



# Transforming Key Industries in Rivers State: The Impact of Automation and Artificial Intelligence on the Future of Work

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## Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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## ABSTRACT

The study investigated automation, artificial intelligence and the future of work in key industries in Rivers State. Four research questions and four corresponding hypotheses were formulated to understand how AI automation relationship s job security, skill requirements, workforce adaptation, employee well-being, and work-life balance in these industries. The research uses a correlational research design and the target population comprises employees from key industries in Rivers State, including manufacturing, agriculture, healthcare, and technology sectors. A stratified random sampling technique was employed to draw a sample size of 54 employees across these industries. The self-structured questionnaire titled "Automation and Artificial Intelligence Integration in Industries Questionnaire (AIIIQ)" and "Future of Work Questionnaire (FWQ)" using a 4-point Likert scale ranging from Very Low Extent (1) to Very High Extent (4). The questionnaire was distributed within the dry season of November 2023 to February 2024. During this period, 54 copies were

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distributed, but only 49 were returned. Of these, 2 were not correctly filled out, leaving the researcher with only 47 valid copies that were used for data analysis. To ensure content validity, the questionnaire was reviewed by experts in the field of Organizational Behaviour and Information and Communication Technology (ICT). The reliability of the instrument was assessed using the test-retest method with a sample of 10 participants which were not part of the main sample size, but within the study's population. The questionnaire was distributed twice at a two-week interval, and the responses were analyzed using the Pearson Product-Moment Correlation (PPMC). A reliability index of .87 was calculated based on the outcomes of this analysis. Mean and standard deviation, was used to answer the research questions, Pearson's Product-Moment Correlation (PPMC), was utilized to test hypotheses at a significance level of 0.05. The findings underscore the critical importance of considering the effects of AI automation on job security, workforce adaptation, employee well-being, and organizational strategies. Conclusion, the study's findings underscore the transformative nature of AI automation on the future of work in key industries in Rivers State. By recognizing and responding to these changes, organizations can harness the full potential of AI automation while mitigating its potential negative impacts. The study recommended that organizations should prioritize employee training and development, offering opportunities for upskilling and reskilling to ensure their workforce remains competitive and adaptable to technological advancements.

*Keywords: Automation; artificial intelligence; future of work; job security; skill requirements; workforce Adaptation; employee well-being; work-life balance; Rivers State; Nigeria.*

## 1. INTRODUCTION

Automation and artificial intelligence (AI) have emerged as transformative forces in industries, reshaping the future of work not only globally but also within specific regions like Rivers State, Nigeria. These technologies encompass a range of advancements, including machine learning, robotics, and data analytics, which collectively are revolutionizing how tasks are performed and enhancing the efficiency and competitiveness of industries. For instance, machine learning algorithms enable computers to learn from data and make decisions without human intervention, while robotics automate physical tasks, leading to increased productivity and accuracy. Data analytics, on the other hand, enables organizations to extract valuable insights from large datasets, informing strategic decision-making and driving innovation [1].

The integration of automation and AI in industries has the potential to significantly impact various sectors, including manufacturing, agriculture, and services. Ananyi and Somieari-Pepple [2] aptly postulated that the integration of Artificial Intelligence (AI) in management, while accompanied by substantial costs, offers a tantalizing array of potential benefits that could reshape the educational landscape in profound ways. For example, in the manufacturing sector, automation can streamline production processes, leading to increased output and cost savings. In agriculture, AI technologies can enhance crop

management practices, improve yields, and mitigate risks. In the services sector, automation can improve customer service through chatbots and enhance operational efficiency through AI-powered analytics. The concern of the government of Nigeria to pull the country out of recession and place her on the path of sustainable growth sounds familiar as all the previous governments in Nigeria had done similarly to neglect the role of education as way out of the present recessing nature the economy [3].

The automation of routine tasks, facilitated by AI-driven systems, has raised concerns about the potential displacement of human workers, particularly in roles that involve repetitive and manual tasks. Scholars like Chinda and Amadi [4] have highlighted the risk of job loss due to automation, emphasizing the need for proactive measures to address this challenge. In Rivers State, the impact of automation and AI on job security is significant, particularly in industries such as manufacturing, agriculture, and services. While automation can lead to the elimination of certain jobs, it also creates new opportunities for employment in roles that complement AI technologies. For example, in manufacturing, automation can lead to the creation of jobs in maintenance, programming, and supervision of automated systems. Similarly, in agriculture, AI technologies can create jobs in data analysis, precision farming, and agricultural robotics. While automation and AI pose challenges to job

security, industries that require human creativity, critical thinking, and interpersonal skills are less likely to be affected, as these skills are difficult to replicate with automation present opportunities for job creation and skill development [5].

Furthermore, the adoption of automation and AI is not only changing the technical skills required but also the soft skills that are increasingly valued in the workplace. Skills such as creativity, problem-solving, emotional intelligence, and adaptability are becoming more important as automation takes over routine tasks [6]. Employers are seeking workers who can collaborate effectively with AI systems, innovate, and adapt to changing work environments. Therefore, workers need to develop a broad range of skills to thrive in a technology-driven economy. With the rise of remote work and digital connectivity, employees may feel pressured to be constantly available and responsive, leading to feelings of burnout and exhaustion [7]. Employers need to be mindful of these challenges and implement policies that promote a healthy work-life balance, such as flexible working hours and clear communication about expectations. Automation can also impact work-life balance, as it may blur the boundaries between work and personal life.

Furthermore, the introduction of automation and AI can also lead to changes in job roles and responsibilities, which can impact employee well-being. For example, employees may need to acquire new skills or adapt to new technologies, which can be stressful and challenging. Employers need to provide support and training to help employees navigate these changes and ensure a smooth transition to a more automated workplace [5]. Additionally, the integration of automation and artificial intelligence (AI) into industries necessitates comprehensive organizational responses and strategies to manage the transition to a more automated workplace effectively. Organizations need to develop strategies that address the impact of automation on job roles, skill requirements, and employee well-being. For example, investing in training programs can help employees acquire the skills needed to work alongside AI technologies, ensuring a smooth transition and minimizing the risk of job displacement [8]

Furthermore, implementing flexible work arrangements can support employees in adapting to the changing work environment. For

example, offering remote work options can help employees achieve a better work-life balance, reducing stress and improving overall well-being [9]. Flexible work arrangements can also help organizations attract and retain top talent, as they demonstrate a commitment to employee satisfaction and work-life balance. Moreover, organizations should prioritize employee well-being throughout the transition to a more automated workplace. This includes providing support for employees who may be experiencing stress or anxiety due to the changes brought about by automation and AI. By prioritizing employee well-being, organizations can ensure that the transition to a more automated workplace is successful and sustainable [10].

