditional commercial ROI. They must be viewed as

purchasing options on potential future opportunities. Ideally, a relatively little investment with some downside risk can result in a significant reward. The issue with a breakthrough R&D approach is that it may either fall short of expectations or succeed technologically while still being too advanced in terms of complementing items and customer demand for the market.

Objective of the Study

Examine the dimension of public acceptance of ICT in relation to media production and distribution.

Research Methodology

The study adopts and used secondary sources of data with appropriate and practical resources that have undeviating links on ICT, the media and public acceptance. Textbooks, journals, periodicals, newspapers, and online resources are the resources explored.

Literature Review

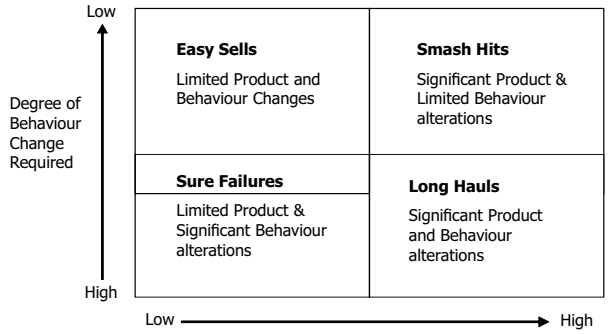
Technological Era and Media Activities

The introduction of computers significantly changed how media is produced today. For instance, several newspapers are implementing brand-new software to help with page layout on screens. Since correspondents have already done the key stroking and the story exists in electronic form, contemporary technology has assisted in removing the need for compositors to set typefaces. After this is complete, Ufuhu-Biri (2007) notes that the new editor will recall his video display terminals (VDT) computers and perform all formatting and editing there. The lithographic sections remember, finish, and carry out their tasks. Modern lithography and printing equipment is digitalized, which eliminates time wastage. In contrast to the earlier comparisons, the machine prints faster, collates, counts, and performs other essential finishing, additions, and color separation on digital equipment. Thus, print journalism has gotten less awkward and more engaging, thus it is understandable that Ufuhu-Biri (2007) would go back and point out that print media operations were complicated when early publishers employed manual guide printing machines. The media is one of many aspects of society that the ICTs are transforming. The strength of new technologies is currently driving a push toward new media, which is expanding the boundaries of media land. Considering this pattern, it is important to see how industries and industrial establishments have expanded through time have considerably encouraged the development and diversification of technology in numerous nations. High investments and competitions characterize the mass media. The contemporary media compete with one another as well. Online services, such as those for cable television, newspapers, and television, have been made easier by the internet. According to Dominick (2002), the internet has made it possible for people all over the

world to share communication at a faster rate.

The accomplishment of sustainable development depends on information and communication technologies. It serves as the means through which the public is organized, inspired, informed, educated, and persuaded. It is the method by which policy makers and practitioners communicate messages about development to the vast majority of people. The way the media were exploited has made attempts to use them to promote development ineffective. All forms of communication must have a clear aim and use the most widely accepted format in order to increase trust and guarantee plausibility. It is clear from the foregoing that communication involves activities like message development, production, transmission, and reception. the experience that both the source and the receiver have as a result. The evidence is abundant regarding the message's effectiveness, which can be reflected in terms of acceptability, credibility, and believability. The evolution of communication processes guarantees efficient and effective communication. The evolution is unquestionably made possible by new technologies that have expanded communication possibilities. Technologies are how humans employ the resources already available to them to fulfill their wants and requirements. Interest in the finest technology strategy to implement in order to outperform communication services is sparked by the demands and aspirations of the communication environment. People can now share knowledge with one another more quickly and easily, for instance. This is owing to the significant advancements in ICT, such as the usage of computers, telephones, and satellites, which enable individuals to freely and quickly exchange ideas. People have evolved to transmit and receive messages through communication. It is possible to communicate with one another via communication technology. Modern managers no longer travel vast distances; instead, they relax in their offices while actively participating in conferences and discussions around the world via satellite broadcast video.

The Dimension of Public Acceptance



Degree of Product Change Involved

The figure above is technological in nature. (Will it work?) and does not consider markets (will it sell and be profitable?). How can a company analyze the market for its innovations? In the first instance, it helps to look at demand and to organize innovations by consumer acceptance. For such categories are "easy sells" "sure failure" "long hauls" and "smash hits" they are ordered in a matrix whose two dimensions are product improvement (the horizontal axis), and the change required from the consumer (the vertical axis). Some innovations require a major behavior change and the others less so, but they may offer major improvements that could conceivable overcome this (Gourvill, 2006). Companies may create great new products, but this may not mean much if it requires major behavior change.

Easy sells: The product benefit improves slightly and only minor behavioral changes are needed. For illustration, upgrade from iPhone 7 to iPhone 8.

Sure failure: The invention offers few performance advantages but necessitates a large change in behavior. As an illustration, switching from the conventional QWERTY keyboard layout to the speedier Dvorak keyboard necessitates rediscovering the "muscle memory" of typing.

Long hauls: These advancements offer a technology advancement but necessitate a sizable behavioral adjustment. At least initially, adoption will be slow due to customer resistance to the change. Satellite radio is one illustration. Even the cellular phone took a while to become widely used (25) year to reach an 80 percent adult subscription). A corporation 's strategy plan will collapse if the product does not sell itself because it is overly enthusiastic about the adoption rates of the new product.

Smash hits: The invention produces significant benefits with only a small change in behavior. Google's search engine is a good example. Keeping up with the ICT industry's continuous speed of development is a daily problem for contemporary technology organizations, according to Bawa (2019). The ability to anticipate change and seize the chance to alter developing technology is essential for long-term success.

Journalism, GSM and Public Acceptance

Among today's media correspondents, the global mobile communication system is one of their most cherished possessions. The reporters would not need to rush for public phones like they would normally in order to send news back to base if they had these devices. It offers the advantages of mobility and time savings. Additionally, it offers GRPS and audio-visual services (MMS). GLO, MTN, AIRTEL, and other networks in the nation offer these services. Journalists frequently don't need a cyber café workplace to access the internet. The GSM video call displays the caller's audio

and video (journalist or reporter). With this, the correspondent can send the editor real-time updates on events as they happen as well as images via MMS. The 19th century's expanding network of railroads and the need for people to send messages prompted the development of the telegraph system. This device made it simple to send messages because they could be typed in or written offline and then recorded on a teleprinter. Its advantage over postal services is that it is quick and messages can be acknowledged right away. When faxing tales that are written on sheets of paper to the headquarters of their respective media companies, correspondents utilize fax machines, which are machines or devices with dialing buttons. Fax machines cannot function independently unless they are linked to a telephone line in the office or at the operator's residence. The most technologically sophisticated form of communication is the internet. Cross-border business, sports, politics, entertainment, and other efforts are made possible by this multi-media information superhighway. It is a technological revolution with enormous potential and boundaries. In actuality, the information revolution is what has made the world a small, interconnected village. It represents man's most successful attempt to shrink the actual earth. Journalism has become incredibly easy and engaging because to the internet. There are many media outlets online. As a result, print material can continue to circulate electronically across international borders.

As a result, the majority of print media organizations now have access to regional and national electronic circulation through online (net) access. Additionally, the internet has made it possible to read the daily newspapers online as early as 3 or 4 pm, before they are distributed at dawn. Newspapers now regularly and timely post news pieces with full details online. Once more, the majority of online publications have accepted e-commerce. Some publications use advertisements from partnerships with shops to receive a tiny percentage of each online sale. The internet has developed into a potent tool for editorial output and market research. Most usually, e-mails are used to acquire letters from publications on the internet, and stories are adopted while supplement the information from the local area, images are taken from the internet. The newspaper finds the internet to be particularly helpful for locating local stories when correspondents are not available. It also makes and downloads advertisement materials easily, much like broadband technology. The communication satellite functions by "unlinking" on earth stations to receive electronic signals from the ground and then retransmitting them through downlinks to other stations.

Theoretical Framework

McLuhan Theory

This study used McLuhan's technology determinism theory, which has two sub-theses, which are as follows:

1. We shape our tools, and those tools shape us in turn.

2. The advent of the global village and the electronic age. According to McLuhan's theory, technological and media inventions necessarily result in a change in culture.

This indicates that the evolution of communication methods shapes human existence. It also influences how people act, think, and approach problems. This indicates that the new ICT tools used in the media sector today are shaping the careers of media professionals. McLuhan obviously had the web of electronic networks in mind when he spoke of the global village. His research focused on the ad hoc connections between media technologies and culture. Even technological determinist theories that historical, economic, and cultural changes are the result of machine development were supported by historical data. Instantaneous global communication is currently changing society. The media are dealing more and more with a borderless world. Therefore, the precision information technology of the new world of digitalization has given rise to a level of real awareness in international relations that has never been seen before. According to Agba (2002), the internet's information superhighway is a stage of the creative industry where those who are unfamiliar with the new technology appear to be left with the idea of archival significance. Journalism in the twenty-first century implies that practitioners need to be prepared to accept the technology advancement of the contemporary society. They need to learn how to use each new technology properly. It implies that if not used properly, laptop computers, GSM smartphones, and even idiophones are useless. To instantly connect with everyone and everywhere, one must acquire the necessary skills.

