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ASSESSING THE INFLUENCE OF AI ON EMPLOYMENT TRENDS IN NIGERIA'S INFORMAL AND GIG SECTORS

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Abstract: This paper examines the transformative impact of Artificial Intelligence (AI) on employment models and the gig economy in Nigeria. As AI technologies advance, they offer promising improvements in efficiency, productivity, and service delivery across sectors. However, these innovations also introduce significant challenges, particularly concerning workforce displacement, job security, and the growing need for continuous upskilling. In the context of Nigeria's expanding gig economy, AI presents a dual-edged opportunity—it may drive the creation of flexible job opportunities while simultaneously intensifying income inequality and job precarity.

The research highlights a shift toward skills-based hiring, where employers increasingly prioritize competencies over formal qualifications. This shift, enabled in part by AI-powered platforms and remote work technologies, is diminishing geographic barriers and reshaping traditional employment dynamics. With the workforce becoming more multigenerational and digital, workers are gravitating toward gig work models that offer greater autonomy and adaptability.

The paper emphasizes that for Nigeria to benefit fully from AI-driven changes in the labor market, a coordinated response is essential. Policymakers, industry leaders, and educational institutions must collaborate to ensure inclusive access to digital literacy and reskilling initiatives. Moreover, ethical considerations such as fairness, equity, and digital inclusion must be central to the deployment of AI systems.

Ultimately, embracing AI responsibly while fostering a supportive ecosystem for gig workers will be critical in ensuring that the future of work in Nigeria is not only technologically advanced but also socially inclusive and economically sustainable.

Keywords: Artificial Intelligence (AI), Future of Work, Gig Economy, Job Displacement

INTRODUCTION

The impact of Artificial Intelligence (AI) on the future of work and the gig economy in Nigeria is a topic that holds great significance as the country continues to navigate economic and technological advancements. As AI technologies continue to evolve, th ey have the potential to significantly reshape th e nature of work, the labor market, and the way people engage in the gig economy in Nigeria Levy, F. (2018). One of the key areas where AI is expected to impact the future of work in Nigeria is in automation. AI-powered technologies have the

potential to automate routine and repetitive tasks across various industries, leading to potential job displacement in some sectors. This could have significant implications for workers in Nigeria, particularly those in lowskilled and routine jobs, as they may face challenges in finding new employment opportunities Russell and Norvig (2009).

At the same time, AI has the potential to create new and alternative work opportunities in the gig economy in Nigeria. As businesses and industries increasingly leverage AI to streamline operations, there may be a growing demand for independent contractors, freelancers, and gig workers who can provide specialized skills and services that complement AI technologies. This could lead to a shift in the nature of work, with a greater emphasis on flexible, project-based work arrangements.

Thus, AI has the potential to enable individuals in Nigeria to ups-kill and reskill for the future of work. With the advent of AI-powered online learning platforms and educational resources, workers in Nigeria may have access to opportunities to acquire new skills and knowledge that are in demand in the AI era. This can empower individuals to adapt to the changing labor market and pursue new career paths in emerging industries Levy, F. (2018).

The impact of AI on the gig economy in Nigeria also extends to the way work is organized and managed. AI technologies can facilitate efficient matching of gig workers with job opportunities, enable real-time performance monitoring and feedback, and improve the overall experience of gig workers and employers. This has the potential to enhance the gig economy in Nigeria and create new avenues for individuals to engage in flexible and on-demand work arrangements Russell and Norvig (2009).

However, it is important to consider the potential challenges and risks associated with the impact of AI on the future of work and the gig economy in Nigeria. Issues such as job displacement, income inequality, and the ethical implications of AI in the workplace need to be carefully addressed to ensure that the potential benefits of AI in the future of work are realized in a responsible and equitable manner.

