THE IMPACT OF ARTIFICIAL INTELLIGENCE ON EMPLOYABILITY AND WORK ETHICS OF CIVIL SERVANTS IN IMO State, NIGERIA.

By

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ABSTRACT

Artificial Intelligence (AI) has made a significant impact on employment globally, while AI has the potential to robotize repetitive tasks and improve efficiency and accuracy in various fields, there is no gain saying that many jobs can be replaced by intelligent machines on the employment landscape and work ethics within civil servants in Imo State. This can lead to job losses in some fields but can also create new employment opportunities in technology and AI-related sectors, such as software development and data engineering. The study looked into specific industries and sectors in Imo State to assess their susceptibility to AI driven changes. An empirical approach developed through interview and questionnaire was adopted in this study. The results show that AI has increased the need for skilled workers. The overall objective of this study is to examine the impacts of artificial intelligence on work ethics and employability in Imo State. In furtherance, the study highlights the need for policy makers, employers and educators to develop adequate strategies that will boost employability, and promote continuous learning in the work force.

Keywords: Artificial Intelligence, Employability, work ethics, civil servants.

Introduction

The knowledge of artificial intelligence have brought about numerous innovations in technology and the various aspects of human life and the global workforce at large. As AI continues to advance it is a call for concern of its impact and effect in Imo State employability and work ethics. This article aims to investigate the perceived effects of AI on employability and work ethics within the State taking into core cognizance the opportunities and challenges. Artificial Intelligence (AI) is "a system's ability to interpret external data correctly, to learn from such data, and to use learnings to achieve specific goals and tasks through flexible adaptation" (Kaplan and Haenlein, 2019). Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy (Goel and Davies, 2017).

AI refers to the various techniques that vary in complicacy and share a common result. It is the imitation of human cognition. The ability of a machine to use schema to analyze their environment, learn from data and use what has been observed to take actions and make decisions with some level of independence in order to achieve specific goals or objectives (Fadel, 2024). AI systems are systems which have the capacity to process data and

information in a pattern that depicts intelligent behaviour, which includes aspects of reasoning, perception, learning, prediction and planning (Shanbhogue 2023).

Artificial Intelligence in education refers to the application of artificial intelligence (AI) for supporting student learning outcomes and enhancement of educational goals, including educational administration. AI refers to the capacities of computing systems to perform cognitive tasks associated with human minds (Wamba-Taguimdje et al., 2020). As such AI may cover a varieties of technologies and methods, such as machine learning, natural language processing, and data mining. AI refers to machine-based systems that can, given a set of human-defined objectives, make predictions, recommendations, or decisions that influence real or virtual environments. AI systems interact with us and act on our environment, either directly or indirectly. Often, they appear to operate autonomously, and can adapt their behaviour by learning about the context (*UNICEF (2021).*

"Artificial intelligence" is any artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets (Gilbert, 2023). AI requires specialized hardware and software for writing and training machine learning algorithms. No single programming language is used exclusively in AI, but Python, R, Java, C++ and Julia are all popular languages among AI developers. The need for new technology skills is growing, but traditional educational approaches are not keeping up with the need. Artificial intelligence (AI), robotization and digitalization are changing the operation of many enterprises. The constant demand on workers to keep improving themselves in order to be relevant has resulted in changes to work patterns. Businesses need to spend more now in order to upgrade the workers if they want to handle the challenges posed by the digital revolution. "AI took a major leap with Generative AI and its ability to disrupt the way we work because of its ability to create content that profoundly supports human expertise and skills-writing memos and reports, designing website graphics, creating personalized marketing strategies, and curating employee learning programs, for example."(Deloitte, 2023). The changing needs of contemporary firms are often not adequately met by conventional methods of educators. Everything may now be customized; the era of mass manufacturing is finished. The study of artificial intelligence may be able to address these problems. Based on an employee's learning preferences, interest, and skills, artificial intelligence may create tailored training packages. Staff development and digital accomplishment might undergo a full transformation due to the AI courses that offers scalable, affordable, and adaptable solutions. By considering such advantageous factors, this study aims to initiate AI-driven training programmes that may aid employees in acquiring new skills that helps to improvise the proficiency. Courses in the artificial intelligence often cover such ground as the technology's benefits and drawbacks, proper data handling and ethical issues. The information on safe practices on AI usage, emerging trends and threats might be useful for training institutions, policymakers, human resources professionals and employers. This goal is in keeping with the present discourse around AI and the future of employment, thus it should be really helpful. Our long term goal is to train employees who can thrive in this era of extraordinary transformation. This can only be accomplished if all parties concerned have access to the data necessary to respond imaginatively to changing conditions, use AI effectively, and adapt to new environment.

