

AN ANALYSIS OF TECHNOLOGICAL CHANGES AND INDUSTRIAL RELATIONS IN NIGERIA

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Abstract

Technological changes have had a significant impact on industrial relations in Nigeria. The adoption of new technologies has led to increased efficiency, productivity, and competitiveness in many industries. However, these changes also pose significant challenges for workers, businesses, and policymakers. Job displacement, skills gap, security risks, and ethical concerns are some of the major issues that need to be addressed. To mitigate these challenges, there is a need for proactive responses from all stakeholders. Investing in education and training, encouraging innovation and entrepreneurship, developing appropriate regulations, building critical infrastructure, promoting collaboration, and addressing the digital divide are some of the key strategies that can help maximize the benefits of technological change while minimizing its negative impacts. In this context, it is important to strike a balance between leveraging the opportunities presented by emerging technologies and managing their potential negative effects. By taking proactive steps to address the challenges posed by technological change, Nigeria can position itself as a leader in the digital economy and drive sustainable economic growth.

Keywords: *Technological Changes, Industrial Relations, Economic Growth, Infrastructure, Security.*

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INTRODUCTION

In recent years, technological change has had a profound impact on industrial relations in Nigeria. The rapid pace of technological innovation has disrupted traditional employment patterns and created new opportunities for workers and businesses alike. However, this transformation has also raised questions about the role of labor unions, the nature of work, and the relationship between employers and employees. The effects of technological change on industrial relations can be seen across a range of sectors in Nigeria, including manufacturing, services, and agriculture. Automation and artificial intelligence have led to the displacement of some types of jobs, while creating demand for others that require new skills and training. At the same time, the rise of the gig economy and flexible working arrangements has challenged traditional notions of employment and job security. These changes have important implications for the nature of work and the role of labor unions in Nigeria. As technology continues to reshape the economy, unions will need to adapt to new forms of work and organize workers in non-traditional settings. They will also need to engage with businesses and policymakers to shape the regulatory environment and ensure that workers' rights are protected.

This paper will explore the effects of technological change on industrial relations in Nigeria. It will examine the challenges and opportunities presented by automation, artificial intelligence, and other emerging technologies. It will also consider the implications for workers, businesses, and policymakers, and propose recommendations for addressing the challenges posed by technological change.

STATEMENT OF THE PROBLEM

The effects of technological change on industrial relations in Nigeria have been significant. However, with the increase in automation and artificial intelligence, some traditional jobs have been displaced or become obsolete, leaving many workers without employment opportunities. This has led to a rise in unemployment rates and underemployment, particularly among low-skilled and vulnerable workers. Also, as new technologies emerge, there is a growing demand for workers with specific technical skills and knowledge. However, many workers in Nigeria lack the necessary training and education to compete in the changing job market. The resulting skills mismatch can lead to long-term unemployment and underemployment. Furthermore, the rise of the gig economy and flexible working arrangements has led to an increase in precarious work, which is often characterized by low pay, limited benefits, and little job security. This type of work can make it difficult for workers to organize and advocate for their rights, leading to weaker collective bargaining power. Current labor laws and regulations in Nigeria were developed for a different era and may not adequately address the new forms of work emerging from technological change. There is a need for updated policies and regulations that take into account the evolving nature of work and the changing role of labor unions. There is a need for greater worker participation in decision-making processes around technological change. Workers must have a voice in determining how new technologies are implemented and how they affect their working conditions and wellbeing. Addressing these challenges will require a coordinated effort from governments, businesses, workers, and civil society organizations to promote inclusive growth and protect workers' rights in the face of technological change.

OBJECTIVES OF THE STUDY

The objectives of a study on the effects of technological change on industrial relations in Nigeria may include:

- To examine the impact of technological change on the nature and organization of work in Nigeria.
- To investigate the effect of technological change on the skills and knowledge required for employment in Nigeria.
- To analyze the impact of technological change on job security, wages, and working conditions in Nigeria.
- To explore the relationship between technological change and labor productivity in Nigeria.
- To identify the challenges and opportunities presented by technological change for the development of industrial relations in Nigeria.

To suggest strategies for managing the effects of technological change on industrial relations in Nigeria.

Overall, the objective of such a study would be to deepen our understanding of how technological change is affecting industrial relations in Nigeria and to provide insights that can inform policy and practice in this area.