Discussion of Findings

The results show that, as a result of the emergence and advancement of technology in the modern era, the world has become a global village. Media professionals now have an easier time doing their jobs thanks to advancements in modernization and information technology, which have also greatly aided in the creation and presentation of media programs for the general public. Thus, the use of these convergence products (ICTs) in the media sector has surely altered the performance of industrial operations in terms of product content circulation, aesthetics, the quality, and the number of employees. It has also given workers in the sector and those in other professions, such computer science and statistics among others, a professional advantage. The information superhighway, also known as the internet, demonstrates how media maturity in the twenty-first century has elevated journalism to a state-of-the-art profession, where newcomers to the technology appear to be abandoned at the feet of experts or consigned to the intellectual underworld due to either ignorance or ineffective adherence to the technological opportunities of the century. Information technology is not only a social force, but it is also changing the media landscape. The publishing process, including copywriting, reporting, editing, page creation, and

filming, has been impacted. Today's journalists can work more easily because to the internet and computers. One of the most important elements that has contributed to the notion that the world is a global village is the internet. Computers and other electronic devices, such as mobile phones, are connected through the use of telephone lines to transmit information. Any computer with an internet connection has a magic carpet-like screen. In a few minutes, it moves a newer without traveling an inch around the globe. Today, several print media use the internet to coordinate the actions of their reporters. Pages are even planned in some outposts and sent via the internet to the headquarters, where they are integrated into the upcoming newspapers. The majority of printed publications are generated everyday by particularly planned regional production. computers that can receive data via phone lines, microwaves, or satellites, after which the data is automatically printed. In terms of speed, inventiveness, and accuracy, the computer is at the very center of the convergence, and its introduction into the media sector has been a verifiable boom. The computer's ability to convert text, numbers, sound, and pictures into a digital form has allowed it to occupy this privileged position in the digital convergence. The use of ICTs in the media industry has altered how the sector operates, influenced the aesthetics of circulation, the content of broadcast products, and the caliber of workers in each ICT-driven establishment, as well as producing a new set of new careers. People from many professions have gotten to know one another because to the method. similar to those in electronic engineering, computer science, etc. It is a collaborative effort by experts from different sectors to share knowledge and resources in order to promote sustainable human development.

Conclusion and Recommendations

The gathering, processing, and dissemination of news and information are greatly impacted by the development of information and communication technology. As a result, the global trend has completely transformed the media landscape, and every media correspondent is working extremely hard to keep up with its rapid progression. This is the reason why media outlets are now doing away with the outdated method of disseminating news and information, making room for the news invention that has favorably impacted how media outlets operate. In order to fulfill the demands of the news taste created by science, technology, education, and the globalization of culture, politics, and society, media organizations should give their workers with adequate and cutting-edge instruments for gathering and reporting news. The media organization should also conduct conferences, workshops, and seminars to promote the usage of ICTs. The effectiveness and capacity of journalists in the ICT era will be enhanced through the use of this capacity building technique.

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Chapter 8

Health Equity Gap and Health Sector Development: Policy Options and Opportunities for Action

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Abstract
Health inequities are not natural phenomenon but rather the result of policy failure. They are thus avoidable by improving policy choices. This paper explored health equity gap and health sector development in Nigeria. The methodology adopted for this paper is the descriptive and expository approaches. The paper posited that researches in social determinant of health have shown that the disparity in health outcome within society and within countries do not arise by chance but by inequities. Furthermore, health systems are themselves important social determinants of health: they can reduce health inequities or make them worse. The fact that health is significantly determined by the social environment has profound implications for health policy far beyond the health sector. Therefore, it is recommended among others that since the health system are themselves important social determinants of health: they can reduce health inequities or make them worse. They do so not only through the way they provide health care but also by shaping wider societal norms and values.

Keywords: *Health equity gap, Health inequity, Health outcome, Health sector development, Policy options, Social determinants of health*

Introduction

Health inequities are unfair, available and remediable differences in health status between countries and between different groups of people within the same country. Health inequities are attracting increasing attention on natural and global policy agenda. The health equity gap is demonstrated glaringly by matching life expectancy

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at birth in different countries. A child's life expectancy depends on the place of birth-more than 80 years in Europe but less than 50 years in sub-Saharan Africa. Worldwide and within countries, the poorest groups have the higher rates of illness and premature mortality than the richer groups. The difference in health status between country's most privileged groups and its most advantageous group is called health equity gap. Health equity resonates with the sustainable Development Goals (SDGs) overarching principle of leading no one behind and the implicit moral imperative of social justice Health equity, as explained by the World Health Organization (WHO) Commission on Social Determinants of health is the absence of inequalities in health. The functioning of the health insurance market can be distorted by moral hazard, which is another type of informational asymmetry. This occurs if health insurance, by lowering the cost of health care, increases the rate of health care utilization and/or decreases the incentive to avoid bad outcomes. This is as insurance coverage tends to increase a person's health care utilization; this implies that insurance increases health care utilization conditional on health outcomes. Information asymmetry refers to the gap in knowledge between consumers and health care providers in terms of price and quality. This gap of interpreting performance metrics of healthcare professionals – physicians, nurses and pharmacist as well as other providers can be difficult when one party to a transaction has more and better information than the other party.

Health equity resonates with the Sustainable Development Goals (SDGs) overarching principle of leading no one behind and the implicit moral useful of social justice. Health equity, as described by the WHO Commission on Social Determinants of Health (CSDH), is the absence of inequalities in health that are avoidable by reasonable means. Health is universally valued, and health for all is a societal goal justifiable on moral grounds (Marmot and Bell, 2018). To achieve health equity requires action on the social determinant of health. Social determinant of health includes income/wealth, food nutrition, decent work, fair employment, health care, and aspects of the built and natural environment. Therefore, there is a strong crossover between the SDGs and social determinants of health on one hand and on the other hand between equity and health sector development. The social determinants of health are seen in every economy and across the various characteristics of the society. They include the conditions of early childhood and schooling, the nature of employment, gender inequality and the natural environment in which the people live. Depending on the characteristics of these environments, individual groups will have different experiences of material conditions, psychosocial support, security and life style options, which make them more or less vulnerable to poor health.

The way the health system organize funds and deliver healthcare can exacerbate or make worse social stratification in four major ways, namely: i) the degree to which

health system influences other sectors to address differential exposures and vulnerabilities which are then root cause of health differences, ii) the extent to which health system actively encourage and draw on social participation in decision-making at all levels, iii) the presence or absence of access barriers(such as the cost of seeking care , lack of information and inaccessible services), and particularly those that disproportionately affect women and other disadvantaged groups, iv) the extent to which loss of income due to illness and high out-of-pocket payments for health care are allowed to push poor people into poverty or worsen their existing poverty. The broad objectives of this analysis are therefore five-fold: First to present a discussion on health equity and health system development, two, to explain moral hazard and information asymmetry in relation to health system development, three, to explore the motivations and typologies of health sector reforms relevant to health system, and four, to account for the continuing inequalities and poor health outcomes in developing countries health systems including Nigeria. Five, is the conclusion which showcases the opportunities and actions for solving some of the challenges in health inequities. The approach adopted for this paper is descriptive and expository.

Inequity, Moral Hazard and Information Asymmetry

It is obvious and is now widely acceptable that equity differs significantly from equity. The World Health Organization documents used the term "equity in health" to refer to differences in health that are unnecessary, avoidable, unfair and unjust. Equity in health implies that ideally everyone should have a fair opportunity to attain their full health potential and, more pragmatically, that none should be disadvantaged from achieving this potential, if it can be avoided. The author further posited that equity is therefore concerned with creating equal opportunities for health, and with bringing health differentials down to the lowest level possible. Equity in health care can be conceived in terms of access, finance, expenditure and outcomes, and health policy has usually distinguished between horizontal and vertical equity. Table 2.1 presents the definition of equity in health policy. Horizontal equity general refers to the distribution of cost and benefits across groups of similar socioeconomic or health status; vertical equity refers to the distribution of costs and benefits across groups of differing status. The underlying assumptions are that unequal health outcomes are unjust, that health services should be provided (or guaranteed) socially; and that the distribution of costs and benefits should somehow be related health and wealth status. However, there is one exception the analysis in public health finance, equity is usually defined in terms of the ratio of payments to income. It is not necessarily defined as the ratio of payments to the consumption of health services. It is assumed that those who consume more health care are more ill and have greater need for health services. The goal of equity in health is to promote actualization of optional health for all. Equity in health, therefore, is concerned with providing and enhancing opportunities or all individuals to achieve their optional health given their potential.

As such opportunities tend to be more deprived and less available to the disadvantaged than the advantaged, the goal of equity in health is congruent with Rawl's maximum theory that maximizes the minimum position – that is, to give priority to the least advantaged in society (Chang, 2019).

It should be noted that equity in health is important but not necessarily the most important health care goal for all people. Again, better health does not always correspond with higher income. Thus, even a low income country can achieve a higher level of health by building healthy communities and adopting healthy policies and lifestyles. The social and economic determinants of health are important but not the most important factors that influence the health of a population. Health indicators empirically indicate an equal or unequal health status between individuals, communities and nations. Inequalities in health status, moreover, may point to inequalities in opportunities and barriers to working towards optimal health. Optimal health is conceived here as a state of complete physical and mental wellbeing and, as such, is a normative concept.

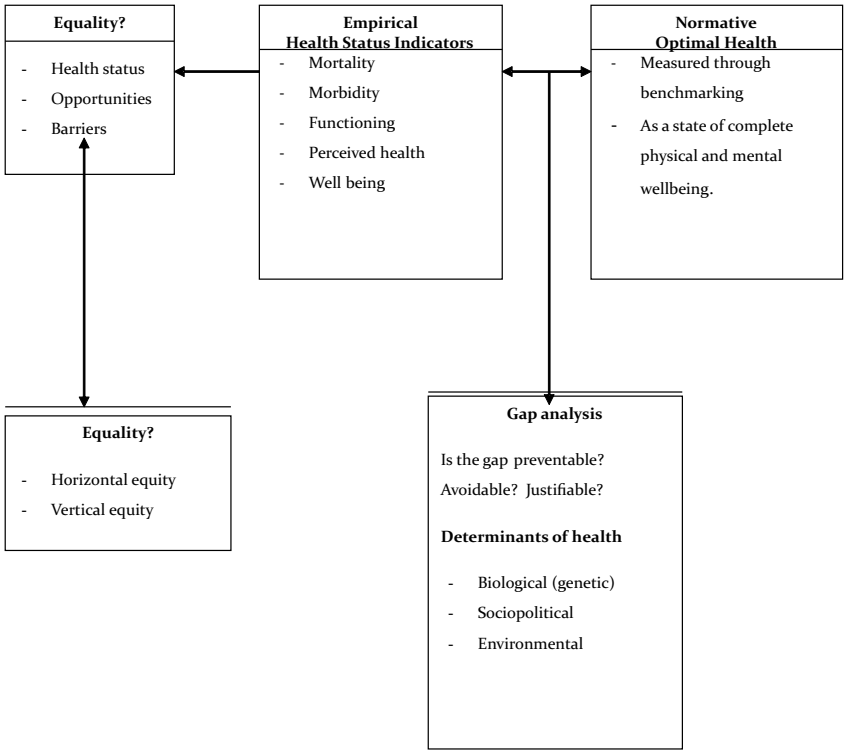
The root causes of health inequities are social, economic, environmental and structural disparities that contributes to intergroup differences in health outcomes both within and between groups. The most plausible explanations for income inequality's apparent effect on health and social problems is status anxiety. This suggests that income inequality is harmful because it places people in a hierarchy that increases status competition and causes stress, which leads to poor health and other negative outcomes. Many health problems in Nigeria are malaria, lower respiratory infections, HIV/AIDS, diarrheal diseases and road accident and protein-energy, malnutrition, cancer and meningitis, stroke and tuberculosis.