Impact of AI on Workforce

AI's impact on the workforce is multifaceted. It involves the automation of repetitive and routine tasks, changing skill requirements, and job displacement. This can be beneficial for employees as it frees them up to focus on more complex and creative work, but it can also create concerns about job displacement and changes in the demand for certain types of jobs. However, AI is also creating new job opportunities, especially in data analytics, machine learning, and AI development. Despite these potential benefits, there are also concerns about the drawbacks of implementing AI on a larger scale in the workforce. One potential concern is job displacement, which can lead to unemployment and the need for reskilling and up-skilling. Another concern is the potential for bias and discrimination in algorithms, which can have negative consequences for marginalized individuals and communities. Privacy and security are also major concerns regarding the impact of AI on the workforce. As AI becomes more advanced, it is important to ensure that personal data is protected, and AI systems are secure against cyber-attacks. Nonetheless, AI can also enhance efficiency and productivity, and its advancements may lead to new job opportunities for workers with the right skills and knowledge. AI is rapidly transforming the workforce, with significant changes already apparent in the job market and employment landscape. As AI continues to develop and evolve, businesses and workers must adapt to stay competitive and efficient. In this blog, we will explore how AI is affecting the workforce, how it can help workers and businesses become more effective, and the potential benefits and drawbacks of implementing AI on a larger scale.

Potential Effects of AI on Employability of Imo State Workers

Artificial Intelligence (AI) is transforming the labour market, bringing new types of jobs and enhancing existing ones. As AI continues to develop and evolve, it is paramount to understand how it is impacting the labour market, the types of new jobs that are emerging, and the potential impact on unemployment rates and the economy as a whole. According to a report by (McKinsey & Company, 2020), AI is expected to create 20-50 million new jobs globally by 2030. These new jobs will be in a range of industries, including healthcare, manufacturing, and finance.

Job Displacement: They impact of AI on employment are related to job displacement, augmentation, and creation. While some jobs may be displaced, others will see growth due to AI implementation, particularly in fields like AI modeling and business intelligence (WEF, 2023a). There is strong potential for the creation of new jobs, as can be observed over recent years. Generative AI models may increase the value of jobs requiring social interactions, while the augmentation potential of AI is deemed larger than its automation potential, affecting a wide range of CEOs (69 per cent) recognize the need for their workforce to develop new skills to leverage generative AI effectively (PWC, 2024). AI powered automation could lead to the displacement of workers in certain sectors, such as manufacturing, customer service, and data entry. This could result in unemployment and economic instability if not managed effectively.

Skill Upgrading: In order to remain competitive in the AI era, workers may need to acquire new skills or up-skill in areas such as programming, data analysis, and critical thinking. This could lead to increased demand for education and training programs. The impact of AI on unemployment rates will also vary by region and industry. For example, the manufacturing

industry is likely to experience significant job displacement as a result of AI, while the healthcare and education industries are expected to see significant job growth. In addition to its impact on employment, AI also has the potential to impact the economy as a whole. AI can lead to increased productivity and output, which can stimulate economic growth. However, there are concerns about the potential for AI to widen the wealth gap, as those with the skills and knowledge to work with AI may earn higher salaries than those who do not have these skills.

The Impact of AI on Work Ethics in Imo State.