CONCEPTUAL CLARIFICATION

Technological Changes

Adeyemo (2020), refers technological changes to the advancements and developments in technology that bring about new and improved ways of doing things. These changes can affect various aspects of society, including communication, transportation, healthcare, manufacturing, and entertainment. Some examples of technological changes include the emergence of smartphones, the use of cloud computing, the increasing use of automation in manufacturing, the development of renewable energy technologies, and the growth of artificial intelligence and machine learning. Technological changes have the potential to drive innovation and improve productivity, but they can also bring about significant societal challenges, such as job displacement and privacy concerns.

Changes in technology are ongoing and occur at an increasingly rapid pace. Some of the recent changes in technology includes artificial Intelligence. The development of AI has revolutionized the way machines learn and process information, leading to breakthroughs in areas such as natural language processing, computer vision, and machine learning. Also, internet of things (IoT) which refers to the connection of everyday devices and objects to the internet, allowing them to communicate with each other and perform tasks automatically. This has led to the emergence of smart homes, smart cities, and other connected environments. Furthermore, the use of cloud computing which has allowed businesses and individuals to store and access data and applications remotely, reducing the need for physical infrastructure and increasing collaboration and efficiency. There is also the introduction of 5G networks which promises faster speeds, lower latency, and increased capacity, enabling new applications and services such as virtual and augmented reality, autonomous vehicles, and remote surgery. Also, the recent introduction of blockchain technology being used to create

decentralized systems that can securely store and transfer data and assets without the need for intermediaries are few amongst the recent changes in the world of work (Oke & Asiru, 2019).

According to Adediran and Adelowo (2021), Nigeria has also seen some significant technological changes in recent years, though at a somewhat slower pace than many developed nations. Some of the most notable changes includes changes in mobile technology. The widespread adoption of mobile phones has transformed the way Nigerians communicate and access information, with over 90 million active mobile phone users in the country. Another change is the influx of fintech firms in Nigeria. Nigeria has become a hub for financial technology innovation, with numerous startups creating digital payment solutions and mobile banking platforms, such as Paystack and Flutterwave. Accordingly, the growth of e-commerce platforms such as Jumia and Konga has made it easier for Nigerians to shop online and access a wider range of products. Furthermore, the energy sector has also experienced its own changes as Nigeria is increasingly looking to renewable energy sources such as solar and wind power to address its growing energy needs. In the Agriculture sector, there is a growing focus on using technology to improve efficiency and productivity in Nigeria's agricultural sector, with companies such as Farmcrowdy and Thrive Agric leading the way.

Industrial Relations

Industrial relations refer to the relationship between employers, employees, and the state in the workplace. It encompasses a broad range of issues, including collective bargaining, workplace safety and health, employment law, and labor-management relations (Aruwa, Muhammad & Dauda, 2021).

Effective industrial relations are essential for maintaining a productive and harmonious workplace. When employers and employees have positive relationships, they can work together to achieve common goals, such as increasing productivity, improving working conditions, and enhancing job security. Effective industrial relations requires open communication, mutual respect, and a willingness to negotiate and compromise. Employers and employees must work together to create a safe and healthy work environment and ensure that workers receive fair pay and benefits. In addition, labor laws and regulations must be enforced to protect the rights of both employers and employees.

According to Adeyanju (2018), Industrial relations in Nigeria refer to the relationships, interactions, and negotiations between employers, employees, and their respective representatives. The industrial relations system in Nigeria is governed by various laws and regulations, including the Labor Act, Trade Unions Act, and the Employee Compensation Act. The labor market in Nigeria is characterized by a high level of informality and low unionization rates, with many workers employed in the informal sector without access to basic employment rights and protections. However, there are several registered trade unions and associations that represent workers in various sectors, including the Nigeria Labour Congress (NLC), Trade Union Congress (TUC), and United Labour Congress (ULC). Also, Uko-Aviomoh (2019) noted that collective bargaining as a key feature of industrial relations in Nigeria, and agreements are often reached through negotiations between employers and employee representatives. Strikes and lockouts are also common methods used by workers and unions to press for better working conditions and improved wages. However, the industrial relations system in Nigeria is not without its challenges. Issues such as lack of job security, poor

working conditions, low wages, and inadequate social protections continue to be major areas of concern. In addition, disputes between employers and employees sometimes escalate into violent clashes, leading to disruptions in economic activities and loss of lives and property. Efforts are being made by the government and other stakeholders to improve the industrial relations system in Nigeria, including strengthening labor laws, promoting dialogue and cooperation between employers and workers, and providing better social protections for workers.