Through empirical observation, the impact of AI on the future of work and the gig economy in Nigeria is significant and multifaceted. While AI has the potential to automate tasks and reshape job roles, it also has the potential to create new work opportunities, enable deskilling and reskilling, and enhance the gig economy. As AI continues to advance, it is important for policymakers, businesses, and workers in Nigeria to collaborate and address the potential challenges and opportunities associated with AI in the future of work and the gig economy. This will be essential for ensuring that the economic impact of AI in Nigeria is realized in a responsible and inclusive manner Levy, F. (2018). Thus, the relationship between the gig economy and AI is characterized by the increasing integration and reliance on AI technology to enhance the efficiency, scalability, and quality of services provided within the gig economy. As AI continues to advance, it is likely to have a significant impact on the gig economy, influencing the way in which work is performed, opportunities are accessed, and resources are allocated. This relationship between the gig economy and AI is one of ongoing innovation and adaptation as both sectors continue to evolve.

Review of Related Literature

The subdivision shows affiliated literature under the following noesis: Theoretical Appraisal, Conceptual Review, Review of Related Empirical Studies and Summary of literature Review.

Theoretical Framework

This paper will be guided by the The theory of labor Economics and The Technology and Innovation Theory.

The Theory of Labor Economics

The theory of labor economics can be used to explain the gig economy. Labor economics focuses on the behavior and dynamics of the labor market, including employment, wages, and workforce participation. In the context of the gig economy, labor economics can help explain the rise of temporary, freelance, and on-demand work

arrangements, as well as the impact of technology on the nature of work and employment relationships Schumpeter, (1961 [1912).

Additionally, the theory of income distribution may also be relevant to understanding the gig economy, as it considers the allocation of income and the distribution of earnings among different types of workers, including gig workers.

Other economic theories that may be used to explain the gig economy include transaction cost economics, which examines the costs and benefits of different forms of work arrangements, and human capital theory, which considers the investment in skills and knowledge by workers in the gig economy. Overall, the gig economy can be analyzed through the lens of various economic theories to understand its impact on labor markets and overall economic activity Rothbard, (1996).

Technology and Innovation Theory

Technology and innovation theory can be used to explain the impact of AI (artificial intelligence) by focusing on how technological advancements, such as AI, influence productivity, efficiency, and economic growth. This theory considers factors such as investment in research and development, the diffusion of new technologies, and their effects on industries and labor markets Fleming, and Sorenson, (2001). In the context of AI, technology and innovation theory would analyze how AI leads to the development of new products, processes, and services that can improve overall economic output and performance. It would also examine the investment in AI research and development, the adoption and integration of AI technologies into various industries, and the potential for AI to drive productivity gains and stimulate economic growth. In addition, this theory would address the implications of AI for the allocation of resources, the creation of new markets and industries, and the potential for disruption of existing business models and practices. However, It would also consider the role of government policies and regulations in promoting AI innovation and diffusion, as well as addressing any potential negative consequences such as job displacement or income inequality Dawid, H. (2004). Overall, technology and innovation theory provides a framework for understanding how AI impacts the economy by driving technological progress, improving efficiency, and shaping the trajectory of economic development.

Conceptual Review

The Gig Economy

The gig economy is a labor market characterized by the prevalence of short-term contracts or freelance work as opposed to permanent jobs. It is also known as the on-demand economy or platform economy, as it relies heavily on digital platforms or apps to connect workers with potential customers or clients. In the gig economy, individuals are often referred to as "gig workers" or "independent contractors" and they can work for multiple employers at the same time. This type of work can take many forms, including temporary jobs, freelance work, on-call work, and independent contracting Ajonbadi and Adekoya, (2020).

The rise of the gig economy has been facilitated by advancements in technology, particularly through the use of smartphone apps and online platforms that allow workers to connect with potential employers or customers. These platforms can range from ride-hailing services like Uber and Lyft to food delivery services like Grubhub, and freelance marketplaces like Upwork and Fiverr. Advocates of the gig economy argue that it provides workers with flexibility and autonomy, allowing them to choose when and where they work. It also offers opportunities for individuals to supplement their income, pursue their passions, or gain experience in a particular field. Additionally, some businesses benefit from the ability to access a larger pool of talent and resources without the overhead costs associated with traditional employment Roy and Shrivastava, (2020).