As AI becomes increasingly integrated into the workplace, it is likely to have a significant impact on work ethics in Imo State. Here are some key areas to consider:

Efficiency and Productivity: Labour productivity can be defined as the average economic output that each individual worker can produce in a certain amount of time. Its levels depend on the technologies workers have at their working environment and human capital, among other factors (Cazes and Verick, 2012). Evidence suggests that technological innovations play a key role in productivity growth: between 1980 and 2018, 40 per cent of variation in labour productivity in emerging markets and developing economies was due to technological change, and in advanced economies it was about 50 per cent (Dieppe, 2021, p.365). The PWC Global CEO Survey from 2024 shows that 64 per cent of CEOs expect generative AI to increase the efficiency of their employees' time at work (PWC, 2024). AI powered automation can streamline processes and increase productivity. This could lead to higher expectations for workers to meet more demanding performance standards. If not managed properly, the pressure to constantly improve efficiency and productivity could lead to burnout and decreased job satisfaction.

Literature Review

The literature on AI and employability highlights the potential benefits of increased productivity, efficiency, and innovation. However, it also raises concerns about job displacement, skills obsolescence, and the need for workers to adapt to new technologies (Manyinka et al., 2017; Frey & Osborne, 2017). Artificial Intelligence (AI) has been a subject of fascination and debate for decades. As the field has evolved, so too have the definitions offered by various experts. In this globally connected highly competition market, more and more business looking for creative ways to reskill their workers, artificial intelligence (AI) has become more popular in the labour force. These endeavours are based on the "tried-and-true" ideas of employee learning, which highlight the need of both workplace instruction and real-world application. As per Knowles' theory of andragogy, it is essential to emphasizing the problem-solving method, analyze autonomy, and find the skill relevance to supports adult self-directed learning. Adaptive feedback, self-directed learning, and customized instruction are the few examples ways that can be given to the employees for their better performance and influencing the sled learning. AI training programmes usually covers all these demands by developing a database and creating a data pattern to understand the people. By using AI algorithms to assess comments, grades, and choices, business may increase employee engagement, motivation, and retention. Based on the needs and interests of their employee, the trainer may adjust their classes.

"UTAUT" and "TAM" are well-known theories that have prompted discussions on incorporating AI into the development and training. According to these theories, consumers are more likely to accept practical, easy-to-use technology. Artificial Intelligence (AI) powered training programmes that solve skill shortages, improve learning outcomes, and increase workplace efficiency will be welcomed by workers and stakeholders. Firms should assess employee interactions on the job, provide proper resources, and promote inquiry, discovery, and continuous development to guarantee a successful launch. Nils Nilsson (1998) went further to opine that "the design and construction of computer systems that can perform tasks that, if performed by humans, would require intelligence". Russell and Norvig (2003) "the study of agents that receive percepts from the environment and perform actions that affect the environment." Stuart Russell (2019): "the science and engineering of intelligent agents." Yann LeCun (2023): "The ability of machines to learn from data and improve their performance over time without being explicitly programmed." AI is seen as the ability to perform tasks that would demand human intelligence and capacity to improve the performance through accumulated experience. Geoffrey Hinton (2023) opined AI as a system that can reason, learn, and act autonomously." In Nigeria, the impact of AI on employability is still in its infancy, with limited research on the subject. It is important to note that AI is a rapidly evolving field. Artificial intelligence for education and training emphasizes adaptable and individualized learning. AI can tailor learning to each employee's requirements. Personalized learning outperforms standard methods in engagement, motivation, and memory retention. Artificial intelligence-based adaptive learning interventions may enhance learning outcomes across a wide range of learner demographics and topic areas, strongly suggesting the usage of AI to improve training outcomes.