Table 1: Definition of Equity in Health Policy

Concept of Equity		
Dimensions of Equity	**Horizontal**	**Vertical**
Access	Those with similar needs have similar access to health services	Those with greater needs have access to more care or more intensive care
Finance	Those in equal socioeconomic positions pay the same for care.	Wealthier households pay more than do poorer households
Expenditure	Those in equal socioeconomic position or similar health receive the same value of publicly funded services.	Poorer households and households with more illness receive more than do wealth or healthier households.
Outcome	An household's experience regardless of socioeconomic status	Similar health outcomes.

Source: Lundberg and Wang (2014)

To verify whether inequalities in health are inequitable or not, it is necessary to perform a gap analysis to clarify whether the disparities between the observed and the optimally achievable health status are preventable, avoidable, or justifiable. This would require a close examination of various determinants of health – biological, social, political, historical, cultural and environmental in nature. The purpose of such an examination is to provide evidence for or against the existence of horizontal or vertical equipment. Figure 1 presents a framework for appraising equity in health. The empirically derived health status indicates from a basis of assessing equality in health. By contrast, equity in health is determined by analyzing gaps between observed health indicators and the normative measures of optimal health, the determinants, and their preventability and justifiability of such gaps and inequalities.



Source: WHO (2007)

Figure 1: The role of empirical and normative research in determining when inequalities in health are equitable

Moral hazard refers to the additional healthcare that is purchased when persons become insured. Conventionally, health economists regard these additional health care purchases as inefficient because they represent care that is worth less to consumers than it costs to produce. The common belief that health care payments need not be related to healthcare consumption presents a moral hazard on the part of the consumer. This can occur both ex ante and ex post. Ex ante moral hazard, that is occurring prior to the need for health care consumption, leads individuals to engage in riskier behavior than they would do if they were required to bear the total cost of the health care. Ex post moral hazard, that is, following the appearance of the need for health care consumption is manifest in the overall – consumption of healthcare services or, in other words, the consumption of services even when the benefits are less than the total social cost. Healthcare is different from other public goods and services, such as education, since greater consumption is not always beneficial. There exists a point beyond which the net social returns to more use of health services are negative.

Moral hazards can cause problems on the supply side of the health sector and may eventually disrupt the health sector development. For instance, doctors working under a fee – for – services regime have an incentive to provide more services than the patients would choose to receive if they had complete information. This situation is also known as supplier – induced demand. Fee – for – service reimbursement leads providers to increase the volume of services (Dusheeko *et al.*, 2003).

In economic theory, people are predicted to spend more on health because they are insured and buy more insurance because of the high cost of health care (Fieldsteein, 1973). This behavior may cause a moral hazard problem, which is one of the two main types of market failure often associated with asymmetric information in providing insurance. Ex-ante moral hazard predicts that people with insurance may take greater risks than they would without it, because they know they are protected (retrieved from https://www.economic.com). Ex-poste moral hazard concerns increased spending by an insured individual. Adverse selection is a second type of market failure that occurs when persons with poor health tend to choose insurance with high benefits and persons with good health tend to avoid such insurance because of its high cost (Mmarguis and Phelps, 1987). Selection based on privately known risk aversion can be advantageous if those who are more risk averse buy more insurance coverage and have lower risks. In other words, the direction of insurance selection that results when individuals have private information about multiple dimensions of relevant information is unclear (de Meza and Webb, 2001).

In developed countries much evidence suggests that health insurance may cause both moral hazard and adverse selection. Early theoretical studies on moral hazard were

conducted by Arrow (1963), Pauly (1968) – (1974), and Zeekhauser (1970). Contemporary studies include Dave and Kaestner (2006), Koc (2005) and Fang *et al* (2008).

Moral hazard arises from the asymmetric distribution of information. Asymmetric information causes, in addition to moral hazard, further problems in health care are generally observable. Moreover, the characteristics valued by the consumer of care are not necessarily related to the efficacy or medical quality of care. A patient might prefer a pleasant, but ineffectual doctor to an impolite, but effective one. In that case, the preferences of the patient and the public health authorities conflict. This is a situation where the interest of the principals (the patients and the public health authorities) differs from those of the agent (the provider) who is hired to supply the services. The principals want greater health; the agents may want that, too, but they also want to avoid working long hours for low pay. This leads to lower levels and quality of service than the principal would like. A good deal of research has gone into the design of incentives and payment schemes to minimize the difference between the interests of principal and agents, or at least, to reduce the loss of controlling the agency problem. Since the agent's behavior is expensive to monitor, the principal must design contract such that the provision of the services the principal wants is in the interest of the agent (Eggleston and Hsoh, 2004; Jack, 2001; 2001a).

The issue of 'dual practice' can cause induced demand, and hence reduce the effort and quality of dual doctor in their public sector jobs, and may make them to steal other resources from public facilities to benefit their private practices. On the other hand, dual practice can be a way for the public sector to retain skilled doctor of low wages and for the doctors to target public services more effectively to those who cannot pay privately (Bir and Egglaston, 2003; Ferrinho *et al.,* 2004; Gruen *et al.,* 2002). The provision of health insurance and prepayment systems may be rendered inefficient or unsustainable by the problem of adverse selection. This refers to the observation that those who expect to have high health costs are more likely to seek insurance. The problem for insurance arises because the insurer cannot sort (and price – discriminate among) consumers according to health risks (or rather, that screening and monitoring are expensive), and high-risk consumers drive – up the costs of care insurance.

Motivation and Typology of Health Sector Reforms

In principle, health sector policies in developing and developed countries have emphasized equity and focused on delivering services to the poor. Recent research has demonstrated the weak causality between public health policies and expenditures on the one hand and health services and outcomes on the other (Filmer *et al* 2000; World Development Report, 2004). More money is obviously not enough and may not be necessarily sufficient to achieve between health outcomes. The scope of the health

reforms implemented in development countries varies greatly. These reforms can be distinguished into two: the reforms affecting the supply side and those affecting the demand side of the health sector, that is, those involving the financing, management, and provision of services on the one hand and, on the other hand, those involving the demand for and consumption of services. In the supply side, the reform measures are governance, organization, management, provides payments, human resources, and such issues.

Health sector reform is a sustained process of fundamental change in policies and institutional arrangements of the health sector, usually guided by the government. The process keys down a set of policy measures covering the four main core functions of the health system vis-a-vis, governance, provision, and financing and resource generation. It is aimed at improving the functioning and performance of the health sector, and ultimately the health status of the population. Health sector reforms deals with equity, quality, financing, and sustainability in the provision of health care, and also in defining the priorities, refining the policies and reforming the institutions through which policies are implemented (WHO, 2000). Table 1 presents the types of health sector reforms.

Table 1: Types of Health Sector Reforms

Changes in financing methods	User charges Community financing schemes Insurance Stimulating private sector growth Increased resources to health sector
Changes in health system organization and management	Decentralization Contracting out of services Reviewing the public – private mix
Public sector reforms	Downsizing the public sector Productivity improvement Introduction of competition Improving geographic coverage Increasing role of local government Targeting role of public sector through packages of essential services.

Source: Shewade and Aggarwal (2012)

In order to achieve the population level performance goals, five control knobs have been identified namely; financing, payment, organization, regulation and behavior (Roberts *et al.*, 2004). Increase in efficiency, quality and access can be achieved by altering these control knobs leading to the ultimate population target of good health

status, consumer satisfaction and risk protection. According to Hsiao (2004), changes that affect at least two of those elements namely; health financing, expenditure, organization regulation and consumer behavior justify to be called as health sector reforms. Health financing refers to the mechanisms for raising the money that funds the activities in the sector. Payments or expenditure refers to the methods of transferring this money to the health care providers. These include budgets, fees and capitations. An organization refers to the mechanism affecting the mix of health care providers, their roles and how they operate within and among themselves. These mechanisms include measures leading to attraction in competition, decentralization and direct control of providers making up government service delivery. Regulation includes the use of coercive measures affecting the providers, insurance companies and patients. Behavior includes the efforts to influence the individual to act in relation to health and health care, including both patients and providers.

The developmental stages of health sector reform (i.e. the health sector reform process) are generally viewed as consisting of the following:
Stage 1: No reform
Stage 2: Health sector appraisal
Stage 3: Health sector plans
Stage 4: Achieving consensus
Stage 5: Funding
Stage 6: Implementation of reform agenda and
Stage 7: Actual implementation

WHO/AFRO (1999) characterized the health sector reform process and its stakeholders and also emphasized the following aspects of the process:

i. It is not a linear process
ii. All stakeholders have to be involved in the various phases of the process; and
iii. Monitoring, evaluation, continuing advocacy and consensus building are central to the process.

Inequalities and Health Outcome

Health inequalities are differences in health status or in the distribution of health resources between different population groups, arising from the social conditions in which people are born, grow, live, work and age. Health inequalities are unfair and could be reduced by the right mix of government policies. On the other hand, inequality refers to uneven distribution of health or health resources. Health inequality generically refers to differences in the health of individuals or groups. Any measurable aspect of health that varies across individuals or according to socially relevant groupings can be called a health inequality. The key distinction between the terms inequality and inequity is that the former is simply a dimensional description

employed wherever quantities are unequal while the latter requires passing a moral judgment that inequality is wrong.

There are close correlations between social inequality and mortality, infant over mortality, lower life expectancy, higher occurrence of mental illness, obesity, homicide, violence, use of illicit drugs, number of people in prisons, lack of trust in other people, teenage pregnancy and less social motility among others. There is ample evidence that social factors, including education, employment status, income level, gender and ethnicity have a marked influence on how healthy a person is. Health inequalities are systematic differences in the health status of different population groups. These inequalities have significant social and economic costs both to individuals and societies (WHO, 2015). Health outcomes measure a change in the health status of an individual or a group of individuals which can be attributed to intervention.