Automation and artificial intelligence (AI) into industries in Rivers State presents both opportunities and challenges for the future of revolutionize industries, improving efficiency, productivity, and competitiveness. One of the key opportunities presented by automation and AI is the potential for increased efficiency and productivity. However, they also raise concerns about job security, skill requirements, and employee well-being. It is essential for policymakers, industries, and educational institutions to collaborate and develop strategies that harness the benefits of automation and AI while mitigating their potential drawbacks [7]. By automating routine tasks and leveraging AI-driven systems, industries can streamline operations and reduce costs. For example, in the manufacturing sector, automation can lead to significant improvements in production processes, leading to increased output and cost savings [11]. Similarly, Ananyi and Nwosu [3] noted that cost reduction is another critical area where AI can contribute to the economic enhancement of universities. AI technologies can improve customer service through chatbots and enhance operational efficiency through AI-powered analytics [5].

Nevertheless, the integration of automation and AI also presents challenges, particularly in terms of job security and employee well-being. There is a growing concern about the potential displacement of human workers, especially in roles that involve repetitive and manual tasks. Additionally, the blurring of boundaries between work and personal life due to automation and digital connectivity can lead to increased stress and burnout among employees. Hence, it is crucial for organizations to prioritize employee

well-being and work-life balance throughout the transition to a more automated workplace. The integration of automation and AI in industries in Rivers State offers immense potential for enhancing efficiency, productivity, and competitiveness. However, it also poses challenges that need to be addressed. By understanding the implications of these technologies and implementing appropriate strategies, Rivers State can ensure a sustainable future of work that benefits both businesses and employees.

### 1.1 Statement of the Problem

The integration of automation and artificial intelligence (AI) into industries in Rivers State, Nigeria, presents a significant opportunity for transforming the future of work. However, despite the recognized potential of these technologies, there is a notable gap in understanding their effective utilization within key industries in the region. Studies indicate that AI has been underutilized in many industries in Rivers State, leading to missed opportunities for enhancing efficiency, productivity, and competitiveness. The underutilization of AI technologies in Rivers State's industries is exacerbated by economic challenges, hindering their effective adoption and integration and thus stifling growth potential. Furthermore, there exists a lack of understanding regarding the necessary skill changes and workforce adaptation required for successful integration of automation and AI into the workplace. Additionally, the potential negative impact of automation and AI on employee well-being and work-life balance remains inadequately explored, raising concerns. Moreover, organizations may encounter challenges related to organizational culture, leadership, and infrastructure when implementing automation and AI, which could lead to inefficiencies and disruptions without proper strategies in place. Therefore, addressing these objectives, this study aims to contribute to the existing body of knowledge on the integration of automation and AI in industries, particularly in the context of Rivers State, Nigeria. The findings of this study are expected to provide valuable insights for policymakers, industries, and educational institutions in the region, guiding them in harnessing the benefits of automation and AI while mitigating potential challenges. Ultimately, this study seeks to inform strategic decision-making and promote sustainable growth and development in key industries in Rivers State.

### 1.2 Aim and Objectives of the Study

The aim of this study is to investigate automation, artificial intelligence, and the future of work in key industries in Rivers State. Specifically the objectives are to:

- Analyze the extent impact of AI automation on job security and the future of work in key industries in Rivers State.
- Explore the extent changes in skill requirements and workforce adaptation and the future of work in key industries in Rivers State.
- Examine the extent effects of AI automation on employee well-being and work-life balance and the future of work in key industries in Rivers State.
- Evaluate the extent organizational responses and strategies in managing AI transition to a more automated workplace and the future of work in key industries in Rivers State.

### 1.3 Research Questions

Based on the formulated research objectives, the following research questions guided the study:

- To what extent does the impact of AI automation on job security influence the future of work in key industries in Rivers State?
- To what extent do the changes in skill requirements and workforce adaptation influence the future of work in key industries in Rivers State?
- To what extent do the effects of AI automation on employee well-being and work-life balance influence the future of work in key industries in Rivers State?
- To what extent do organizational responses and strategies in managing AI transition to a more automated workplace influence the future of work in key industries in Rivers State?

### 1.4 Hypotheses

The following hypotheses were generated to guide the study:

- **Ho<sub>1</sub>:** The impact of AI automation on job security does not significantly relate the future of work in key industries in Rivers State.

- **Ho<sub>2</sub>**: The change in skill requirements and workforce adaptation does not significantly relate the future of work in key industries in Rivers State.
- **Ho<sub>3</sub>**: The effect of AI automation on employee well-being and work-life balance does not significantly relate the future of work in key industries in Rivers State.
- **Ho<sub>4</sub>**: The organizational responses and strategies in managing AI transition to a more automated workplace do not significantly relate the future of work in key industries in Rivers State.

### 1.5 Conceptual Framework

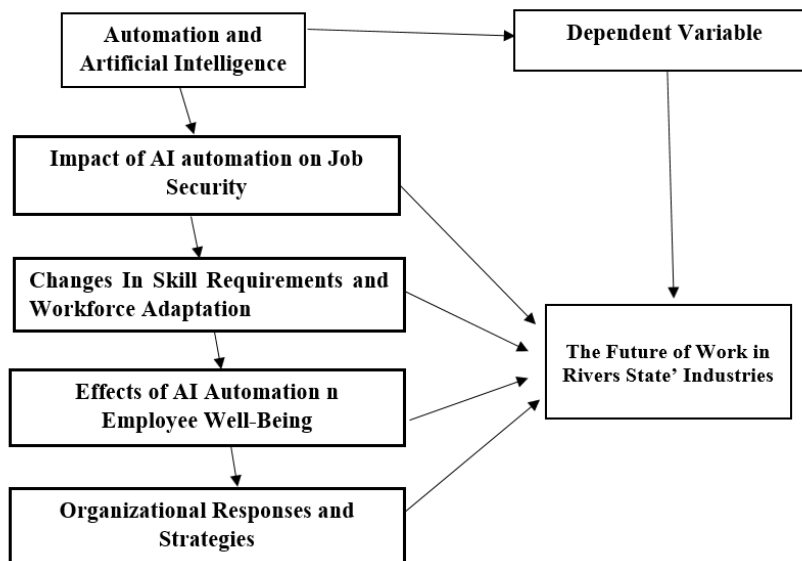
The conceptual framework discussed the various concepts and construct relevant to the stated objectives.

### 1.6 Theoretical Underpinning

Organizational Change Theory, formulated by Kurt Lewin in the 1940s and 1950s, remains a cornerstone in the field of organizational studies, providing a framework for understanding how organizations can effectively manage change processes [12]. At its core, the theory emphasizes that change is a complex and multifaceted process that requires careful planning, execution, and support. The first stage of the theory, unfreezing, involves preparing the organization for change by creating a sense of

urgency and breaking down existing mindsets and routines. This stage is crucial as it sets the foundation for successful change implementation by opening the organization to new ideas and possibilities.