However, it is to be noted that it is essential to address the ethical and social issues before using AI for training and development purposes in full swing. According to the study, it has been noted that the source of algorithmic bias is uncontrolled prejudice in training data, which can be result in the continuation of unfairness and discrimination. Considering this factor, any business that is serious about offering equitable training results to address the security and privacy, as well as the need for explicit consent, are raised by the use of AI to power training programmes. As opined by Njoku (2022) to preserve the clients confidence and secure their personal data, business need to adhere to stringent ethical standards and data protection laws as well. Digital recruiting has gone through different phases since the growth of computer use in the 1990s. Initially, it revolved around websites aggregating job offers, which expanded from the national to global platforms such as Linkedin. With the vast number of candidates and offers on these platforms, recruiters have increasingly turned to AI since the 2010s to narrow down opportunities (Black and Van Esch, 2020). As of 2023, 41 per cent of large enterprises in the world were deploying AI to enhance recruiting and human resources (HR) processes (IBM, 2023). Evidence suggests that HR managers recognize both the advantages and drawbacks of AI usage. On one hand, it enables and drawbacks of AI usage. On access a larger pool of candidates, which can be assessed and ranked in a more unbiased manner compared to analogue methods. On the other hand, concerns arise regarding data validity and ethical considerations in candidate data mining (Radonijic, Duarte and Pereira, 2022; VronTis et al., 2022). Several tools have been developed to facilitate hiring processes. As Gupta and Mishra (2022) report, there are AI tools that pre-assess candidates (e.g., Brazen), screen large numbers of candidate profiles (e.g., Mya), and collect feedback from assessors in different stages of the process (e.g., Olivia) and provide questionnaires and test

(e.g., Pymetrics). Additionally, web-scraping applications that infer candidates' characteristics based on their social media profiles have also been developing over the past decade, raising questions about the ethical implications of AI in recruitment (Dattner et al., 2019). In summary, the literature emphasizes the usefulness of AI in processing large amounts of data, while also highlighting the risks that may arise from such practices. The possibilities that AI could bring in terms of labour mobility-increasing the ability to hire personnel based in other countries or who speak different languages- are another promising area to explore through empirical research.

Purpose of the Study

The study is set to:

1. Investigate the impact of artificial intelligence (AI) on employability and work ethics of civil servants in Imo State.
2. Examine the effects of AI on the employability of workers in Imo State.
3. Identify the skills required for workers to thrive in an AI-driven economy in Imo State.
4. Develop strategies for policymakers, educators, and employers to enhance employability and promote lifelong learning in the face of AI-driven change.

Research Questions

The following research questions were formulated by the researchers in line with the purpose and guided the study:

1. What skills are required for workers to thrive in an AI-driven economy in Imo State?
2. What are the effects of AI on the employability of workers in Imo State?
3. What can policymakers, educators and employers do to develop strategies to enhance employability and promote lifelong learning in the face of AI-driven change?

Hypotheses

The adoption of AI in Imo State will lead to a significant increase in the demand for skilled workers. The hypotheses were formulated and are tested at 0.05 level of significance.

H_{01}: There is no significant difference in the mean scores indicating the adoption of AI will not lead to an increase in the demand for skilled workers.

H_{02}: There is no significant difference in the mean scores of workers on how the integration of AI will not lead to a change in work ethics.

H_{03}: Artificial intelligence (AI) has no significant impact on employability and work ethics in Imo, State, Nigeria.

Methodology

The creation of training programmes by AI with the goal of reskilling and up-skilling workers requires a comprehensive research strategy that considers several points likewise, "assessing abilities", "responsibilities", and "performance evaluation" are the most essential primary factors that is to be considered in the first data collection. This research study collected the data through the use of statistical analysis and interview from Imo State secretariat workers. The population of the study was gotten from six ministries that comprises of 500 workers. The researchers used ministry of industry in the population of the study. The face validity of the instrument was established by three experts (all from education economics) while internal consistency was established on a one shot method of administration using qualtrics. The