Effects of Technological Change on Industrial Relations in Nigeria

According to Awonuga (2018), Technological change has had a significant impact on industrial relations in Nigeria. Some of the effects of technological change on industrial relations in Nigeria include:

Job Displacement: Technological advancements have led to the displacement of workers as machines and automation take over tasks that were previously performed by humans. This has resulted in reduced job security and increased competition for fewer jobs. Job displacement is the situation where workers lose their jobs due to various reasons such as technological change, economic restructuring, or changes in industry demand. Technological change is one of the primary reasons for job displacement, as machines and automation take over tasks that were previously performed by humans. In Nigeria, job displacement due to technological change has been a major challenge, particularly in industries such as manufacturing, agriculture, and services. As technology advances, many traditional jobs are becoming obsolete, and workers are required to acquire new skills and knowledge to remain relevant in the labor market. Job displacement can have significant negative effects on individuals, families, and communities.

It can lead to unemployment, poverty, and social exclusion, as well as increased stress and mental health problems for those affected. It can also lead to decreased productivity and reduced economic growth in affected regions. To mitigate the negative effects of job displacement, there is a need for policies and programs that support workers who have lost their jobs due to technological change. This can include retraining programs, income support, and job creation initiatives in emerging industries. It is essential to ensure that workers are equipped with the skills and knowledge necessary to adapt to new technologies and remain competitive in the labor market.

Changes in Skill Requirements: The adoption of new technologies often requires workers to acquire new skills and knowledge, leading to changes in the demand for labor and increased training needs. This can result in changes to the structure of the workforce and labor market. Changes in skill requirements are one of the most significant effects of technological change on industrial relations in Nigeria. As new technologies and automation are integrated into workplace processes, workers are required to acquire new skills and knowledge to remain employable.

In Nigeria, the demand for workers with technical skills such as programming, data analysis, and digital marketing has increased due to the growth of the technology industry. At the same time, traditional jobs that do not require these skills are becoming less in demand, leading to a shift in the labor market. This shift in skill requirements presents a challenge for workers who need to adapt to changing job requirements. It can also lead to income inequality, as those with more technical skills are likely to earn higher salaries than those without. To address this challenge, there is a need for policies and programs that promote skills acquisition and retraining. This includes offering training programs and other educational

opportunities to help workers acquire the skills needed for emerging industries. The government can also incentivize employers to invest in training and skills development programs for their employees, particularly those in industries where technology adoption is high. Changes in skill requirements due to technological change are an important issue for industrial relations in Nigeria. It is essential to ensure that workers have access to the necessary resources and support to adjust to these changes and remain competitive in the labor market.

Increased Flexibility: New technologies have enabled employers to adopt more flexible work arrangements, such as telecommuting and flexible scheduling, which can improve productivity and work-life balance for employees. Increased flexibility is another significant effect of technological change on industrial relations in Nigeria. New technologies have enabled employers to offer more flexible work arrangements, such as telecommuting, flexible scheduling, and remote work, which can improve productivity and work-life balance for employees. In Nigeria, flexible work arrangements are becoming increasingly popular, particularly among workers in the technology industry. This has allowed workers to access job opportunities regardless of their location, reducing the need for physical presence at traditional workplaces. Flexible work arrangements have several benefits for workers, including improved work-life balance, reduced commuting times, and increased autonomy over their work schedules. They also benefit employers by improving productivity and allowing them to tap into a larger pool of talent. However, there are also concerns associated with flexible work arrangements. These include potential difficulties in managing remote teams, maintaining team cohesion, and ensuring adequate communication between workers and management. To address these concerns, it is essential

to establish policies and guidelines that promote effective communication, collaboration, and productivity among remote workers. It is also important to ensure that workers receive the necessary support and resources to succeed in a flexible work environment. Increased flexibility due to technological change presents both opportunities and challenges for industrial relations in Nigeria. It is essential to find a balance that supports workers while also meeting the needs of employers and promoting economic growth.

Decentralization of Work: The decentralization of work is another significant effect of technological change on industrial relations in Nigeria. As technology advances, it becomes possible for people to work remotely, reducing the need for physical presence at traditional workplaces. In Nigeria, the decentralization of work is becoming increasingly common, particularly among workers in the technology industry. This has allowed workers to access job opportunities regardless of their location, reducing the need for people to move to urban areas to access employment. Decentralization of work has several benefits for workers, including reduced commuting times, increased flexibility and autonomy over their work schedules, improved work-life balance, and reduced transportation costs. It also benefits employers by improving productivity, reducing overhead costs associated with maintaining physical offices, and allowing them to tap into a larger pool of talent. However, there are also concerns associated with decentralization of work. These include potential difficulties in managing remote teams, maintaining team cohesion, and ensuring adequate communication between workers and management. To address these concerns, it is essential to establish policies and guidelines that promote effective communication, collaboration, and productivity among remote

workers. It is also important to ensure that workers receive the necessary support and resources to succeed in a decentralized work environment. The decentralization of work due to technological change presents both opportunities and challenges for industrial relations in Nigeria. It is essential to find a balance that supports workers while also meeting the needs of employers and promoting economic growth.