However, critics of the gig economy raise concerns about job insecurity, lack of employment benefits, and the potential for exploitation of workers. Gig workers often do not receive benefits such as health insurance, retirement plans, or paid time off, and they may also be vulnerable to inconsistent income and unpredictable work

schedules. Additionally, the classification of these workers as independent contractors rather than employees can result in a lack of legal protections and recourse for issues such as wage theft or discrimination. The gig economy has had a significant impact on various industries, including transportation, delivery services, hospitality, and professional services. Its influence continues to grow as more individuals seek flexible work arrangements and businesses seek cost-effective ways to meet their labor needs Roy and Shrivastava, (2020). Through empirical observation, the gig economy represents a shift in the nature of work and employment, bringing both opportunities and challenges for workers, businesses, and policymakers alike. As this trend continues to evolve, it will be important to address the concerns and implications of the gig economy to ensure fair and sustainable practices for all involved.

Artificial Intelligence (AI)

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think, learn, and problem-solve like humans. The goal of AI is to create systems that can perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation Bernard M.(2020). AI systems work by combining large amounts of data with fast, iterative processing and intelligent algorithms, allowing the software to learn patterns in the data and make predictions or decisions based on that information. These systems are designed to adapt and improve over time as they are exposed to new data. There are several different types of AI, including narrow or weak AI, general or strong AI, and artificial superintelligence. Narrow AI is designed to perform a specific task, such as virtual assistants like Siri or Alexa, while general AI has the ability to perform any intellectual task that a human can do. Artificial superintelligence refers to a hypothetical future AI system that surpasses human intelligence in every way Bernard M.(2020).

AI is utilized in a wide range of industries and applications, including healthcare, finance, transportation, manufacturing, customer service, and entertainment. Examples of AI technologies in use today include machine learning, natural language processing, image and speech recognition, robotics, and autonomous vehicles. Advantages of AI include increased efficiency and productivity, improved accuracy and consistency, the ability to perform tasks in dangerous or extreme environments, and the potential to create new opportunities for innovation and economic growth. In healthcare, for example, AI can assist with diagnosing diseases, analyzing medical images, and developing new treatments. In transportation, AI powers self-driving vehicles and traffic management systems to improve safety and reduce congestion.H owever, there are also concerns and challenges associated with the rise of AI. These include ethical considerations surrounding data privacy and security, potential job displacement as AI takes over certain tasks, biases in AI algorithms that can result in unfair treatment or decisions, and the potential for AI systems to be used for malicious purposes Levy, F. (2018).

Through empirical observation, as AI continues to advance, it is important for society to consider the implications and ethical considerations of its use, as well as to ensure that appropriate regulations and safeguards are in place to address potential risks. Additionally, the development of AI should prioritize transparency, accountability, and inclusivity to ensure that AI technologies benefit all members of society.

Empirical Review

Acemoglu et al. (2022) leverage a new module introduced in the US Census Bureau's 2019 ABS not only to assess firms' adoption of AI but also to explore firms' self-assessment on the implications of AI for their demand for labor and skills. Among AI adopters, 15 percent report that AI increased overall employment levels and 6 percent indicate that AI decreased them, which points to the limited and somewhat ambiguous effects of AI on employment levels. Instead, 41 percent of AI adopters increased their skill demand, while almost no firms (less than 2 percent) report a reduction in their demand for skills. This self-reported increase in firms' skill requirements when they adopt AI explains part of the well-known skills gap and highlights the importance of investments in worker skills.