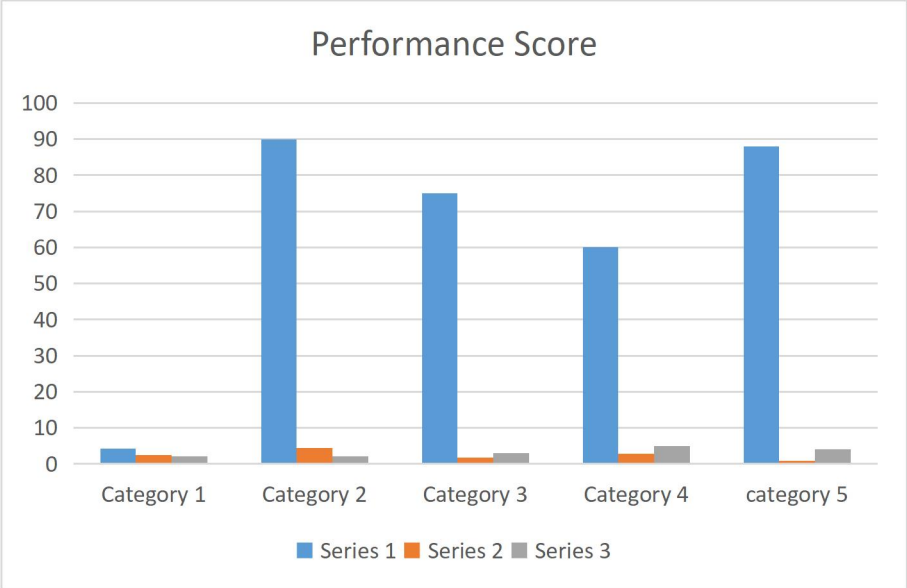
strategy uses statistical techniques to extract useful qualities of workers' abilities, preferences and performances from domain data. Building AI systems that can alter training courses depending on the accumulated attributes. Intelligent training systems that provide customized instruction need research into AI methods. The developed AI models are evaluated using recall, accuracy, and precision. Feedback surveys and performance reviews may also assess usefulness and its satisfaction. After evaluation, AI-powered training courses are imported into the civil service commission or specialist training platform and made accessible to workers. To ensure system performance and scalability: stakeholder, IT teams, and training administrators must work together throughout. The study's strategy monitors and improves AI powered training courses to ensure their performance and relevance. New data and insights are added to AI models periodically. Business may improve workers' flexibility and adaptability by carefully building and delivering AI-driven training courses. This helps in fast-paced and high-stakes jobs.

Analysis and Interpretation

The results and our interpretation of our research on The Impact of Artificial Intelligence on Employability and Work Ethics of Civil Servants in Imo State are presented here. By meticulously following the previously outlined procedure, the accuracy and reliability of the findings were verified. We employed key theories and models together with hypothetical data to accomplish the study's aim. What follows is an assumption based on a hypothetical survey that a multinational corporation conducted amongst its many departments and offices to get a better understanding of its workers' roles, skills, and opportunities for growth and preferred means of professional development. The study also sought to identify important performance metrics. Therefore, the data preparation process included cleaning, normalizing and feature extraction. The pre-processed dataset is summarized in Table 1, which highlights critical factors to aid in staff reskilling activities and attitudes towards work ethics.

Table 1: What skills are required for workers to thrive in an AI economy

Employee ID	Job Role	Skill Level	Training Preference	Performance Score
1	Hon. commissioner	Intermediate	Online courses	80
2	Perm. Sec	Advanced	Workshops	90
3	Director	Intermediate	Webinars	75
4	Deputy Director	Beginners	On-the-job training	60
5	DAF	Intermediate	Seminars	88



Employee ID

Table 1 demonstrated the summary of the preprocessed employee data that has been collected through the survey process. The primary aim of this data is illuminating important details about job duties, skill sets, training preferences, and performance reviews. Moreover, it also can be observed that the dataset contains a diverse mix of experiences and knowledge from a variety of fields, including ministry of commerce, ministry of industry, ministry of entrepreneurship, ministry of works, and ministry of health. Workers have shown a preference for a variety of training methods, including but not limited to online classes, seminars, webinars, workshops, and even learning as they go. Training efficacy is shown by performance ratings, which is ranging from 60 to 90.

Factors such as job function, level of competence and preferred training techniques were incorporated in the AI models. A neural network architecture was trained using the dataset to predict employees' performance evaluations based on their profiles. Table 2 summarizes the performance characteristics of the trained model.