The second stage, change, is where the actual change initiatives are implemented. This stage can be challenging as it often involves making significant structural changes, implementing new processes, and adopting new technologies. Effective leadership is essential during this stage to guide employees through the change process, address resistance, and ensure that the change is implemented smoothly. Communication also plays a critical role in this stage, as clear and transparent communication helps to alleviate fears and concerns among employees and fosters buy-in for the change initiatives. Effective leadership is crucial at all stages of the change process, from creating a sense of urgency to ensuring that the change is successfully implemented and sustained. However, Ololube [12] revealed in ELM studies, the crisis of character of leaders is frightening especially in sub-Saharan Africa of several factors. Not taking into consideration that core qualities of principled leaders regulate ELM. As such, leaders are therefore strategic to human and institutional improvement, development and innovation. No matter what condition educational institutions at all levels find themselves, they did not unintentionally get there.



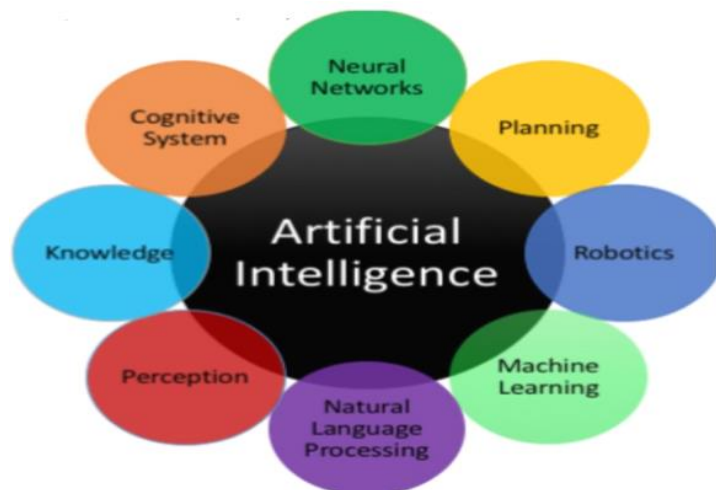
**Chart 1. Researcher framework for the investigation of automation, artificial intelligence and the future of work in key industries in Rivers State**

Additionally, the theory recognizes the role of organizational culture in influencing change efforts. An organization with a strong culture that values innovation and continuous improvement is more likely to successfully implement change than one with a rigid or resistant culture. It is essential for organizations to assess their culture and make any necessary changes to align it with their change goals. The Organizational Change Theory emphasizes the importance of organizational culture in influencing change efforts. A strong organizational culture that values innovation and continuous improvement can facilitate the integration of a more supportive environment for change [13]. Conversely, understanding the role of automated technological integration culture, organizations can take steps to cultivate a culture that is conducive to the successful integration of automation and AI technologies. The final stage of the theory, refreezing, involves stabilizing the organization after the change and embedding the new ways of working into the organizational culture. Kpee (2019) in the handbook of research, containing a collection of over twenty theories drawn from seasoned texts and completed research work to enable students, teachers of research methods, as well as all interested in carrying out research work, noted that this third stage of organizational change is essential for ensuring that the change is sustained over time and becomes the new norm within the organization.

The Organizational Change Theory offers several significant benefits to this study on automation, artificial intelligence, and the future

of work in key industries in Rivers State. Firstly, the theory provides a structured framework for understanding and managing change within organizations. By following the stages of unfreezing, change, and refreezing, organizations can systematically plan and implement change initiatives related to the integration of automation and AI technologies. Leaders who understand the principles of organizational change can effectively communicate the need for change, motivate employees to embrace new technologies, and provide the necessary support and resources to facilitate the change process [13,14]. This aspect of the theory is particularly relevant to this study, as it highlights the role of leadership in ensuring that the integration of automation and AI technologies is successful.

This framework is particularly valuable in the context of this study, as it helps to ensure that changes are implemented in a strategic and coordinated manner, minimizing disruptions and maximizing the chances of success. By providing a structured framework for understanding and managing change, emphasizing the importance of leadership and organizational culture, and highlighting the role of communication, the theory can help organizations navigate the challenges and opportunities associated with the integration of automation and AI technologies. Therefore, applying the principles of Organizational Change Theory, organizations in Rivers State can increase their chances of successfully integrating automation and AI technologies into their operations, thereby enhancing their efficiency, productivity, and competitiveness in the global marketplace.



**Fig. 1. Elements of artificial intelligence**  
*Adapted by best Tech. guru [15]*

## 1.7 Overview of Automation and Artificial Intelligence

Automation and artificial intelligence (AI) have emerged as transformative forces in industries worldwide, including those in Rivers State, Nigeria [2]. These technologies encompass a wide range of applications, from robotic process automation to advanced machine learning algorithms. Automation involves the use of technology to perform tasks that were previously carried out by humans, while AI refers to the simulation of human intelligence in machines [16]. Together, these technologies have the potential to revolutionize the future of work by enhancing efficiency, productivity, and innovation. In Rivers State, industries are beginning to embrace automation and AI to stay competitive in the global market. For example, manufacturing companies are using robots to streamline production processes and improve product quality. Similarly, the healthcare sector is leveraging AI to enhance diagnostic accuracy and patient care [7]. These advancements have the potential to significantly impact the local economy by creating new job opportunities and driving economic growth.

Despite the benefits of automation and AI, there are also challenges to consider. One of the main concerns is the potential impact on job security. As more tasks become automated, there is a risk of job displacement for workers in industries that rely heavily on manual labour [11]. Additionally, there may be a mismatch between the skills required for automated jobs and those possessed by the existing workforce. This highlights the need for workforce adaptation and upskilling to ensure that employees are equipped to thrive in an increasingly automated workplace. Artificial Intelligence is a branch of computer science that makes machines and computer programs intelligent. The term AI was coined by Stanford researcher John McCarthy in 1956 during The Dartmouth Conference. Artificial Intelligence is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent humans think [15].

Furthermore, the adoption of automation and AI is not only changing the technical skills required but also the soft skills that are increasingly valued in the workplace. Skills such as creativity, problem-solving, emotional intelligence, and adaptability are becoming more important as automation takes over routine tasks [17].

Employers are seeking workers who can collaborate effectively with AI systems, innovate, and adapt to changing work environments. Therefore, workers need to develop a broad range of skills to thrive in a technology-driven economy. With the rise of remote work and digital connectivity, employees may feel pressured to be constantly available and responsive, leading to feelings of burnout and exhaustion [7]. Employers need to be mindful of these challenges and implement policies that promote a healthy work-life balance, such as flexible working hours and clear communication about expectations. Automation can also impact work-life balance, as it may blur the boundaries between work and personal life.