Conclusion and Policy Options

This paper has explored descriptively and expository health equity gap and health sector development. Some of the relevant issues analyzed are health equity gap, moral hazard, and information asymmetry and health inequity and social determinants of health. These issues are very critical in understanding sector the Nigerian health sector development. The following key messages drive the points raised:

I) Disparities in health do not arise by chance. Accordingly, social factors, which can be changed and controlled by policy, are largely responsible for the differences in the health outcomes in different populations and groups

ii) Lack of policies or regulatory framework for action heightens inequities in the distribution of goods, opportunities and rights.

iii) The fact that health is significantly determined by the social environment has profound implications for policy far beyond the health sector

iv) Universal health coverage is achieved when effective health services are available for all (Health for All), when they are accessible without financial barriers, and when users are protected from the financial consequences of using health services, and

v) Gender inequity is one of the most influential social determinants of health. Women and girls in many settings face discrimination, increased exposure to diseases and public service which do not adequately meet their needs. This situation damages the physical and mental health of vast number of girls and women worldwide.

The policy options are as follows:

i. Health sector: Health system are themselves important social determinants of health: they can reduce health inequities or make them worse. They do so not

only through the way they provide health care but also by shaping wider societal norms and values.

ii. At levels of national income, steps can be taken towards universal coverage that will improve health outcomes and health equity. Steps include: i) advocacy for and mobilization for increased public funding for health care, ii) reduction of out-of-pocket health payments where possible, by removing public sector user fees; iii) by improving co ordinations between levels of care, iv) re-allocate government resources between geographical areas, taking account of population health needs and all available funding sources, v) address technical efficiency, especially in relation to pharmaceutical.

iii. Disaggregating data in health and other sectors by income, education, ethnicity, sex occupation and place of residence is an important prerequisite for understanding the social pattern of diseases or condition within a population

iv. Participatory processes to mobilize individual, households, communities, and informal and formal organizations are indispensable for addressing the social determinants of health.

v. Action to support inter-sectoral action includes tailoring advocacy messages to particular sectors, establishing organizational arrangements that promote cooperation across sectors, and institutionalizing health equity goals.

vi. Actions in all areas of government policy affect health. Policies in areas as diverse as trade policy and the urban environment have important implications for health.

vii. Careful application and implementation of trade liberalization policies together with strengthened economic, labour and social protection policies can mitigate sources of the potential negative effects of increased global market integration on health and health system.

viii. Improving girls' and women's educational and economic opportunities will not only improve health outcomes but will also lead to other benefits such as raised productivity.

ix. An alternative approach is for policy to address exclusionary processes, rather than the excluded groups, thereby directing attention to the root causes of social problems.

x. Actions to address the social determinants of health are generally more effective where such engagement with civil society has taken place, with adequate resources.

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Chapter 9

Navigating Uncertainty: Innovative Inventory Management Strategies For Entrepreneurs.

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Abstract
In today's rapidly evolving business landscape, uncertainty presents a significant challenge for entrepreneurs, particularly in inventory management. Small and medium-sized enterprises (SMEs) often struggle with disruptions caused by economic fluctuations, supply chain inefficiencies, and shifting consumer demands, leading to stockouts, overstocking, and cash flow constraints. Traditional inventory management methods frequently fail to provide the agility required to navigate these challenges effectively. This study explores innovative inventory management strategies, including just-in-time (JIT) systems, demand forecasting, and technology-driven solutions such as artificial intelligence (AI) and blockchain. These approaches enhance supply chain visibility, optimize stock levels, and improve operational efficiency. Additionally, collaborative supplier relationships and dynamic inventory models play a crucial role in fostering business resilience. Entrepreneurs, particularly in volatile markets like Nigeria, must embrace adaptive inventory strategies to mitigate risks and maintain sustainability. The findings highlight the importance of integrating digital tools and strategic planning to enhance business continuity amid uncertainty. By implementing forward-thinking inventory management techniques, entrepreneurs can better respond to disruptions, minimize financial risks, and drive long-term growth in an increasingly unpredictable economic environment.

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Keywords: inventory management, uncertainty, small and medium-sized enterprises (SMEs), supply chain, technology-driven solutions, business resilience

Introduction

In today's rapidly evolving business environment, uncertainty has become a constant challenge for entrepreneurs. According to a recent global survey, 85% of small businesses reported experiencing significant disruptions in their supply chains over the past five years due to unforeseen events, including economic downturns, geopolitical instability, and global pandemics (Smith & Reuben, 2022). This unpredictable landscape leaves many entrepreneurs grappling with how to maintain operational efficiency while managing the volatility of their inventory systems. For small and medium-sized enterprises (SMEs), which often operate with limited resources, the stakes are even higher: poor inventory management can lead to stock outs, overstocking, and cash flow problems, ultimately jeopardizing their survival (Kumar & Singh, 2021). In today's rapidly changing business environment, entrepreneurs face increasing uncertainties due to market fluctuations, supply chain disruptions, and evolving consumer demands. Traditional inventory management approaches often fall short in providing the agility and responsiveness needed to navigate these challenges effectively (Christopher & Holweg, 2022). The COVID-19 pandemic and recent global supply chain crises have underscored the importance of adaptive and technology-driven inventory strategies in ensuring business continuity (Ivanov & Dolgui, 2021).

Innovative inventory management strategies—such as demand forecasting, just-in-time (JIT) systems, and AI-driven inventory optimization—enable businesses to maintain optimal stock levels, reduce holding costs, and improve cash flow (Tang & Veelenturf, 2019). Furthermore, integrating digital solutions like blockchain and real-time tracking enhances supply chain visibility and mitigates risks associated with stockouts or overstocking (Schniederjans et al., 2020). For entrepreneurs, particularly in volatile markets like Nigeria, where infrastructure deficits and logistical inefficiencies pose significant challenges, adopting innovative inventory management practices is not just a competitive advantage but a necessity for survival (Adebayo et al., 2021). These strategies empower businesses to respond proactively to disruptions, maintain customer satisfaction, and achieve long-term sustainability. By exploring and implementing cutting-edge inventory management solutions, entrepreneurs can build resilient businesses capable of adapting to uncertainty,

minimizing risks, and driving sustainable growth in an increasingly unpredictable economic landscape.

Purpose of the Chapter

The purpose of the chapter is as summarized below

i. **Examine the Importance of Innovative Inventory Management:** Analyze why traditional inventory management techniques are insufficient in today's unpredictable business environment.
ii. **Explore Just-in-Time (JIT) Inventory Systems:** Investigate how JIT can minimize waste, reduce costs, and improve operational efficiency.
iii. **Analyze the Role of Demand Forecasting and Data Analytics:** Discuss how data-driven decision-making helps entrepreneurs predict market fluctuations and optimize inventory levels.
iv. **Assess the Impact of Technology-Driven Solutions:** Explore how cloud-based inventory management platforms, artificial intelligence, and real-time tracking enhance supply chain visibility and efficiency.
v. **Evaluate Dynamic Inventory Models:** Examine how flexible inventory models allow businesses to adapt quickly to changing market conditions and demand patterns.
vi. **Highlight the Importance of Collaborative Supplier Relationships:** Investigate how strategic partnerships with suppliers improve supply chain resilience and responsiveness.
vii. **Provide Practical Strategies for Entrepreneurs:** Offer actionable insights and real-world examples to help entrepreneurs implement effective inventory management techniques.
viii. **Demonstrate How Inventory Management Drives Business Resilience and Growth:** Show how forward-thinking inventory strategies can help businesses navigate uncertainty, reduce risk, and achieve long-term success.

Understanding the Impact of Uncertainty on Inventory Management

Defining Uncertainty in Business

Uncertainty in business refers to the inability to predict or control external factors that influence an organization's operations and outcomes. For entrepreneurs, uncertainty is a pervasive reality that can arise from various sources such as market fluctuations, supply chain disruptions, and economic instability (Knight, 1921). Unlike risk, which can be measured and quantified, uncertainty often lacks a clear probability of outcomes, making it much harder to manage. According to Knight's theory of

uncertainty, entrepreneurs must make decisions in the absence of complete information, meaning they frequently navigate unpredictable market forces and volatile supply chains.

Market fluctuations, for example, can result in sudden shifts in customer demand, making it challenging for businesses to maintain optimal inventory levels. A market that is stable today might face disruptions tomorrow due to changes in consumer preferences, geopolitical tensions, or global crises such as pandemics (Bennett & Lemoine, 2014). Similarly, supply chain disruptions, whether caused by natural disasters, transportation delays, or regulatory changes, can lead to inventory shortages or overstocking. For small and medium-sized enterprises (SMEs), which often lack the financial cushioning of large corporations, these disruptions can have a severe impact on operational efficiency and cash flow (Hendricks & Singhal, 2014). Economic instability, which can stem from currency fluctuations, inflation, or changes in government policies, further compounds uncertainty by affecting the cost of goods and availability of resources. Entrepreneurs must constantly adjust their inventory strategies to account for these shifts, often with little or no warning. In this context, understanding uncertainty becomes critical to developing resilient and adaptive inventory management systems.

Challenges for Entrepreneurs

Entrepreneurs face a range of specific challenges in managing inventory under uncertain conditions. One of the most pressing issues is the need to balance cash flow against fluctuating demand. Maintaining too much inventory ties up capital in unsold goods, reducing the liquidity needed to cover operational costs and invest in growth opportunities. On the other hand, holding too little inventory increases the risk of stock outs, which can lead to lost sales and damage to customer relationships (Ding et al., 2013). In a rapidly changing market, demand forecasting becomes particularly difficult. Entrepreneurs must rely on historical data, market trends, and sometimes instinct to predict customer needs. However, when uncertainty looms, these predictions are often less reliable, leading to either excess inventory or shortages (Fisher, Raman, & McClelland, 2000). For example, during the COVID-19 pandemic, many businesses struggled to anticipate demand spikes for essential goods, while others found themselves with unsold products as consumer behaviour shifted unexpectedly (Ivanov, 2020).