New Forms of Communication: Technology has facilitated communication and collaboration between workers and management, leading to greater transparency and better decision-making processes. These includes social media platforms which allows for instant messaging, video and voice calls, and sharing multimedia content with friends and family, Virtual reality technology allows people to communicate with each other in a virtual environment, making it feel like they are in the same physical space. Messaging apps such as WhatsApp or WeChat, which allows for instant messaging, voice and video calls, and the sharing of multimedia content. Video conferencing software platforms like Zoom or Skype allow for video calls and meetings with people from all over the world. Chatbots automated programs which provides assistance and support to customers by responding to their queries through instant messaging. Voice assistants and smart speakers such as Amazon Echo or Google Home that allow users to interact with their devices through voice commands. And tools like Slack or Microsoft Teams which offers teams a centralized platform to communicate, share files, and collaborate on projects.

Increased Monitoring: With new technology comes increased surveillance and monitoring of workers, leading to concerns over privacy and worker autonomy. Increased monitoring refers to the act of closely observing or tracking a person, group, or situation in order to gather information or

ensure compliance with certain rules or regulations. This can take many forms, such as increased surveillance through cameras, monitoring of online activity, or more frequent check-ins with authorities. Increased monitoring can be instituted for a variety of reasons, including concerns about security, safety, or potential risks to public health or other important interests. However, it is important to balance the need for monitoring with individual rights and privacy concerns. Overall, technological change has brought about significant changes to the nature of work and industrial relations in Nigeria. As technology continues to evolve, it is expected that the impact of technology on industrial relations will continue to grow and change.

Challenges and Opportunities Presented by Automation, Artificial intelligence, and Other Emerging Technologies.

Automation, artificial intelligence (AI), and other emerging technologies present both challenges and opportunities for society according to Ojeleye and Olusoji (2020). These includes the following:

Challenges:

1. Job displacement: Automation and AI have the potential to replace human workers in certain jobs, leading to job loss or reduced demand for certain types of labor,
2. Skills gap: As technology advances, workers may need to acquire new skills in order to remain relevant and employable in the workforce.
3. Security risks: Increased reliance on technology also presents security risks, such as cyber-attacks or data breaches, which can have serious consequences for individuals and organizations.

4. Ethical concerns: The use of AI and automation raises ethical concerns around issues like bias, privacy, and accountability.

Opportunities:

1. Improved efficiency: Automation and AI can increase productivity and efficiency in many industries, leading to cost savings and improved outputs.
2. New job opportunities: While some jobs may be displaced by automation, new job opportunities may also arise as a result of the development and implementation of new technologies.
3. Enhanced decision-making: AI can help improve decision-making processes by analyzing large amounts of data and identifying patterns that humans may not be able to detect.
4. Innovation: Emerging technologies can lead to new products, services, and business models that can drive economic growth and benefit society.

As with any new technology, it's important to carefully consider the potential impacts and take steps to mitigate risks and maximize benefits. This requires collaboration between industry, government, and civil society to ensure that emerging technologies are developed and used in a responsible and ethical manner.

The Implications of Technological Changes for Workers, Businesses, and Policymakers in Nigeria

Ojo, Omole, and Adewale (2018), suggested that technological changes have

significant implications for workers, businesses, and policymakers in Nigeria which they highlighted as follows:

▪ ***For Workers:***

Job displacement: Automation and AI may replace certain jobs, leading to job loss or reduced demand for certain types of labor.

Skills gap: As technology advances, workers may need to acquire new skills in order to remain relevant and employable in the workforce.

Remote work: With the adoption of digital technologies, more jobs can be done remotely, giving workers greater flexibility and access to global markets.

Increased competition: With the rise of the gig economy and online platforms, workers can face increased competition from workers in other countries.

▪ ***For Businesses:***

Improved efficiency: Automation and AI can increase productivity and efficiency in many industries, leading to cost savings and improved outputs.

New business models: Emerging technologies can enable new business models such as e-commerce and digital services.

Globalization: Digital technologies can help Nigerian businesses reach global markets and compete on a global scale.

Need for skilled workers: As businesses adopt new technologies, they will need skilled workers to operate and maintain these technologies.

▪ ***For Policymakers***

Skills development: Policymakers need to invest in education and training programs to ensure that workers have the necessary skills to thrive in the changing job market.