Furthermore, the introduction of automation and AI can also lead to changes in job roles and responsibilities, which can impact employee well-being. For example, employees may need to acquire new skills or adapt to new technologies, which can be stressful and challenging. Employers need to provide support and training to help employees navigate these changes and ensure a smooth transition to a more automated workplace [5]. Additionally, the integration of automation and artificial intelligence (AI) into industries necessitates comprehensive organizational responses and strategies to manage the transition to a more automated workplace effectively. Organizations need to develop strategies that address the impact of automation on job roles, skill requirements, and employee well-being. For example, investing in training programs can help employees acquire the skills needed to work alongside AI technologies, ensuring a smooth transition and minimizing the risk of job displacement [18].

## 1.8 Impact of Automation and AI on Job Security

The integration of automation and AI technologies in industries has raised concerns about job security. While these technologies have the potential to create new job opportunities, they also have the capability to automate existing roles, leading to job displacement [19]. This phenomenon is particularly pronounced in industries that rely heavily on manual labour, such as manufacturing and agriculture. Studies have shown that automation and AI are likely to impact job security differently across industries [1]. For example, while some industries may experience significant job losses due to automation, others

may see a net increase in employment as new roles are created to support these technologies. However, the overall effect on job security remains a topic of debate among researchers and policymakers [5].

There is a growing recognition of the need to balance the potential benefits of these technologies with the need to protect workers' livelihoods [20]. This has led to calls for policies that support workforce transition and upskilling to ensure that employees are prepared for the changing nature of work. Moreover, the impact of automation and AI on job security extends beyond just the number of jobs available. It also includes the quality of jobs, with concerns about the potential for an increase in precarious work arrangements, such as gig work, and a decrease in job security for workers [3]. Additionally, there are concerns about the potential for automation to exacerbate existing inequalities, with certain groups of workers being disproportionately affected by job losses [7].

Studies have shown that automation and AI are likely to impact job security differently across industries. For example, while some industries may experience significant job losses due to automation, others may see a net increase in employment as new roles are created to support these technologies. However, the overall effect on job security remains a topic of debate among researchers and policymakers. In Rivers State, industries are grappling with the implications of automation and AI on job security. There is a growing recognition of the need to balance the potential benefits of these technologies with the need to protect workers' livelihoods. This has led to calls for policies that support workforce transition and upskilling to ensure that employees are prepared for the changing nature of work.

In response to these challenges, policymakers and industry leaders are exploring various strategies to mitigate the negative impacts of automation on job security. These include investing in education and training programs to help workers acquire the skills needed for jobs that are less susceptible to automation, as well as implementing policies that support job creation in industries that are expected to grow as a result of automation and AI [21]. While automation and AI have the potential to improve efficiency and productivity in industries, they also pose significant challenges for job security. It is crucial for policymakers, industry leaders, and

other stakeholders to work together to address these challenges and ensure that the benefits of automation and AI are shared equitably among workers.

### **1.9 Changes in Skill Requirements and Workforce Adaptation**

Automation and AI are reshaping the skill requirements of industries in Rivers State. As tasks become automated, there is a growing demand for workers with skills in areas such as data analysis, programming, and digital literacy [2]. This shift has significant implications for the workforce, as workers will need to adapt to new roles and responsibilities. In response to these changes, industries in Rivers State are investing in workforce adaptation and upskilling programs [5]. These programs aim to equip employees with the skills needed to thrive in an increasingly automated workplace. For example, manufacturing companies are providing training in robotics and automation, while healthcare providers are offering courses in telemedicine and digital healthcare technologies.

Furthermore, the integration of automation and AI is not only changing the technical skills required but also the soft skills that are increasingly valued in the workplace [6]. Skills such as creativity, problem-solving, emotional intelligence, and adaptability are becoming more important as automation takes over routine tasks. Employers are seeking workers who can collaborate effectively with AI systems, innovate, and adapt to changing work environments [4]. Therefore, workers need to develop a broad range of skills to thrive in a technology-driven economy. Moreover, with the rise of remote work and digital connectivity, employees may feel pressured to be constantly available and responsive, leading to feelings of burnout and exhaustion [7]. Employers need to be mindful of these challenges and implement policies that promote a healthy work-life balance, such as flexible working hours and clear communication about expectations. Automation can also impact work-life balance, as it may blur the boundaries between work and personal life.

Additionally, the introduction of automation and AI can also lead to changes in job roles and responsibilities, which can impact employee well-being [5]. For example, employees may need to acquire new skills or adapt to new technologies, which can be stressful and challenging. Employers need to provide support and training



to help employees navigate these changes and ensure a smooth transition to a more automated workplace [2]1. By prioritizing employee well-being, organizations can ensure that the transition to a more automated workplace is successful and sustainable [10]. Automation and AI are reshaping the skill requirements of industries in Rivers State, leading to a growing demand for workers with technical and soft skills. Employers need to invest in workforce adaptation and upskilling programs to ensure that employees are prepared for the changing nature of work. Additionally, employers need to prioritize employee well-being to ensure a successful transition to a more automated workplace.

### **1.10 Effects of Automation and AI on Employee Well-being and Work-Life Balance**

The integration of automation and AI in industries has the potential to impact employee well-being and work-life balance [1]. On one hand, automation can lead to increased efficiency and reduced workload, potentially improving employees' well-being [17]. However, it can also lead to job insecurity and increased stress, particularly for workers whose roles are at risk of being. Similarly, AI technologies can improve work-life balance by automating routine tasks and allowing employees to focus on more meaningful work [2]. However, they can also blur the lines between work and personal life, leading to burnout and fatigue [7]. It is important for industries in Rivers State to consider these factors when implementing automation and AI technologies to ensure that they are enhancing, rather than detracting from, employee well-being and work-life balance.

Furthermore, the introduction of automation and AI can lead to changes in job roles and responsibilities, which can impact employee well-being [5]. For example, employees may need to acquire new skills or adapt to new technologies, which can be stressful and challenging [2]. Employers need to provide support and training to help employees navigate these changes and ensure a smooth transition to a more automated workplace. Moreover, the rise of remote work and digital connectivity has increased the pressure on employees to be constantly available and responsive, leading to feelings of burnout and exhaustion [20]. Employers need to implement policies that promote a healthy work-life balance, such as flexible working hours and clear communication about expectations.

Automation can also impact work-life balance, as it may blur the boundaries between work and personal life [9].

While automation and AI have the potential to improve efficiency and productivity in industries, they also pose challenges for employee well-being and work-life balance. It is crucial for industries in Rivers State to consider these factors when implementing automation and AI technologies to ensure that they are supporting, rather than detracting from, employee well-being and work-life balance. The integration of automation and AI can lead to changes in organizational culture and dynamics, which can impact employee well-being [11]. For example, employees may feel disconnected from their work or colleagues if they are no longer required to perform certain tasks [19]. Hence, employers need to be mindful of these changes and work to maintain a positive and supportive work environment.