Another significant challenge is the need to minimize risk without compromising operational efficiency. Entrepreneurs must develop strategies that allow them to respond swiftly to changes in the market or supply chain. This requires flexible inventory systems that can adapt to fluctuating conditions while keeping costs in check (Simchi-Levi et al., 2014). Furthermore, entrepreneurs often operate in resource-constrained environments, which limits their ability to invest in advanced technologies or large stock reserves that could buffer against uncertainty (Jüttner & Maklan, 2011).

The combination of these challenges underscores the importance of innovative inventory management strategies that not only address the unpredictability of the market but also enhance the entrepreneur's ability to maintain business continuity and growth. By understanding and adapting to the forces of uncertainty, entrepreneurs can better position themselves to thrive in volatile environments.

Key Inventory Management Strategies for Navigating Uncertainty

In the face of uncertainty, entrepreneurs must adopt inventory management strategies that are flexible, adaptive, and capable of mitigating risks while ensuring operational efficiency. The ability to manage inventory effectively becomes critical when market fluctuations, supply chain disruptions, and demand volatility are at play. The following strategies highlight innovative approaches to inventory management that enable entrepreneurs to navigate these challenges and maintain business continuity.

Agile Inventory Management

Agility as a Core Strategy: Agile inventory management refers to the ability of businesses to swiftly respond to changes in market conditions and supply chain dynamics. In an unpredictable business environment, agility is essential for entrepreneurs who need to adjust to fluctuations in demand, supply disruptions, and evolving customer preferences (Christopher, 2000). Agility enables firms to operate with greater flexibility, allowing them to shift resources, production schedules, and inventory levels as needed to meet changing conditions. For entrepreneurs, adopting an agile inventory management approach involves building systems that allow for rapid adjustments without incurring high costs or inefficiencies. Agility is particularly valuable when dealing with volatile markets, as it helps businesses avoid the pitfalls of overstocking or understocking, which can severely affect cash flow and customer satisfaction (Swafford, Ghosh, & Murthy, 2006).

Implementing Agility

Entrepreneurs can implement agile inventory management through several practical steps:

i. **Flexible Supply Chains**: Establishing relationships with multiple suppliers or developing partnerships that provide flexibility in terms of lead times and order quantities can reduce the impact of disruptions (Lee, Padmanabhan, & Whang, 1997).

ii. **Adaptable Ordering Processes**: Businesses should adopt ordering processes that allow for adjustments in response to demand shifts. This includes using technology that supports automated reordering based on real-time data (Hendricks & Singhal, 2009).

iii. **Real-Time Inventory Tracking**: Implementing systems that provide real-time insights into inventory levels and product movement can enhance decision-making and enable faster response times when conditions change (Pettit, Fiksel, & Croxton, 2010).

Just-In-Case (JIC) vs. Just-In-Time (JIT) Inventory

The JIC Approach: The Just-In-Case (JIC) inventory strategy involves maintaining a buffer stock to safeguard against unexpected disruptions in the supply chain or sudden spikes in demand. This approach helps businesses ensure the availability of products even during uncertain times, preventing stock outs that could result in lost sales and customer dissatisfaction (Chopra & Sodhi, 2004). For entrepreneurs operating in volatile environments, the JIC strategy offers a cushion that can absorb shocks to the system, whether they stem from supplier delays, production issues, or transportation bottlenecks. However, while JIC can provide a sense of security, it also ties up capital in inventory that may not move quickly, potentially leading to higher storage costs and increased risks of obsolescence (Cachon & Terwiesch, 2006).

Balancing JIC and JIT: The Just-In-Time (JIT) approach, in contrast, minimizes inventory levels by aligning stock with actual demand, reducing holding costs and increasing operational efficiency. JIT allows businesses to operate with minimal inventory, ordering goods only when they are needed (Toyota Production System, 1988). While JIT offers clear cost advantages, it leaves businesses vulnerable to supply chain disruptions, as there is little to no buffer stock to fall back on in case of delays. Entrepreneurs must strike a balance between JIC and JIT, especially in uncertain markets. A hybrid approach can be particularly effective, where JIT is employed for

predictable demand items while JIC is reserved for critical or volatile products (Simchi-Levi, Kaminsky, & Simchi-Levi, 2003). This allows businesses to optimize inventory while maintaining a level of protection against supply chain disruptions.

Demand Forecasting in Volatile Markets

Data-Driven Forecasting: In uncertain business environments, accurate demand forecasting becomes a key element of effective inventory management. Entrepreneurs can leverage advanced data analytics, machine learning algorithms, and predictive tools to enhance their forecasting capabilities. Data-driven forecasting allows businesses to analyse historical trends, customer behaviours, and external factors such as market shifts or economic conditions to predict demand more accurately (Lapide, 2006). By integrating real-time data from sales, marketing, and external sources, businesses can refine their forecasts and adjust inventory levels accordingly (Choi, Narasimhan, & Kim, 2012).

Scenario Planning: Scenario planning involves preparing for different potential market conditions and their impacts on inventory. Entrepreneurs can create various scenarios—such as a surge in demand, a supply chain breakdown, or a price increase in raw materials—and develop strategies for each situation (Schoemaker, 1995). This method allows entrepreneurs to be proactive, ensuring that they have contingency plans in place and can quickly adapt their inventory strategies in response to unfolding events.

Inventory Outsourcing and Vendor-Managed Inventory (VMI)

Leveraging Third-Party Expertise: Inventory outsourcing involves entrusting inventory management to third-party service providers who specialize in supply chain logistics. This strategy reduces the burden of managing inventory in-house, allowing entrepreneurs to focus on core business activities (Barratt & Oke, 2007). Outsourcing providers often have advanced systems for tracking, storing, and distributing products, which can help mitigate risks associated with uncertainty.

Vendor-Managed Inventory (VMI): Vendor-Managed Inventory (VMI) is a system in which suppliers take responsibility for managing their customers' inventory levels. VMI allows entrepreneurs to outsource the complexity of inventory management to suppliers, who use their expertise and data to maintain optimal stock levels (Waller, Johnson, & Davis, 1999). This arrangement benefits both parties: suppliers have more

control over their product distribution, and businesses can focus on their operations without the stress of inventory management.

Benefits for Small Enterprises: For small businesses, VMI and inventory outsourcing can provide critical advantages, including lower operational costs, reduced risk of stock outs, and improved supply chain efficiency. These strategies allow entrepreneurs to maintain lean operations while still benefiting from sophisticated inventory management techniques (Disney & Towill, 2003).

Risk Mitigation and Contingency Planning: Inventory risk mitigation and contingency planning are essential strategies for entrepreneurs operating in unpredictable environments. These approaches help businesses maintain stability, adapt to disruptions, and safeguard operational continuity. By assessing potential risks and developing robust contingency plans, entrepreneurs can better navigate the uncertainties of inventory management and prevent significant financial or operational damage.

Inventory Risk Assessment

Identifying Potential Inventory Risks: Inventory risk assessment is the first step in managing uncertainties that can disrupt supply chains. Entrepreneurs must understand various risk factors that could impact their inventory management processes, such as supplier delays, market downturns, shifts in consumer demand, and external shocks like natural disasters or political instability. For instance, supplier delays, particularly for businesses reliant on a single supplier, can halt production, lead to stock outs, and affect customer satisfaction (Christopher & Peck, 2004). Entrepreneurs should also evaluate risks based on internal vulnerabilities, including poor demand forecasting or inefficient inventory tracking systems, which can result in overstocking or stock outs (Tang, 2006). Furthermore, global events such as pandemics or geopolitical conflicts can introduce additional uncertainty into supply chains, making it vital for businesses to conduct comprehensive risk assessments (Ivanov & Dolgui, 2020).

Assessing the Impact of Risks: Once potential risks are identified, entrepreneurs must evaluate the likelihood and potential impact of these risks on their business. This involves analysing the frequency of certain risks (e.g., recurring supplier delays) and assessing their potential impact on operational costs, customer relationships, and

profitability. For example, a delay in receiving critical raw materials can halt production for days, leading to a backlog of orders and lost sales (Tomlin, 2006). By assessing these risks, entrepreneurs can prioritize actions and resources to mitigate the most damaging outcomes.

Risk Prioritization and Ranking: Entrepreneurs should prioritize risks based on their potential severity and the likelihood of occurrence. A structured risk prioritization process allows entrepreneurs to allocate resources effectively and focus on high-impact risks. For example, risks with high severity but low probability (such as natural disasters) may require contingency plans, while high-probability risks (like fluctuating customer demand) should prompt immediate action to build resilience (Zsidisin, Panelli, & Upton, 2000).

Developing Contingency Plans

Importance of Contingency Planning: Contingency planning is crucial for managing inventory risks effectively. Entrepreneurs must develop well-defined strategies that enable them to respond promptly to disruptions and minimize their impact on operations. These plans should include provisions for alternative suppliers, stockpiling of essential inventory items, and maintaining financial reserves. The goal of a contingency plan is to ensure business continuity and minimize disruptions in inventory availability (Stevenson & Sum, 2009).

Steps for Developing Effective Contingency Plans

Identifying Alternative Suppliers: A key component of any contingency plan is securing multiple suppliers. Entrepreneurs should avoid over-reliance on a single supplier by diversifying their supplier base. This ensures that, in the event of supplier failure or delays, alternative suppliers can provide the necessary materials or products. Entrepreneurs should maintain strong relationships with these secondary suppliers, ensuring they can be called upon during times of disruption (Wagner & Bode, 2008). For example, a business reliant on international suppliers should identify domestic suppliers as backup options to avoid disruptions due to trade barriers or transportation delays.

Stockpiling Critical Inventory Items: Another strategy for mitigating inventory risk is to stockpile critical items, especially those that are vital to production or have long lead times. Entrepreneurs should create a buffer stock of high-demand or high-risk

items to ensure continued operations during supplier disruptions. However, stockpiling requires a delicate balance; too much inventory can tie up capital and increase storage costs, while too little can lead to stock outs during critical periods (Chopra & Meindl, 2013). Entrepreneurs should use demand forecasting tools to determine optimal stockpile levels, considering factors like product perishability and storage capacity (Tang, 2006).