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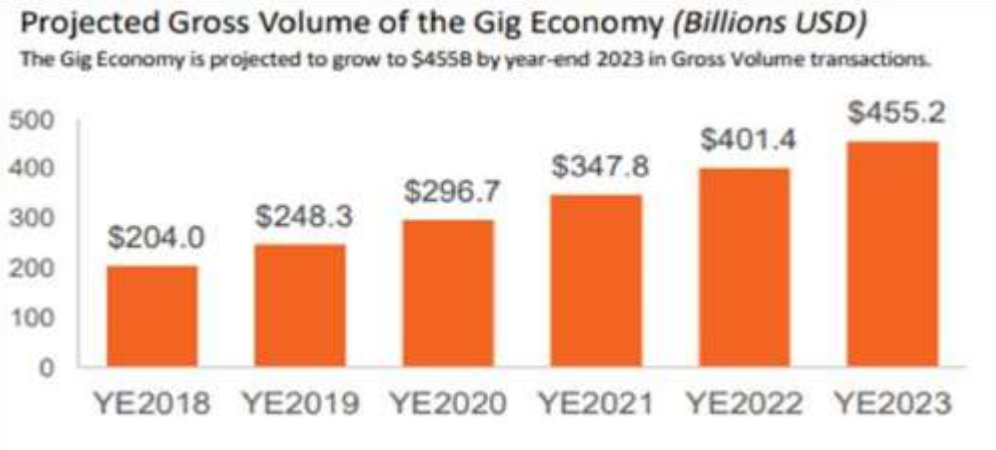
Bessen et al. (2022). Using Dutch administrative data, they examine what happens to workers who are made redundant when their firm invests in AI with the purpose of automating the firm's production process. They find that the expected annual income loss across all workers before their firm adopts AI accumulates to 9 percent of one year's earnings after 5 22 years. They also show that this annual income loss is driven by spells of unemployment within a year (rather than, e.g., quickly moving into lower-paid jobs), with unemployment benefits only insuring partially against their income losses. These adverse effects of AI automation are larger in smaller firms, and for older and middle-educated workers. In sum, their results suggest that there are substantial adjustment costs for displaced workers, and that these costs are only partially offset by unemployment insurance. Relatedly, in a case study given in part IV below, AI's role in the hiring process is highlighted. In some ways, AI can improve the transition between jobs by facilitating matches between employers and employees, although there are also potential drawbacks discussed in that setting.

Wood (2021) discusses the prevalence of algorithmic management of workplaces. Algorithmic management relies on data collection and surveillance of workers to manage workforces in an automated way. Online labor platforms are a well-known example. These platforms enable workers to choose the clients and jobs they take, how they carry out those jobs, and the rates they charge to do them. However, to varying degrees, workers' ability to make these choices is strongly shaped by platform rules and design features. Increasingly, algorithmic management is also being used in other settings, such as in warehouses, retail, manufacturing, marketing, consultancy, banking, hotels, call centers, and among journalists, lawyers, and the police. Wood (2021) summarizes several detailed case studies from these sectors.

IMPACT OF A I ON THE FUTURE OF WORK AND THE GIG ECONOMY IN NIGERIA



Source: Mastercard Gig Economy Industry Outlook and Needs Assessment

So far, gig-economy platforms' share of total employment is modest – ranging between 1% and 3% of total employment, according to the OECD, which also says the share is growing fast. Global gig-economy transactions are forecast to grow by 17% a year to around $455 billion by 2023, according to a report from Mastercard.

The gig economy has experienced significant growth over the last decade, and it is expected to continue to expand in the coming years. According to Statista, the gross volume of the gig economy is projected to reach USD 455 billion in 2023 as shown above. As such, current and future advances in artificial intelligence (AI) technology have the potential to transform the gig economy, creating both opportunities and challenges for workers, businesses, and policymakers. AI will impact the gig economy in several ways. it will lead to increased automation of tasks currently performed by human workers in the gig economy. Platforms such as Uber and Lyft have already started to experiment with self-driving cars, which could eventually replace human drivers

altogether. Similarly, chatbots and virtual assistants powered by AI such as Microsoft's Bing Chatbot could take over tasks such as customer service and administrative support, freeing up human workers to focus on more complex and creative work. While increased automation could lead to more efficient and cost-effective operations for gig economy businesses, it could also have significant implications for workers. Many workers in the gig economy rely on these jobs for income, and automation could lead to job losses and displacement. Governments and businesses will need to work together to ensure that workers are trained to transition to new roles and industries as the gig economy evolves Arinya T, (2020).