Table 2: What are the effects of AI on employability of workers

Metric	Value
Accuracy	0.86
Precision	0.88
Recall	0.80
F1-score	0.83

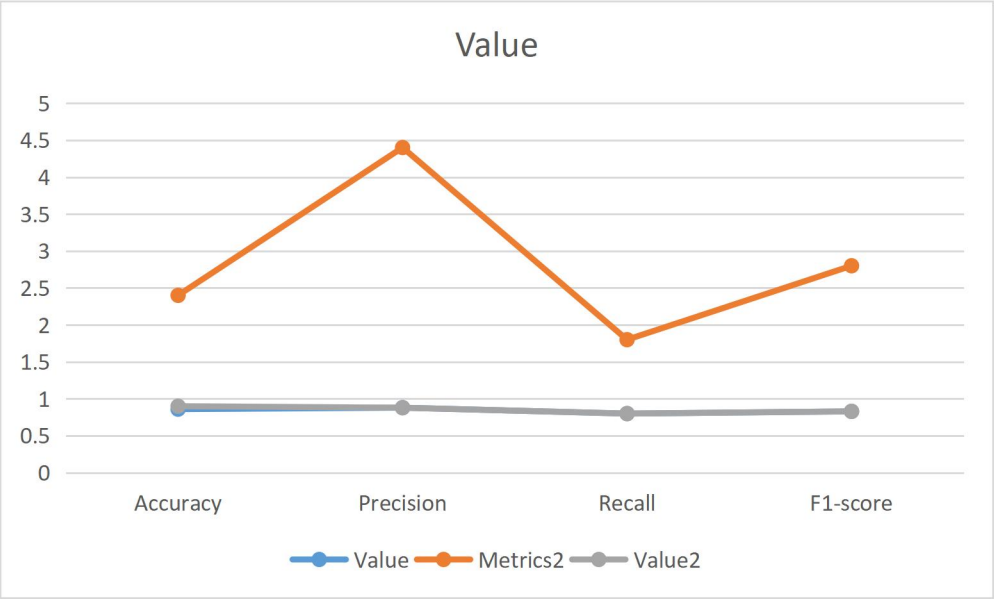


Figure 3: Graphical Representation of the Value

Table 2 shows the generated AI model's performance metrics, which how well it predicts employee performance. The model's accuracy, which is the percentage of true predictions relative to total predictions was 0.86, with a precision of 0.88, the ratio of real positive predictions to all positive predictions- the model clearly know how to find important cases. The model's capacity to catch relevant cases is shown by a recall of 0.80, which is the percentage of genuine positive predictions out of real positives. With an F1-score of 0.83-a harmonic mean of recall and precision-the model is doing well overall. These measures prove that the model is accurate in forecasting how well employees will do their jobs.

Summary and Findings

The study showed that Artificial Intelligence (AI) is used by workers in civil service for work purposes such as: the workers are encouraged to use to source for more information in order to advance in their technical skills. Baker (2013) cited in Eke, Omekwu & Odoh (2014) noted that social media/internet offers a lot of significant opportunities for learning and interactivity and it is not hard to see how workers benefit from social media.

Furthermore, AI-enabled tools are offering valuable solutions to a series of aspects that provide a competitive advantage to work. In relation to logistic barriers and assures in supply chain management, big data analytics can mitigate risk and support knowledge sharing (Zamani et al., 2023). In organizational operations, AI applications allow-cross-domain knowledge sharing to maximize the triangulation of data within and with other parasatals (Enholm et al., 2022). In marketing and sales, AI is used at present for automating e-commerce processes and for customer screening and support via chatbots (Davenport et al., 2020). Artificial Intelligence (AI) improves service offerings, customer experiences and work efficiency.

Research Limitations

The study used constructive data from ministries in the State secretariat from 2019 to 2023 to examine the impact of AI on employability and work ethics using empirical studies. Therefore, the findings obtained in this study are only applicable to empirical reality in Imo State during the sample period. There are three conspicuous shortcomings in this study.

First, only the effects of AI on workers in Imo State were investigated in this study, which is limited by large data particles and small sample data that are factors that reduce the reliability and validity of statistical inference. The digital economy has grown rapidly in the wake of COVID pandemic, and work structures and job types have been greatly affected by this sudden public event.