Financial Reserves for Inventory Emergencies: A strong financial contingency plan includes setting aside financial reserves to address unexpected inventory challenges. These reserves can be used to cover increased transportation costs, emergency purchases, or the cost of securing alternative suppliers. Maintaining sufficient liquidity ensures that businesses can react quickly to disruptions without severely impacting their cash flow or profitability (Knemeyer, Zinn, & Eroglu, 2009). Entrepreneurs should regularly review and adjust their financial reserves based on their current risk profile and market conditions.

Leveraging Technology for Contingency Planning: Entrepreneurs can enhance their contingency planning by leveraging technology to monitor risks and maintain real-time visibility of their inventory. Tools such as inventory management software, demand forecasting systems, and supply chain analytics can provide early warnings of potential disruptions and help businesses adjust their inventory levels accordingly (Sodhi & Tang, 2012). Additionally, automated inventory systems can assist in tracking stock levels, reordering supplies, and monitoring supplier performance to mitigate risks proactively.

Scenario Planning for Inventory Disruptions: Scenario planning is a valuable tool in the development of contingency plans. Entrepreneurs should create multiple "what-if" scenarios that explore different risk events and outline corresponding responses. For example, a scenario plan might include a sudden spike in demand, a supplier bankruptcy, or a transportation strike. For each scenario, entrepreneurs can design a detailed response plan, including alternative supply chains, adjustments to inventory levels, and financial considerations (Schoemaker, 1995). Scenario planning allows entrepreneurs to remain agile and prepared for a wide range of disruptions.

i. **Benefits of Contingency Planning**: By investing time and resources in contingency planning, entrepreneurs can enhance the resilience of their inventory management systems. Contingency planning helps to:

ii. **Minimize Disruptions**: A well-prepared contingency plan can prevent small disruptions from escalating into significant operational challenges. For example, maintaining a list of alternative suppliers ensures that entrepreneurs can quickly pivot when a primary supplier fails (Peck, 2005).
iii. **Optimize Inventory Levels**: Stockpiling critical items and employing demand forecasting tools can help entrepreneurs maintain optimal inventory levels, balancing the need for resilience with cost efficiency (Tomlin, 2006).
iv. **Maintain Customer Satisfaction**: By avoiding stock outs and ensuring the timely delivery of products, businesses can maintain strong customer relationships and avoid losing market share to competitors during disruptions (Tang, 2006).
v. **Risk Mitigation and Contingency Planning:** In the context of entrepreneurship, risk is an inherent part of inventory management, particularly in volatile markets. Entrepreneurs must be proactive in identifying, assessing, and mitigating risks associated with their inventory systems to ensure business continuity. By adopting robust risk mitigation strategies and developing contingency plans, entrepreneurs can better navigate uncertainty, reduce disruptions, and maintain operational efficiency.

Inventory Risk Assessment

Understanding Inventory Risks

Risk in inventory management arises from various factors, including supplier delays, market downturns, demand fluctuations, and natural disasters. For entrepreneurs, these risks can lead to stock outs, excess inventory, and increased operational costs. Assessing these risks is critical for minimizing potential impacts and preparing for unexpected disruptions (Christopher & Peck, 2004). Inventory risk assessment involves systematically identifying potential vulnerabilities in the supply chain and evaluating the likelihood and severity of those risks. Entrepreneurs must consider internal and external factors that may affect inventory availability, such as dependency on key suppliers, transportation reliability, economic instability, and changes in consumer demand (Sheffi, 2005).

Steps in Risk Assessment

i. **Identifying Potential Risks**: Entrepreneurs should start by identifying all potential risks that could impact their inventory, both short-term and long-

term. These risks may include supplier insolvency, geopolitical issues, economic recessions, and technological failures (Norrman & Jansson, 2004).

ii. **Evaluating Risk Impact**: Once risks are identified, the next step is to assess their potential impact on the business. This includes analysing how a specific risk could affect inventory levels, cash flow, and customer satisfaction (Tang, 2006).

iii. **Prioritizing Risks**: Entrepreneurs should prioritize risks based on their likelihood and potential severity. This process helps to focus attention on the most critical risks that require immediate action (Wagner & Bode, 2008).

iv. **Supplier-Related Risks**: A significant risk in inventory management is supplier-related issues, including delays, quality problems, or supply chain disruptions. Entrepreneurs must evaluate their suppliers' reliability, financial stability, and geographic location to assess the risk of potential delays or failures (Zsidisin, Ellram, Carter, & Cavinato, 2004). For instance, reliance on a single supplier increases vulnerability, while diversifying the supplier base can reduce risk.

v. **Market and Demand Risks**: Market volatility and shifts in customer preferences can also introduce uncertainty into inventory management. Entrepreneurs need to assess how changes in the economy, competition, or consumer behaviour could affect demand for their products. Overestimating demand may lead to excess inventory, while underestimating demand could result in stock outs and lost sales (Chopra & Sodhi, 2004).

Developing Contingency Plans

The Importance of Contingency Planning

Contingency planning is essential for mitigating risks in inventory management. A contingency plan outlines the steps an entrepreneur should take to manage inventory disruptions and ensure business continuity. Without a contingency plan, businesses are vulnerable to severe impacts during unexpected events, such as natural disasters, supply chain disruptions, or economic downturns (Peck, 2005). Entrepreneurs must prepare for a variety of scenarios, ensuring that their business is equipped to handle disruptions with minimal impact on operations. A well-designed contingency plan allows businesses to remain agile and responsive, reducing the likelihood of prolonged stock outs or excess inventory (Stevenson & Sum, 2009).

Steps for Creating Contingency Plans

i. **Alternative Suppliers**: One of the most critical aspects of a contingency plan is identifying alternative suppliers. Entrepreneurs should establish relationships with multiple suppliers to reduce reliance on a single source (Tang, 2006). In times of disruption, having alternative suppliers can prevent stock outs and ensure continuous production. Entrepreneurs may also consider working with suppliers located in different geographic regions to reduce the risk of localized disruptions, such as natural disasters or political instability (Wagner & Neshat, 2010).

ii. **Stockpiling Critical Items**: In certain cases, stockpiling essential items can serve as a buffer against supply chain disruptions. Entrepreneurs should identify critical products that are prone to supply shortages or that play a vital role in the production process and maintain a reserve stock of these items (Tomlin, 2006). However, stockpiling should be done carefully to avoid excessive inventory costs or obsolescence.

iii. **Inventory Buffer for Volatile Markets**: During times of market volatility, having an inventory buffer can help businesses mitigate the risk of stock outs or spikes in demand. This buffer, also known as safety stock, provides an extra layer of protection against unpredictable demand fluctuations (Chopra & Meindl, 2013). The size of the buffer should be based on historical sales data, demand variability, and the lead times of suppliers.

iv. **Financial Reserves**: Entrepreneurs should also prepare financial reserves as part of their contingency planning. Unexpected disruptions, such as a sudden increase in transportation costs or supplier insolvency, may require additional financial resources to maintain inventory flow (Knemeyer, Zinn, & Eroglu, 2009). Having access to capital ensures that businesses can act quickly to address issues without compromising their operations.

v. **Leveraging Technology for Contingency Plans**: Technology can play a pivotal role in supporting contingency plans. Inventory management software, real-time tracking systems, and data analytics tools allow entrepreneurs to monitor inventory levels, track shipments, and identify potential disruptions early (Sodhi & Tang, 2012). By integrating technology into contingency planning, businesses can react faster and make informed decisions during times of uncertainty.

vi. **Scenario Planning**: Entrepreneurs should incorporate scenario planning into their contingency strategy. This involves developing different scenarios that

anticipate various disruptions, such as a supplier delay, a surge in demand, or a transportation breakdown (Schoemaker, 1995). For each scenario, entrepreneurs can create a corresponding plan of action, ensuring that they are prepared to respond to any situation effectively.

Benefits of Contingency Planning

Contingency planning helps entrepreneurs reduce the risk of severe disruptions in their inventory systems and provides a clear roadmap for navigating uncertainty. The main benefits of contingency planning include:

i. **Enhanced Resilience**: Entrepreneurs who prepare for disruptions are better positioned to withstand challenges and maintain continuous operations during crises (Christopher & Peck, 2004).
ii. **Improved Supplier Relationships**: Establishing alternative suppliers and building long-term partnerships with key vendors can lead to more flexible and responsive supply chains (Norrman & Jansson, 2004).
iii. **Financial Stability**: By maintaining financial reserves and stockpiling critical items, entrepreneurs can avoid the financial strain that often accompanies supply chain disruptions (Tomlin, 2006).

Technology Solutions for Managing Inventory in Uncertain Markets

In today's volatile business landscape, entrepreneurs face increasingly unpredictable market conditions. Technological solutions, such as automation, artificial intelligence (AI), and cloud-based inventory systems, offer innovative ways to manage inventory efficiently in the face of such uncertainties. By leveraging these tools, entrepreneurs can improve operational resilience, streamline processes, and respond quickly to fluctuations in demand, ultimately enhancing their competitiveness.