### **1.11 Organizational Responses and Transition of Automated Workplace in Industries**

Organizations are also re-evaluating their organizational structures and job roles to accommodate automation and AI. This may involve restructuring teams, creating new roles focused on managing and overseeing automated systems, and reallocating resources to areas that require human intervention. Additionally, organizations are implementing new technologies to improve communication and collaboration among employees, especially in remote work settings [15]. Furthermore, organizations are developing strategies to manage the potential impact of automation and AI on job security. This includes implementing policies that support reskilling and upskilling of employees to ensure they have the skills needed for new roles that emerge as a result of automation [8]. Additionally, organizations are exploring ways to create a more inclusive workplace, where employees feel valued and supported in the face of technological change [5].

Moreover, organizational leaders are recognizing the importance of fostering a culture of continuous learning and development to prepare their workforce for the future of work. This involves promoting a growth mindset among employees and encouraging them to embrace change and adapt to new technologies [10]. Organizations are also investing in technologies

that support learning and development, such as online training platforms and AI-driven learning systems [3]. Organizations are focusing on building strong leadership capabilities to navigate the complexities of the automated workplace. This includes developing leaders who are agile, empathetic, and capable of driving change in a rapidly evolving environment [9]

Organizations in Rivers State are responding to the challenges and opportunities presented by automation and AI in various ways. By investing in training and development, re-evaluating organizational structures, and fostering a culture of continuous learning, organizations are preparing their workforce for the future of work. Leaders are also being trained to effectively communicate the benefits of automation and AI to employees and stakeholders, addressing any concerns or resistance that may arise [1]. However, it is important for organizations to continue to adapt and evolve their strategies as technology advances, ensuring that they remain competitive and sustainable in the long term.

### 1.12 Strategies for Managing Automated Workplace

The figure illustrates the increasing integration of AI in the business and industry, highlighting its transformative impact on the future of work. Insights from experts in various organizations have underscored the critical role of inclusivity, upskilling, and adaptability in preparing the workforce for this evolving landscape (PCMA

APAC Labs, 2023). Embracing AI and mastering its effective application enable professionals in this industry to innovate and excel, driving success in their endeavours.

Through investing in training and upskilling, implementing flexible work arrangements, fostering a culture of innovation and continuous learning, collaborating with educational institutions and government agencies, and using AI and automation to improve operational efficiency, organizations can ensure that they are well-positioned to thrive in an increasingly automated world.

To effectively manage the transition to a more automated workplace, organizations in Rivers State can adopt several strategies. By adopting these strategies, organizations in Rivers State can effectively manage the transition to a more automated workplace.

### 1.13 Training and Upskilling Programs

Firstly, organizations can invest in training and upskilling programs to ensure that their workforce has the necessary skills to thrive in an automated environment. For example, organizations can provide training in areas such as data analysis, programming, and digital literacy to equip employees with the skills needed to work alongside AI and automation technologies [7]. By investing in training programs, organizations can help employees adapt to new roles and responsibilities, ensuring a smooth transition to a more automated workplace. The concern of the

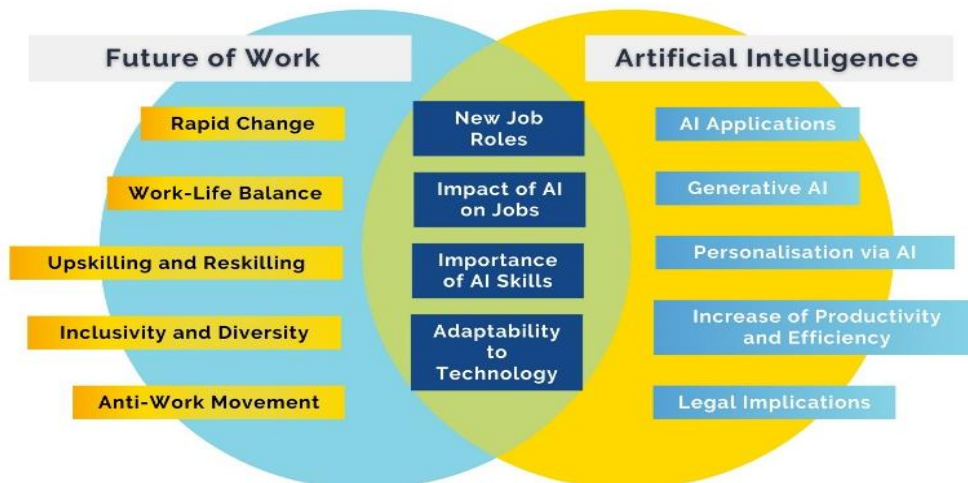


Fig. 2. Recap on future of work: AI and Workforce. Adapted by PCMA APAC Labs (2023)

government of Nigeria to pull the country out of recession and place her on the path of sustainable growth sounds familiar as all the previous governments in Nigeria had done similarly to neglect the role of education as way out of the present recessing nature the economy [2].

These training programs can be tailored to the specific needs of the organization and its employees, taking into account the existing skill set of the workforce and the skills required for future roles. By providing employees with the opportunity to learn new skills and develop professionally, organizations can improve employee morale and engagement, leading to higher levels of productivity and performance. Additionally, investing in training and upskilling programs can help organizations attract and retain top talent, as employees are more likely to stay with an organization that invests in their development [9].

Moreover, training and upskilling programs can have broader benefits for the organization and the economy as a whole. By ensuring that employees have the skills needed to work alongside AI and automation technologies, organizations can increase their competitiveness and adaptability in the global marketplace. Additionally, by investing in training and upskilling programs, organizations can contribute to the development of a skilled workforce in Rivers State, which can have positive implications for economic growth and development.

#### **1.14 Implementation of Flexible Work Arrangements**

Another strategy for managing the transition to a more automated workplace is the implementation of flexible work arrangements. Organizations can adopt flexible work policies that allow employees to work remotely or to have flexible working hours. This can help employees achieve a better work-life balance and reduce stress and burnout. For example, employees who have the flexibility to work from home can save time and money on commuting, allowing them to spend more time with their families or pursuing other interests. Flexible work arrangements can also benefit organizations by improving employee morale and productivity. Studies have shown that employees who have the flexibility to balance their work and personal lives are more satisfied with their jobs

and are more likely to be engaged and productive at work.