Regulation: Policymakers need to develop appropriate regulations to ensure that emerging technologies are used in a responsible and ethical manner.

Investment in infrastructure: Policymakers need to invest in critical infrastructure like high-speed internet and digital payment systems to facilitate the adoption of new technologies.

Support for small businesses: Policymakers need to provide support for small businesses to take advantage of the opportunities presented by emerging technologies.

Technological changes have far-reaching implications for workers, businesses, and policymakers in Nigeria. While these changes present numerous opportunities, they also pose significant challenges that require careful consideration and proactive responses from all stakeholders to ensure that the benefits are maximized and the risks are minimized.

Addressing the Challenges Posed by Technological Change in Nigeria

The challenges associated with technological changes are so enormous and requires concerted efforts by all stakeholders. Ademiluyi, Owoyemi and Oke (2019), in a study on “industrial relations dynamics” made some recommendations for addressing the challenges posed by technological change in Nigeria:

Investing in Education and Training: The government should invest in education and training programs that focus on the skills needed to succeed in the digital economy. This will help workers adapt to the new job market and ensure that they can take advantage of the opportunities presented by emerging technologies.

Encouraging Innovation and Entrepreneurship: Policymakers should encourage innovation and entrepreneurship by providing support for startups and small businesses, such as tax incentives, funding, and mentorship programs. This will help create new jobs and business models that can drive economic growth.

Developing Appropriate Regulations: Policymakers need to develop appropriate regulations for emerging technologies to protect the rights and privacy of citizens, ensure fairness and accountability, and prevent abuse or misuse of technology.

Building Critical Infrastructure: The government should invest in critical infrastructure like high-speed internet, digital payment systems, and cybersecurity to facilitate the adoption of new technologies and reduce the risk of cyber-attacks.

Promoting Collaboration: Policymakers should promote collaboration between industry, academia, and civil society to ensure that emerging technologies are developed and used in a responsible and ethical manner, and that the benefits are shared equitably.

Addressing the Digital Divide: The government should work to address the digital divide by increasing access to technology and ensuring that all citizens have access to affordable, high-quality internet services.

These recommendations require concerted efforts from all stakeholders to ensure that the benefits of technological change are widely shared, and the risks are minimized. By taking proactive steps to address the challenges posed by technological change, Nigeria can position itself as a leader in the digital economy and drive sustainable economic growth.

Theoretical Underpinnings

There are several theories of technological change and industrial relations that attempt to explain the relationship between these two phenomena. Here are three of the most prominent ones as suggested by Davenport & Ronanki, (2018).

Skill Biased Technological Change (SBTC): This theory argues that technological change tends to favor workers with higher levels of education and skills, while reducing the demand for less-skilled workers. This can lead to increased wage inequality and reduced job opportunities for low-skilled workers. SBTC is often associated with the adoption of computers and other digital technologies.

Disruptive Innovation: This theory argues that new technologies can disrupt existing industries and business models, leading to significant changes in employment patterns and labor relations. Disruptive innovations often start out as niche products or services but gradually improve in quality and become mainstream, displacing established players in the market. Disruptive innovation can create new job opportunities but also lead to job displacement and skill gaps.

Socio-Technical Systems Theory: This theory emphasizes the interdependence of technology and social systems, arguing that technological change cannot be

understood apart from the social context in which it occurs. According to this theory, technological change should be accompanied by changes in work organization, management practices, and employee participation to maximize its benefits and minimize its negative impacts.

These theories highlight the complex and dynamic nature of the relationship between technological change and industrial relations. They suggest that the adoption of new technologies can have far-reaching impacts on the labor market, employment relations, and the wider society, and that policymakers need to consider these issues when developing strategies to promote economic growth and social welfare.

CONCLUSION

Technological changes have brought significant transformations to the industrial relations landscape in Nigeria. The adoption of new technologies has led to increased efficiency, productivity, and competitiveness in many industries. However, these changes also pose significant challenges for workers, businesses, and policymakers, such as job displacement, skills gap, security risks, and ethical concerns. To address these challenges, there is a need for proactive responses from all stakeholders to ensure that the benefits of technological change are maximized, and the risks are minimized. This requires investing in education and training, encouraging innovation and entrepreneurship, developing appropriate regulations, building critical infrastructure, promoting collaboration, and addressing the digital divide. By taking these steps, Nigeria can position itself as a leader in the digital economy and drive sustainable economic growth while ensuring that the benefits of technological change are widely shared. It is important to balance the opportunities presented by emerging technologies with the

needs and concerns of workers, businesses, and society as a whole, to build a future that is inclusive, equitable, and sustainable.

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