Automation and AI-Driven Solutions

i. **Leveraging Automation in Inventory Management**: Automation plays a crucial role in reducing manual errors and optimizing inventory management tasks such as order processing, stock level monitoring, and demand forecasting. Entrepreneurs can use automated systems to perform routine tasks with greater accuracy and efficiency, thereby reducing the risks of overstocking or understocking (Chopra & Meindl, 2013). For instance, automated inventory tracking systems can monitor real-time stock levels, triggering automatic reorder points when inventory falls below a certain

threshold. This minimizes the risk of running out of essential products and ensures uninterrupted operations (Kamble, Gunasekaran, & Dhone, 2020). In addition, automation enables businesses to optimize warehouse operations by using tools like automated guided vehicles (AGVs) or robotic process automation (RPA). These technologies reduce labour costs, improve picking accuracy, and speed up inventory movement within warehouses. For example, Amazon's fulfillment centres extensively use robots to move products around the warehouse, ensuring that their inventory is efficiently managed and orders are processed quickly (Wamba & Queiroz, 2020).

ii. **AI and Machine Learning for Real-Time Decision Making**: Artificial intelligence (AI) and machine learning (ML) technologies have revolutionized inventory management by offering predictive insights and real-time decision-making capabilities. AI-driven solutions can analyse historical sales data, seasonal trends, and external factors (such as economic conditions or weather patterns) to forecast future demand with high precision (Ivanov, Dolgui, Sokolov, & Ivanova, 2017). Entrepreneurs can use these insights to adjust their inventory levels proactively, ensuring that they are neither overstocked nor understocked during market fluctuations (Tan, Kannan, & Narayanan, 2020). Machine learning algorithms continuously learn and improve over time, enhancing their predictive accuracy as more data becomes available. For example, ML models can identify complex patterns in sales and supply chain data, allowing entrepreneurs to anticipate demand spikes during specific periods or predict the impact of external events on inventory (Zhong, Newman, Huang, & Lan, 2016). Additionally, AI-driven solutions can assist with dynamic pricing strategies, adjusting prices based on real-time demand and inventory availability, further improving the entrepreneur's ability to manage inventory efficiently (Choi, Chung, & Lee, 2018). AI tools can also optimize supplier relationships by monitoring supplier performance and identifying potential risks such as late deliveries or quality issues. By analysing supplier data, entrepreneurs can mitigate supply chain disruptions and ensure that they are working with the most reliable partners (Giannakis & Papadopoulos, 2016).

iii. **Case Study: AI-Driven Inventory Management at Zara:** Zara, a global fashion retailer, has integrated AI and automation into its inventory management system to reduce stock outs and enhance customer satisfaction. The company uses real-time data analytics to track customer preferences and

optimize its inventory across different stores (Capell, 2013). By utilizing AI, Zara is able to make data-driven decisions about replenishment and stock allocation, significantly reducing the risk of overproduction or underproduction, which is especially critical in the fast-paced fashion industry (Choi et al., 2018).

Cloud-Based Inventory Systems

Advantages of Cloud-Based Platforms: Cloud-based inventory systems offer significant benefits for entrepreneurs operating in uncertain markets. These platforms provide flexibility, scalability, and accessibility, allowing businesses to manage their inventory from anywhere in the world, using any device with an internet connection (Tsai, Lee, & Lee, 2016). Cloud-based systems eliminate the need for expensive, on-site infrastructure, reducing operational costs and providing real-time visibility into inventory levels across multiple locations (Mell & Grance, 2011). One of the key advantages of cloud-based systems is their scalability. As businesses grow or experience seasonal fluctuations, cloud platforms allow entrepreneurs to scale their inventory management capabilities up or down according to their needs. This flexibility enables companies to avoid the pitfalls of over-investing in inventory management systems during low-demand periods or under-investing during peak seasons (Subramaniam & Chia, 2017). Moreover, cloud-based platforms offer seamless integration with other business functions, such as accounting, procurement, and customer relationship management (CRM), streamlining overall operations and improving decision-making.

Real-Time Data and Enhanced Collaboration: Cloud-based inventory systems provide real-time data on inventory levels, sales, and order statuses. This real-time visibility allows entrepreneurs to make informed decisions quickly, reducing the likelihood of stock outs or overstocking. Additionally, real-time inventory tracking enhances collaboration across the supply chain, enabling suppliers, distributors, and retailers to synchronize their efforts and respond more effectively to changes in demand (Wang, Jie, & Abareshi, 2015). For example, a business can share its inventory data with suppliers through a cloud-based platform, allowing suppliers to adjust production schedules or shipment timings based on actual demand. Cloud-based platforms also offer advanced analytics tools, providing entrepreneurs with insights into inventory turnover rates, slow-moving items, and seasonal trends. These insights help businesses optimize their inventory mix and adjust stocking levels to meet market demand more accurately (Wong, Lai, & Cheng, 2015).

Resilience through Remote Accessibility: One of the key benefits of cloud-based inventory systems is their ability to support remote management. Entrepreneurs can access their inventory data from any location, allowing them to manage their business operations during disruptions such as natural disasters, pandemics, or political instability (Subramaniam & Chia, 2017). This remote accessibility is especially valuable for entrepreneurs operating in multiple regions or countries, as it enables them to monitor inventory levels, sales trends, and supplier performance in real-time, without the need for physical presence (Tsai et al., 2016). For instance, during the COVID-19 pandemic, many businesses that had already adopted cloud-based systems were able to transition to remote work seamlessly, ensuring continuity in their inventory management processes. These businesses could track inventory, manage orders, and collaborate with suppliers without needing to be physically present in their offices or warehouses (Ivanov & Dolgui, 2020).

Case Study: Shopify's Cloud-Based Inventory Management

Shopify, an e-commerce platform, offers cloud-based inventory management solutions to its users. The platform enables entrepreneurs to track inventory in real time, manage stock levels across different sales channels, and automate stock reordering when levels drop below a certain threshold. Shopify's cloud system allows businesses to respond quickly to changes in demand and avoid stock outs, enhancing operational efficiency and customer satisfaction (Shopify, 2020).

Case Studies and Practical Examples

Case studies provide concrete examples of how entrepreneurs and businesses have successfully navigated uncertainty by implementing innovative inventory management strategies. The following case studies illustrate the practical application of these strategies, highlighting the actions taken and the outcomes achieved during periods of market volatility and crisis.

Case Study 1: A Small Business Thriving in Uncertainty

Background:

In 2018, *Green Roots Organics*, a small organic food retailer, faced significant challenges as the demand for organic products surged unpredictably. The entrepreneur behind Green Roots Organics, Sarah Lin, recognized that her traditional inventory management system was ill-equipped to handle the rapid fluctuations in demand. Without real-time visibility into inventory levels and with suppliers

struggling to meet the increased demand, Lin's business was at risk of stock outs and overstocking simultaneously, resulting in financial losses. To combat this, she implemented a series of innovative inventory management strategies, including adopting cloud-based inventory systems and diversifying her supplier base.

Actions Taken

Sarah Lin adopted a cloud-based inventory management platform to enhance real-time visibility of stock levels and streamline her operations. The system allowed her to track inventory in real-time across multiple sales channels, which was essential for quickly responding to demand surges. By integrating her e-commerce platform and physical store with the cloud system, she gained real-time insights into product performance, ensuring that popular items were always in stock while minimizing overstock of slow-moving products (Mell & Grance, 2011).

Additionally, Lin diversified her supplier network by identifying alternative local suppliers who could deliver smaller batches of goods more frequently, ensuring consistent stock levels despite the supply chain challenges. This decision mitigated the risk of relying on a single supplier and allowed Green Roots Organics to avoid severe disruptions in inventory when one supplier experienced delays. By establishing long-term contracts with these suppliers, Lin also secured favourable pricing, reducing the impact of fluctuating supplier costs (Christopher, 2016).

Lin further introduced automation into her demand forecasting processes by using AI-driven tools that analysed historical sales data and customer preferences. The AI system adjusted inventory levels based on seasonal trends and customer buying behaviour, allowing Green Roots Organics to better anticipate demand and make data-driven decisions (Ivanov, Dolgui, Sokolov, & Ivanova, 2017).

Outcomes

The implementation of cloud-based inventory systems and AI-driven forecasting tools enabled Green Roots Organics to navigate the uncertainty in the organic food market effectively. Stock outs were reduced by 30%, and overstock levels decreased by 20%, resulting in significant cost savings. Moreover, by diversifying her supplier base, Lin ensured that her business had greater supply chain resilience, reducing lead times and maintaining consistent product availability during periods of high demand. As a result, Green Roots Organics not only survived the market turbulence

but also expanded its customer base and grew its revenues by 15% over the following year.

This case illustrates the importance of integrating technology and supply chain diversification strategies to manage inventory effectively in uncertain markets. Lin's proactive approach to real-time inventory visibility and supplier flexibility demonstrates how small businesses can thrive despite external challenges (Christopher, 2016).

Case Study 2: Managing Inventory During a Crisis

Background:

In 2020, the COVID-19 pandemic caused widespread disruption to global supply chains, affecting industries worldwide. One of the industries hit hardest was the electronics sector, where supply chains were dependent on global suppliers from regions severely affected by lockdowns and restrictions. 'TechTools Inc.', a mid-sized electronics distributor, found itself in a precarious situation as supplier delays and shipping bottlenecks led to a shortage of critical components. With demand for home-office equipment spiking during the pandemic, TechTools had to navigate the crisis carefully to avoid losing market share.

Actions Taken

TechTools responded by implementing a combination of inventory risk assessment and contingency planning strategies. First, the company performed a comprehensive inventory risk assessment to identify which products were most vulnerable to supply chain disruptions. Using predictive analytics, TechTools prioritized stocking essential high-demand items, such as laptops and webcams, over lower-demand products. This strategy allowed the company to focus its resources on maintaining an adequate supply of the most profitable items (Wamba & Queiroz, 2020).

Simultaneously, TechTools built contingency plans by securing additional inventory from alternative suppliers outside of the highly impacted regions. This strategy involved forming partnerships with suppliers in nearby countries who could provide similar components within shorter lead times, mitigating the risk of prolonged stockouts. TechTools also stockpiled critical components by purchasing larger-than-usual quantities of items that were at risk of running out. Although this increased short-term inventory costs, it protected the company from potential losses due to

stock outs (Ivanov & Dolgui, 2020). TechTools further implemented a dynamic inventory management system that monitored supplier performance in real-time. This system flagged potential delays and issues early, allowing the company to make quick decisions about reallocating inventory to regions with higher demand or finding alternative solutions to meet customer needs.

Outcomes

By conducting an inventory risk assessment and proactively creating contingency plans, TechTools managed to navigate the crisis effectively. Despite global supply chain disruptions, the company was able to maintain a steady supply of essential products, satisfying the surge in customer demand for home-office equipment. As a result, TechTools achieved a 25% increase in revenue during the height of the pandemic, while many competitors struggled with stock outs (Ivanov & Dolgui, 2020).

The company's decision to diversify its supplier network and stockpile critical components paid off, as it was able to maintain a competitive advantage during the crisis. Furthermore, TechTools' investment in dynamic inventory management allowed it to adjust quickly to changing conditions and avoid significant losses due to delayed shipments. This case highlights the importance of crisis planning and supplier diversification in managing inventory during periods of market disruption.