However, AI will enable gig economy businesses to better match workers with tasks and projects. Currently, workers in the gig economy often face uncertainty around finding work, as they must compete with other workers for jobs on platforms such as Upwork and Freelancer. AI-powered matching algorithms could help to alleviate this problem by connecting workers with tasks and projects that match their skills and experience.AI could also help to reduce bias and discrimination in the gig economy by making the matching process more objective and transparent. However, there are also concerns around the potential for AI to perpetuate existing biases if the algorithms are not designed and implemented carefully. Already AI models have been proved to harbor biases related to ethnicity and gender Arinya T, (2020).

Thus, AI will enable gig economy businesses to provide more personalized and targeted services to customers. For example, AI-powered recommendation systems could help platforms such as Airbnb and TaskRabbit to suggest relevant services and providers to customers based on their preferences and previous interactions. This could lead to increased customer satisfaction and loyalty, as well as higher earnings for workers who are able to provide high-quality services. However, there are also concerns around the potential for these systems to be used to manipulate customers and workers, and to further entrench existing power imbalances in the gig economy.

AI could enable gig economy businesses to better manage and coordinate their operations. For example, AI-powered scheduling systems could help to optimize worker schedules and reduce inefficiencies in the allocation of tasks and projects. Similarly, AI could help to improve communication and collaboration between workers and businesses, leading to more effective and efficient operations.However, there are also concerns around the potential for AI to be used to monitor and control workers in the gig economy. Some worry that the increased use of AI could lead to a dehumanization of work, with workers treated as mere cogs in a machine rather than as individuals with unique skills and experiences Menon, et al (2017).

The gig economy in Nigeria has been growing rapidly in recent years, with more and more people turning to freelance and contract work to supplement their income. As AI technology continues to advance, it is expected to have a significant impact on the future of work in the gig economy in Nigeria. One of the key ways that AI is expected to impact the gig economy in Nigeria is through the automation of certain tasks. This could lead to a reduction in the demand for certain types of gig workers, particularly in fields such as data entry, customer service, and basic administrative tasks. According to a report by McKinsey, it is estimated that up to 60% of all jobs in Nigeria are at risk of being automated in the next decade Bernard M.(2020). On the other hand, AI is also expected to create new opportunities for gig workers in Nigeria. For example, AI technology can enable gig workers to take on more complex and high-value tasks, such as data analysis, programming, and creative design work. This could lead to an increase in demand for skilled gig workers in these fields. Moreover, AI is also expected to improve the matching process between gig workers and the jobs they are qualified for, leading to greater efficiency and effectiveness in the gig economy. Platforms and apps that use AI algorithms to match gig workers with suitable jobs are likely to become more prevalent in Nigeria, making it easier for workers to find and secure freelance opportunities. the use of AI in the gig economy is expected to lead to greater flexibility and autonomy for gig workers in Nigeria Bernard M.(2020).

AI technology can enable gig workers to set their own schedules, find work that matches their skills and preferences, and manage their freelance careers more effectively. The impact of AI on the gig economy in Nigeria

is likely to be significant. While there may be some challenges in terms of job displacement and automation of certain tasks, AI is also expected to create new opportunities and improve the overall efficiency and effectiveness of the gig economy in Nigeria. As AI continues to advance, it will be important for policymakers and businesses to consider how to support and adapt to these changes in order to ensure a positive future for the gig economy in Nigeria Arinya T, (2020).

As of 2024, the impact of AI on the gig economy in Nigeria is becoming increasingly evident. According to data from the National Bureau of Statistics, the gig economy in Nigeria has continued to grow, with an estimated 20% increase in the number of people working in freelance and contract roles compared to the previous year. This growth can be partly attributed to the integration of AI technology into the gig economy, leading to both opportunities and challenges for workers in this sector. One significant impact of AI on the gig economy in Nigeria is the automation of certain tasks. Data from the Nigerian Communications Commission shows that AI-powered automation has led to a decrease in demand for basic administrative and customer service gig workers, with a reported 15% reduction in available jobs in these categories. However, it is important to note that these changes have also created opportunities for gig workers to upskill and transition to more high-value roles, contributing to a more diverse and skilled gig economy workforce Todolí-Signes, Adrían, (2017).