Secondly, an examination on skills required for workers to thrive in an AI-driven economy based on nearly five years of micro-data (particularly the data obtained from field research) is urgent. When conducting empirical analysis, combining case studies of enterprises that are undergoing digital transformation is very helpful. Although, the instrumental variable method can reveal conclusions regarding causality to a certain extent, these conclusions are not causal inference in the strict sense. Due to the lack of good policy to checkmate the existence of ghost workers and the exact numeration of unskilled workers, the topic cannot be thoroughly evaluated.

In future, researchers can look into policies that influence digital economy on work ethics.

Lastly, the strategies employed by policymakers, educators and employers from State to State. The study focused on a sample of data from Imo State Secretariat, limiting the findings to be partially applicable to other States. Therefore, the sample size of States should be considered in future studies and the possible heterogeneity of AI should be compared and explored extensively by identifying different States according to their level of development.

Suggestion

Artificial intelligence as an open new general technology, represents outstanding and glaring progress in employability and work ethics and is also an essential tool to enhance the economic development of a State through the implementation of effective strategies adopted by the policy makers, educators and employers. However, it also poses many potential risks and social problems. This study helps to ascertain the impact of AI on employability and work ethics on civil servants in Imo State. Its findings reduces the anxiety caused by the fear of machine replacement. According the above research conclusion, the following are outstanding implications that is obtainable.

1. It is of the opinion that education departments should promote the reform of the education and training system and also deepen the coordinated development of industry-university research. The internet of things (IOT), big data, and AI as new digital production factors, have become an important figure in our daily economic activities, bringing about changes in the supply and demand of dynamics of the job market. Findings shows that AI impacts a high level of digital welfare for women and workers in labour-intensive enterprises, but to stimulate spillover of technology dividends in the whole society, it is necessary to dynamically optimize human capital and improve the adaptability of man-machine collaborative work; in order to avert the disruptive effect of AI in the nearest future.

2. Government should provide workshops, seminars for the workers on the usage of AI tools and adequate measures should be put in place for effective implementation by the workers and efficient management by the DAF etc.
3. The employers should develop strategies that support workers who are at risk of displacement and ensure that they have access to training and education to equip them with the skills needed to adapt to new job roles.

Summary

Conclusively, by analyzing the obtained result it has been found that organisations are altering the way they train their employees to be able to cope with the present vast growing trends of technology improvements. Artificial Intelligence (AI)-powered courses combine cutting-edge technology with "tried-and-true" concepts and mixed methodologies to provide more personalized learning experiences. AI may be used by firms and organisations to induce the interest and skills of an employee in order to increase motivation and productivity that could further improve the employee's retention and diligence. However, it is worthy of note the factor that enhances AI-driven training programmes must focus on a few critical areas such as cyber threats and data security. A longitudinal study is needed to ascertain the long term effects of these activities on morale, profitability, productivity and output. In order to maintain the credibility and usefulness of AI-driven training initiatives, ethical concerns such as equality, algorithm bias and data privacy must be addressed adequately. Employees may use these creative products to deliver more interesting and immersive working experience for their employers. For AI-powered training to be successful, the workforce or organization must be prepared in a variety of ways which includes developing proper digital infrastructure, trained workforce and supportive leadership. Furthermore, it is crucial to address the potential loss of jobs due to automation. We must develop strategies that support workers who are at risk of displacement and ensure that they have access to training and education to equip them with the skills needed to adapt to new job roles. Despite the challenges, the integration of AI in job roles has the potential to drive innovation, increase efficiency, and improve our quality of life. By leveraging the full potential of AI, we can create new job opportunities, drive economic growth, and make significant strides in addressing some of the world's most pressing challenges. If the workforce could focus on these specific areas of growth, the marketers can be able to aid the civil service with their digital initiatives and staff professional development. However, to meet up the global trends of Artificial Intelligence (AI) in employability and work ethics, it is paramount that the workers are given proper and adequate training for them to be integrated efficiently in the workforce.

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