Both case studies illustrate the critical role of innovative inventory management strategies in helping businesses navigate uncertainty and market disruptions. This study aimed to examine how entrepreneurs can optimize their inventory management by leveraging technology, data-driven decision-making, and adaptive supply chain practices. Through the implementation of cloud-based inventory systems, AI-driven demand forecasting, and contingency planning, businesses can enhance their resilience, mitigate risks, and maintain operational continuity. By prioritizing real-time inventory visibility, diversifying suppliers, and proactively preparing for disruptions, entrepreneurs can position their businesses for sustainable growth in unpredictable markets. The findings reinforce the importance of adopting forward-thinking inventory management approaches to not only withstand uncertainties but also turn challenges into opportunities for long-term success.

Future Trends in Inventory Management for Entrepreneurs

As market dynamics continue to evolve, entrepreneurs face increasing pressure to adopt cutting-edge inventory management strategies to stay competitive. Technological advancements, environmental concerns, and global economic shifts are shaping the future of inventory management. This section explores two major trends that are expected to transform the way entrepreneurs manage inventory in uncertain environments: the role of artificial intelligence (AI) and machine learning (ML), and the incorporation of sustainable inventory practices.

The Role of AI and Machine Learning

Advancements in AI and Machine Learning: Artificial intelligence (AI) and machine learning (ML) are already revolutionizing the business landscape, and their application in inventory management is only set to grow in significance. AI-driven solutions are designed to automate and optimize complex processes, providing entrepreneurs with powerful tools to manage uncertainty. These technologies analyse vast amounts of data, recognize patterns, and predict outcomes more accurately than human-driven methods (Choi et al., 2022). One of the core benefits of AI and ML in inventory management is their ability to improve demand forecasting. Traditional forecasting methods often rely on historical sales data, but these may not fully account for the rapid market shifts that are characteristic of modern business environments. By analysing real-time data from various sources, including social media trends, competitor pricing, and weather forecasts, AI-driven models offer more accurate predictions of demand fluctuations, enabling entrepreneurs to adjust inventory levels proactively (Choi & Lambert, 2020). These tools also help businesses identify purchasing patterns and forecast seasonal or event-based spikes in demand, reducing the risks of stock outs or overstocking (Kamble et al., 2020).

AI-Enhanced Decision-Making and Inventory Automation: AI systems can also enhance decision-making in inventory management by suggesting optimal stock levels and reorder points. Entrepreneurs can rely on AI to automate routine tasks, such as ordering stock when inventory drops below predefined thresholds. Automation streamlines operations, minimizes human error, and frees up time for entrepreneurs to focus on strategic decision-making (Wamba & Queiroz, 2020). AI's capacity for self-learning means that these systems continuously improve as they process more data, making them increasingly effective at managing dynamic supply chains and addressing unexpected disruptions. Moreover, AI and ML can aid in

scenario analysis by generating various supply chain scenarios based on potential market shifts. Entrepreneurs can simulate different responses to uncertain events—such as supplier delays or economic downturns—and use AI-generated insights to select the most effective strategy. In this way, AI serves as a tool for contingency planning and risk mitigation (Ivanov et al., 2020).

Implications for Entrepreneurs: For entrepreneurs, the adoption of AI and ML in inventory management offers several key advantages. Not only do these technologies enhance operational efficiency, but they also provide a competitive edge by enabling businesses to react more quickly to market changes. As these tools become more accessible and affordable, entrepreneurs can leverage AI and ML to scale their operations without the need for significant increases in labour or overhead costs (Rüßmann et al., 2015). The future will likely see AI systems becoming an integral part of inventory management strategies, driving innovation and providing critical insights that help businesses thrive in uncertain environments.

Sustainable Inventory Practices

Sustainability as a Competitive Advantage: As global awareness of environmental issues grows, sustainability is becoming a core consideration in business operations, including inventory management. For entrepreneurs, integrating sustainable practices into their inventory strategies offers a dual benefit: it aligns with consumer demand for environmentally conscious products and serves as a method for mitigating supply chain risks (Bai & Sarkis, 2020). Sustainable inventory management involves reducing waste, optimizing resource use, and prioritizing ethical sourcing, all of which contribute to long-term business resilience. Sustainable practices also provide opportunities for cost savings. For instance, by adopting circular economy models—where products are reused, refurbished, or recycled—entrepreneurs can minimize waste and reduce the cost of raw materials (Ellen MacArthur Foundation, 2019). Companies that implement such models may experience reduced reliance on volatile supply chains, as they are less dependent on new materials and can instead repurpose existing products. Additionally, many governments are incentivizing businesses to adopt sustainable practices through tax breaks and grants, making sustainability a financially viable strategy for entrepreneurs (Gong et al., 2019).

Reducing Carbon Footprint and Resource Consumption: One key aspect of sustainable inventory management is reducing the carbon footprint of supply chains.

Entrepreneurs can achieve this by optimizing transportation routes, consolidating shipments, and sourcing materials from local suppliers to minimize the environmental impact of long-distance shipping (Wu & Pagell, 2011). Furthermore, adopting energy-efficient warehousing practices, such as using renewable energy sources and implementing smart lighting and temperature controls, can significantly reduce operational costs while improving sustainability. Another sustainable practice is maintaining optimal inventory levels to reduce waste. Overstocking products that have limited shelf life can lead to significant financial losses and unnecessary waste. Entrepreneurs can implement lean inventory management practices, which prioritize stocking only what is needed to meet short-term demand while minimizing excess. This approach not only reduces waste but also limits the risk of overproduction and storage costs (Christopher, 2016).

Building Resilient Supply Chains Through Sustainability: Sustainability also plays a crucial role in building resilient supply chains that can withstand disruptions. By sourcing raw materials ethically and ensuring that suppliers adhere to environmental and labour standards, entrepreneurs can protect their supply chains from potential regulatory or reputational risks (Sarkis et al., 2011). Additionally, companies that embrace sustainability are often better equipped to navigate environmental regulations and market shifts toward green products, which can safeguard them against future uncertainties in the business landscape (Gong et al., 2019).

Implications for Entrepreneurs: Sustainable inventory management is not only an ethical responsibility but also a strategic advantage for entrepreneurs operating in uncertain markets. As consumer preferences increasingly shift toward sustainable products, businesses that adopt green practices will be better positioned to attract environmentally conscious customers. Furthermore, sustainability initiatives can help businesses manage risk by reducing reliance on volatile global supply chains and promoting long-term operational efficiency (Gong et al., 2019). Entrepreneurs who incorporate sustainability into their inventory strategies will likely experience enhanced brand loyalty, regulatory compliance, and resilience to market fluctuations. The future of inventory management for entrepreneurs will be shaped by technological advancements and the growing importance of sustainability. AI and machine learning will continue to transform inventory management, providing real-time data-driven insights that help businesses manage uncertainty and optimize their operations. Simultaneously, sustainable practices will enable entrepreneurs to

mitigate supply chain risks, align with consumer preferences, and build resilient business models. By embracing these trends, entrepreneurs can navigate the uncertainties of the modern market while positioning their businesses for long-term success.

Conclusion

Entrepreneurs operating in today's dynamic and uncertain business environments must adopt innovative strategies to effectively manage their inventory. Throughout this chapter, several key strategies have been explored, ranging from risk mitigation and contingency planning to leveraging advanced technologies such as artificial intelligence (AI) and cloud-based platforms. In addition, case studies have illustrated practical examples of businesses thriving amidst uncertainty by employing these techniques. As entrepreneurs face fluctuating demand, supply chain disruptions, and unpredictable market conditions, mastering these inventory management strategies is essential for both short-term survival and long-term success.

Key Takeaways

i. **Risk Mitigation and Contingency Planning**: Entrepreneurs need to assess potential risks, such as supplier delays and market downturns, that may impact their inventory. This assessment should be followed by the development of robust contingency plans, including securing alternative suppliers, stockpiling critical items, and maintaining financial reserves. These steps help reduce vulnerability to unexpected disruptions and maintain business continuity (Ivanov et al., 2020).

ii. **Technology-Driven Inventory Management Solutions**: The integration of automation, AI, and cloud-based systems is crucial for streamlining inventory processes and enhancing decision-making. AI-driven solutions can provide real-time data analysis, improve demand forecasting, and optimize stock levels, ensuring that entrepreneurs can adapt quickly to market changes. Meanwhile, cloud-based platforms offer scalability and flexibility, allowing businesses to manage inventory efficiently across multiple locations or markets (Choi et al., 2022).

iii. **Sustainable Inventory Practices**: Sustainability is becoming increasingly vital in inventory management. Entrepreneurs should aim to incorporate sustainable practices, such as reducing waste, optimizing resource use, and sourcing materials ethically. Not only do these practices align with consumer

preferences for environmentally responsible products, but they also contribute to long-term business resilience by reducing reliance on volatile supply chains (Bai & Sarkis, 2020).

iv. **Case Studies and Practical Exam**ples: Real-world examples of businesses navigating uncertainty reinforce the effectiveness of the discussed strategies. Case studies such as those of small businesses thriving during crises and companies effectively managing inventory during supply chain disruptions highlight the importance of proactive planning, agility, and the strategic use of technology (Christopher, 2016).

Call to Action

The strategies discussed in this chapter are not merely theoretical concepts—they are actionable solutions that can significantly improve how entrepreneurs manage inventory in uncertain markets. However, implementing these strategies requires a commitment to assessing and re-evaluating current inventory management systems. Entrepreneurs should begin by conducting a thorough inventory risk assessment, identifying potential vulnerabilities, and developing comprehensive contingency plans.

Furthermore, entrepreneurs are encouraged to adopt AI-driven and cloud-based solutions to enhance their inventory management processes. These technologies enable real-time insights and greater flexibility, which are essential in navigating uncertainty. Entrepreneurs who proactively embrace these tools will position their businesses to respond swiftly to market changes, minimizing the risks associated with stock outs, overstocking, and supply chain disruptions.

Lastly, sustainability should be at the forefront of inventory management strategies. By incorporating sustainable practices, entrepreneurs not only meet growing consumer demand for ethical products but also build more resilient supply chains that can withstand market volatility. Sustainable inventory practices offer both a competitive advantage and a path to long-term growth.

In conclusion, entrepreneurs navigating uncertainty must adopt a proactive, innovative approach to inventory management. By assessing risks, embracing technology, and committing to sustainability, they can enhance their ability to respond to challenges, seize new opportunities, and thrive in today's unpredictable market landscape.

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