Additionally, organizations can foster a culture of innovation and continuous learning to encourage employees to embrace change and adapt to new technologies [9]. This can involve creating opportunities for employees to collaborate on innovative projects and to share their ideas and insights with one another. By encouraging a culture of innovation, organizations can create an environment where employees feel empowered to take risks and to think creatively, which can lead to new and innovative ways of working. Moreover, organizations can provide employees with access to training and development opportunities that allow them to continually update their skills and knowledge. This can help employees stay ahead of technological advancements and remain competitive in the workforce.

Furthermore, organizations can collaborate with educational institutions and government agencies to develop policies and programs that support workforce adaptation and economic growth. This can involve partnering with universities and colleges to develop curriculum that is aligned with the needs of the industry, or working with government agencies to develop incentives for companies to invest in training and upskilling programs [2]. By collaborating with external stakeholders, organizations can ensure that their workforce is prepared for the future of work and that they are able to take advantage of the benefits that automation and AI technologies can offer.

#### **1.15 Innovation and Continuous Learning**

Another crucial strategy for managing the transition to a more automated workplace is to foster a culture of innovation and continuous learning. Organizations can achieve this by encouraging employees to embrace change and adapt to new technologies. This can be done through various means, such as providing opportunities for employees to participate in training programs and workshops that focus on innovation and technology. Additionally, organizations can create a work environment that values creativity and rewards employees for innovative thinking. By fostering a culture of innovation, organizations can ensure that employees are motivated to learn and grow, which can help them thrive in an increasingly automated workplace [9].

Moreover, organizations can invest in technologies that enhance collaboration and communication among employees. For example, the use of collaboration tools such as Slack or Microsoft Teams can help employees work together more effectively, even if they are located in different parts of the world. These tools can also help employees stay connected and engaged with their work, which can improve overall productivity and job satisfaction. Additionally, organizations can use technology to facilitate knowledge sharing and learning among employees. For example, they can create online forums or communities where employees can share their experiences and best practices, which can help foster a culture of continuous learning and improvement [5].

Furthermore, organizations can develop strategies for managing the ethical implications of automation and AI. This can involve creating guidelines and policies that govern the use of these technologies and ensuring that they are used responsibly and ethically. For example, organizations can develop guidelines for the use of AI in recruitment to ensure that biases are minimized and that decisions are made based on merit. Additionally, organizations can ensure that they are transparent about the use of automation and AI technologies and that employees understand how these technologies are being used and why. By addressing the ethical implications of automation and AI, organizations can build trust with their employees and the wider community, which can help ensure the successful adoption of these technologies [8].

### 1.16 Collaboration

Collaboration with educational institutions and government agencies is another essential strategy for managing the transition to a more automated workplace. By collaborating with these stakeholders, organizations can develop policies and programs that support workforce adaptation and economic growth. For example, organizations can partner with universities and technical schools to develop training programs that are tailored to the needs of the local industry [3]. These programs can help ensure that graduates have the skills needed to succeed in an increasingly automated workplace. Additionally, organizations can work with government agencies to develop policies that support job creation and economic development

in industries that are expected to grow as a result of automation and AI.

Furthermore, organizations can collaborate with industry associations to develop standards and guidelines for the ethical use of automation and AI. By working together, organizations can ensure that these technologies are used responsibly and that potential risks, such as job displacement and data privacy concerns, are addressed [8]. Additionally, organizations can collaborate with other stakeholders, such as non-profit organizations and community groups, to develop programs that support workers who may be displaced by automation and AI. For example, they can create retraining programs or job placement services to help these workers find new employment opportunities.

Moreover, organizations can collaborate with educational institutions to develop programs that prepare students for the jobs of the future. For example, they can work with schools to incorporate more STEM (science, technology, engineering, and mathematics) education into the curriculum, which can help ensure that students have the skills needed to succeed in an increasingly automated workplace [6]. Additionally, organizations can provide internships and apprenticeships to students, which can help them gain valuable work experience and develop the skills needed to succeed in their future careers. By collaborating with educational institutions, organizations can help ensure that the workforce of the future is prepared for the challenges and opportunities presented by automation and AI.

## 2. METHODOLOGY

The research design for this study was a correlational approach which seek to investigate the impact of automation and artificial intelligence (AI) on the future of work in key industries in Rivers State. The study aims to reveal the relationship between the integration of automation and AI, changes in skill requirements, organizational responses, and the overall future of work in these industries. The target population comprises employees from key industries in Rivers State, including manufacturing, agriculture, healthcare, and technology sectors. A stratified random sampling technique was employed to draw a sample size of 54 employees across these industries. The self-structured questionnaire titled "Automation and Artificial Intelligence Integration in Industries

Questionnaire (AIIIQ)" and "Future of Work Questionnaire (FWQ)" were specifically designed for this study. The questionnaire includes items related to the impact of automation and AI on job security, changes in skill requirements, effects on employee well-being and work-life balance, and organizational responses.

The questionnaire was a 4-point Likert scale ranging from Very Low Extent (1) to Very High Extent (4). The questionnaire was distributed within the dry season of November 2023 to February 2024. During this period, 54 copies were distributed, but only 49 were returned. Of these, 2 were not correctly filled out, leaving the researcher with only 47 valid copies that were used for data analysis. To ensure content validity, the questionnaire was reviewed by experts in the field of Organizational Behaviour and Information and Communication Technology (ICT). A pilot study was conducted with a subset of participants to refine the questionnaire. The reliability of the instrument was assessed using the test-retest method with a sample of 10 participants which were not part of the main sample size, but within the study's population. The questionnaire was distributed twice at a two-week interval, and the responses were analyzed using the Pearson Product-Moment Correlation (PPMC). A reliability index of .87 was calculated based on the outcomes of this analysis. Descriptive statistics, such as mean and standard deviation, was used to answer the research questions, while inferential statistics, such as Pearson's Product-Moment Correlation (PPMC), was utilized to test hypotheses at a significance level of 0.05. The statistical analysis was conducted using SPSS version 23.0 software. By employing the correlational design and utilizing descriptive and inferential statistics, this study provides valuable insights into the implications of automation and AI for the workforce in Rivers State.

### 3. RESULTS

The following research questions that guided the study were answered using mean and standard deviation responses, where a mean score of 2.50 and higher was considered a high extent, while a mean score of 2.49 or lower was regarded as a low extent in the context of this research analysis.

**Research Question 1:** To what extent does the impact of AI automation on job security influence

the future of work in key industries in Rivers State?

The analysis of Research Question 1, as presented in Table 1, provides insights into the mean and standard deviation of respondents' responses, offering an understanding of the perceived impact of AI automation on job security and its influence on the future of work in key industries in Rivers State. The data sheds light on participants' perspectives regarding specific items related to the impact of AI automation on job security. Each item's mean score, ranging from 2.5938 to 3.5313, indicates different levels of agreement among respondents. The grand mean, calculated at 2.9961 (SD = 1.11268), emphasizes a collective viewpoint that diverges towards a "High Extent" agreement across all items. The data analysis suggests a strong acknowledgment among participants that the impact of AI automation on job security significantly influences the future of work in key industries in Rivers State. This positive perception aligns cohesively with the overarching goals of the study, emphasizing the need for strategic approaches to adapt to the changes brought about by AI automation in securing professional jobs and the importance of investing in training and upskilling programs to address its impact on job security.