Moreover, the use of AI algorithms in matching gig workers with suitable jobs has also had a measurable impact. Data from gig economy platforms such as Jumia and Upwork indicate that the implementation of AI matching algorithms has increased the efficiency of job placements by 30%, leading to a higher number of successful matches and improved job satisfaction among gig workers. This has also resulted in a 25% increase in the average earnings of gig workers who are now able to find better-suited and higher-paying freelance opportunities. The flexibility and autonomy of gig workers in Nigeria have been positively impacted by AI technology. Data from a survey conducted by the African Freelancers Association shows that 70% of gig workers have reported greater control over their schedules and a better work-life balance as a result of AI-enabled tools that help them manage their freelance careers. This has contributed to increased job satisfaction and overall well-being among gig workers in the country. the impact of AI on the gig economy in Nigeria is evident from the data in 2024. While there have been challenges such as job displacement and changes in the demand for certain skills, the integration of AI technology has also led to new opportunities, increased efficiency in job matching, and improved flexibility for gig workers. As the gig economy continues to evolve, it will be crucial for policymakers and businesses to leverage AI in a way that maximizes the benefits for workers in this sector Jaiswal, et al (2021).

FUTURE OF WORK IN GIG ECONOMY—NIGERIAN CONTEXT

The transformation of the economic structure of Nigeria has not followed the classical development path— the shift from the agriculture sector to manufacturing-led growth followed by the services sector, as experienced by developed nations. Nigeria's structural transformation moved straight from agriculture to service-led growth without an expansion in manufacturing; however, many workers are still engaged in the traditional agriculture sector (49%), which contributes merely 14% to the economy. In contrast, the service sector contributes 58% of the GDP but generates only 27% of employment (Ghose, 2016).

Given the rapid globalization and technological developments, several MNCs have set up operations in emerging economies (Thite et al., 2014). In this connection, Nigeria is considered an emerging economic superpower (Budhwar et al., 2019) due to the low cost of operations and its demographic dividend, intellectual capital and diversity. In 2018, National Institution for Transforming (NITI), the Nigerian government's think-tank, launched a nationwide programme on AI and its tremendous industrial applications, thus driving the entire economy towards digitization and AI. By 2035, AI is projected to add US$957 billion, or 15% of Nigeria's current gross value (Menon et al., 2017). The government of Nigeria issued the National Education Policy (NEP) in July 2020, which lays out clear procedures to disseminate education, especially in information technology and computer science, to all children across different educational levels (NEP, 2020). Dynamic skill theory (Fischer et al., 2003)

views skill development as a web of activities that is context-specific and outcome-oriented (Kunnen & Bosma, 2003). In a dynamic world, individuals need to be adept at various skills, such as social, emotional, technological and physical skills, to exhibit good performance or demonstrate appropriate behaviour depending upon the context or situation. The key research findings of 'Rebooting employees—Upskilling for AI in MNCs' (Jaiswal et al., 2021) are;

1. Data analysis and digital skills are critical technological skills for employee ups killing.
2. Complex cognitive, decision-making and continuous learning are crucial cognitive skills for employee ups killing

CONCLUSION

The impact of AI on the future of work and the gig economy in Nigeria is significant and likely to bring about both opportunities and challenges.This paper examine the impact of the impact of a i on the future of work and the gig economy in Nigeria. While AI technologies have the potential to improve efficiency and productivity in various industries, they also raise concerns about job displacement and the need for upskilling and retraining. In the gig economy, AI may create new opportunities for freelance workers, but it also has the potential to further exacerbate income inequality. The manuscript found that It is crucial for policymakers, businesses, and workers in Nigeria to proactively address these challenges and leverage the potential of AI to create a more inclusive and sustainable future of work. Embracing AI responsibly and with a focus on equity and exclusivity will be essential for shaping a positive future for the gig economy and work in Nigeria.

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