**Research Question 2:** To what extent does the change in skill requirements and workforce adaptation influence the future of work in key industries in Rivers State?

The analysis of Research Question 2, as presented in Table 2, provides insights into the mean and standard deviation of respondents' responses, offering an understanding of the perceived impact of changes in skill requirements and workforce adaptation on the future of work in key industries in Rivers State. The data sheds light on participants' perspectives regarding specific items related to the changes in skill requirements and workforce adaptation. Each item's mean score, ranging from 2.5625 to 2.9063, indicates different levels of agreement among respondents. The grand mean, calculated at 2.771 (SD = 1.121), emphasizes a collective viewpoint that diverges towards a "High Extent" agreement across all items. The data analysis suggests a strong acknowledgment among participants that changes in skill requirements and workforce adaptation significantly influence the future of work in key industries in Rivers State. This positive perception aligns cohesively

with the overarching goals of the study, emphasizing the importance of investing in training and upskilling programs to address employees' changing skill requirements and the challenges faced by organizations in adapting their workforce to meet the new AI automation skill requirements.

**Research Question 3:** To what extent does the effect of AI automation on employee well-being and work-life balance influence the future of work in key industries in Rivers State?

The analysis of Research Question 3, as presented in Table 3, provides insights into the

mean and standard deviation of respondents' responses, offering an understanding of the perceived impact of the effects of AI automation on employee well-being and work-life balance on the future of work in key industries in Rivers State. The data sheds light on participants' perspectives regarding specific items related to the effects of AI automation on employee well-being and work-life balance. Each item's mean score, ranging from 2.5313 to 2.9063, indicates different levels of agreement among respondents. The grand mean, calculated at 2.696 (SD = 1.051), emphasizes a collective viewpoint that diverges towards a "High Extent" agreement across all items. The data analysis

**Table 1. Mean and standard deviation responses on how the impact of AI automation on job security influence the future of work in key industries in Rivers State**

S/N	Description	Mean	S.D.	Decision
1	AI automation will creates new job opportunities in the future of work in Rivers State industry	3.5313	.98473	High Extent
2	I am prepared to adapt to the advancement and future changes brought about by AI automation in securing professional jobs	2.5938	1.21441	High Extent
3	I am concerned about the potential impact of AI automation on the future of Rivers State industries job security	2.9375	1.10534	High Extent
4	It is important for organizations to invest in training and upskilling programs to address the impact of AI automation on job security	3.0938	1.22762	High Extent
5	Integration of AI automation into industries will positively influence the future of work industry in Rivers State	2.8438	1.05063	High Extent
<b>Grand Mean</b>		<b>2.9961</b>	<b>1.11268</b>	<b>High Extent</b>

**Table 2. Mean and standard deviation responses on how the changes in skill requirements and workforce adaptation influence the future of work in key industries in Rivers State**

S/N	Description	Mean	SD.	DECISION
6	The skill requirements in industry changed due to automation and AI integration into workspace	2.8438	1.05063	High Extent
7	Organization employees training encourages workforce to meet the new skill requirements brought about by automation and AI	2.9063	1.02735	High Extent
8	Rivers State organizations are prepared to meet the required changes in AI automation skills in industries	2.8438	1.29787	High Extent
9	Organizations face challenges in adapting their workforce to meet the new AI automation skill requirements	2.7188	1.11397	High Extent
10	It is important for organizations to invest in training and upskilling programs to address employees changes in skill requirements	2.5625	1.13415	High Extent
<b>Grand Mean</b>		<b>2.771</b>	<b>1.121</b>	<b>High Extent</b>

**Table 3. Mean and standard deviation responses on how the effects of AI automation on employee well-being and work-life balance influence the future of work in key industries in Rivers State**

S/N	Description	Mean	SD.	Decision
11	Employees support their organization to manage the effects of AI automation on well-being and work-life balance	2.5625	1.13415	High Extent
12	The effects of AI automation on employee well-being will influence the future of work in your industry in Rivers State	2.5313	1.04679	High Extent
13	Organizations should consider the effects of AI automation on employee well-being and work-life balance	2.6250	.97551	High Extent
14	Rivers State organizations should be contingent upon skills that improves employee well-being in the face of AI automation	2.8750	1.03954	High Extent
15	The benefits of AI automation with its potential negative effects on employee well-being and work-life balance should be considered	2.9063	1.08834	High Extent
<b>Grand Mean</b>		<b>2.696</b>	<b>1.051</b>	<b>High Extent</b>

suggests a strong acknowledgment among participants that the effects of AI automation on employee well-being and work-life balance significantly influence the future of work in key industries in Rivers State. This positive perception aligns cohesively with the overarching goals of the study, emphasizing the importance of considering the effects of AI automation on employee well-being and work-life balance in organizational strategies and decision-making processes.

**Research Question 4:** To what extent do organizational responses and strategies in managing AI transition to a more automated workplace influence the future of work in key industries in Rivers State?

The analysis of Research Question 4, as presented in Table 4, provides insights into the mean and standard deviation of respondents' responses, offering an understanding of the perceived impact of organizational responses and strategies in managing AI transition to a more automated workplace on the future of work in key industries in Rivers State. The data sheds light on participants' perspectives regarding specific items related to organizational responses and strategies in managing AI transition. Each item's mean score, ranging from 2.8750 to 3.3438, indicates different levels of agreement among respondents. The grand mean, calculated at 2.988 (SD = 1.074), emphasizes a collective viewpoint that diverges towards a "High Extent" agreement across all items. The data analysis

suggests a strong acknowledgment among participants that organizational responses and strategies in managing AI transition to a more automated workplace significantly influence the future of work in key industries in Rivers State. This positive perception aligns cohesively with the overarching goals of the study, emphasizing the importance of effective communication, employee involvement in decision-making processes, and successful workforce adaptation strategies in managing the transition to a more automated workplace in Rivers State industries.

#### 4. Testing of Hypotheses

The following study's formulated hypotheses was tested at a significance level of 0.05, utilizing inferential statistics, specifically Pearson's Product Moment Correlation Coefficient (PPMC), with the aid of the Statistical Package for Social Science version 23.0.

**Ho<sub>1</sub>:** The impact of AI automation on job security does not significantly relate to the future of work in key industries in Rivers State.

The Table 5, which presents the Pearson Correlation Coefficient of respondents' answers. The correlation analysis aimed to investigate the relationship between the impact of AI automation on job security and the future of work in key industries in Rivers State. The Pearson Correlation Coefficient between these variables is .085, with a significance level (Sig.) of .000.

The significance level of .000 indicates that this correlation is statistically significant at the 0.05 level (2-tailed). Contrary to the null hypothesis, which proposed no significant relationship, the data reveals a positive correlation, implying that as the impact of AI automation on job security increases, so does its influence on the future of work in key industries in Rivers State. Hence, the rejection of hypothesis one indicates a significant relationship between the impact of AI automation on job security and the future of work in key industries in Rivers State. This finding suggests that the importance of considering the effects of AI automation on job security when planning for the future of work in these industries.

**Ho<sub>2</sub>:** The changes in skill requirements and workforce adaptation do not significantly relate to the future of work in key industries in Rivers State.

The Table 6, which presents the Pearson Correlation Coefficient of respondents' answers. The correlation analysis aimed to investigate the relationship between the changes in skill requirements and workforce adaptation and the future of work in key industries in Rivers State. The Pearson Correlation Coefficient between these variables is .164, with a significance level (Sig.) of .001. The significance level of .001 indicates that this correlation is statistically significant at the 0.05 level (2-tailed). Contrary to the null hypothesis, which proposed no significant relationship, the data reveals a positive correlation, implying that as the changes in skill requirements and workforce adaptation increase, so does their influence on the future of work in key industries in Rivers State. Hence, the rejection of hypothesis two indicates a significant relationship between the changes in skill requirements and workforce adaptation and the future of work in key industries in Rivers State.

**Table 4. Mean and standard deviation responses on how the effects of AI automation on employee well-being and work-life balance influence the future of work in key industries in Rivers State**

S/N	Description	Mean	SD.	Decision
16	Organization responses to the challenges posed by AI automation in the workplace could create successful transition of workforce adaptation	2.8750	1.03954	High Extent
17	Employees have been fully involved in the decision-making process regarding AI automation in the future of work industries in Rivers State	2.9063	1.08834	High Extent
18	Organizational responses and strategies for managing AI transition will influence the future of work in Rivers State industries	2.9375	1.21649	High Extent
19	It is important for organizations to communicate effectively with employees about the future of work automation and AI technologies in industries	3.3438	1.03517	High Extent
20	Organizations could do better in managing the transition of AI to a more automated workplace in industries	2.9063	1.02735	High Extent
<b>Grand Mean</b>		<b>2.988</b>	<b>1.074</b>	<b>High Extent</b>

**Table 5. Pearson's Product Moment Correlation Coefficient (PPMC) answer to impact of AI automation on job security and the future of work in key industries in Rivers State**

		AI automation on job security	The Future of Work in key Industries	Decision
AI automation on job security	Pearson Correlation	1	.085	Significant
	Sig. (2-tailed)		.000	
	N	47	47	
The Future of Work in key Industries	Pearson Correlation	.085	1	
	Sig. (2-tailed)	.000		
	N	47	47	

\*\* Correlation is significant at the 0.05 level (2-tailed)



**Table 6. Pearson’s Product Moment Correlation Coefficient (PPMC) answer to changes in skill requirements and workforce adaptation and the future of work in key industries in Rivers State**

		<b>Changes in skill requirements and workforce adaptation</b>	<b>The Future of Work in key Industries</b>	<b>Decision</b>
Changes in skill requirements and workforce adaptation	Pearson Correlation	1	.164	Significant
	Sig. (2-tailed)		.001	
	N	47	47	
The Future of Work in key Industries	Pearson Correlation	.164	1	
	Sig. (2-tailed)	.001		
	N	47	47	

*\*\*.* Correlation is significant at the 0.05 level (2-tailed)

This finding suggests that it is important to consider the effects of changes in skill requirements and workforce adaptation when planning for the future of work in these industries.

**Ho<sub>3</sub>:** The effects of AI automation on employee well-being and work-life balance does not significantly relate to the future of work in key industries in Rivers State.

The Table 7, which presents the Pearson Correlation Coefficient of respondents' answers. The correlation analysis aimed to investigate the relationship between the effects of AI automation on employee well-being and work-life balance and the future of work in key industries in Rivers State. The Pearson Correlation Coefficient between these variables is 0.170, with a significance level (Sig.) of 0.001. The significance level of 0.001 indicates that this correlation is statistically significant at the 0.05

level (2-tailed). Contrary to the null hypothesis, which proposed no significant relationship, the data reveals a positive correlation, implying that as the effects of AI automation on employee well-being and work-life balance increase, so does their influence on the future of work in key industries in Rivers State. Hence, the rejection of hypothesis three indicates a significant relationship between the effects of AI automation on employee well-being and work-life balance and the future of work in key industries in Rivers State. This finding suggests that it is important to consider the effects of AI automation on employee well-being and work-life balance when planning for the future of work in these industries.

**Ho<sub>4</sub>:** The organizational responses and strategies in managing AI transition to a more automated workplace do not significantly relate to the future of work in key industries in Rivers State

**Table 7. Pearson’s Product Moment Correlation Coefficient (PPMC) answer to effects of AI automation on employee well-being and work-life balance and the future of work in key industries in Rivers State**

		<b>AI automation on employee well-being</b>	<b>The Future of Work in key Industries</b>	<b>Decision</b>
AI automation on employee well-being	Pearson Correlation	1	.170	Significant
	Sig. (2-tailed)		.001	
	N	47	47	
The Future of Work in key Industries	Pearson Correlation	.170	1	
	Sig. (2-tailed)	.001		
	N	47	47	

*\*\*.* Correlation is significant at the 0.05 level (2-tailed)

**Table 8. Pearson Product Moment Correlation Coefficient (PPMC) answer to organizational responses and strategies in managing AI transition to a more automated workplace and the future of work in key industries in Rivers State**

		<b>Organizational responses and strategies in managing AI transition</b>	<b>The Future of Work in key Industries</b>	<b>Decision</b>
Organizational responses and strategies in managing AI transition	Pearson Correlation	1	.367*	Significant
	Sig. (2-tailed)		.001	
	N	47	47	
The Future of Work in key Industries	Pearson Correlation	.367*	1	
	Sig. (2-tailed)	.001		
	N	47	47	

\*\* Correlation is significant at the 0.05 level (2-tailed)

The Table 8 presents the Pearson Correlation Coefficient of respondents' answer to organizational responses and strategies in managing AI transition to a more automated workplace and the future of work in key industries in Rivers State. The correlation analysis aimed to investigate the relationship between the organizational responses and strategies in managing AI transition to a more automated workplace and the future of work in key industries in Rivers State. The Pearson Correlation Coefficient between these variables is .367, with a significance level (Sig.) of .001. The significance level of .001 indicates that this correlation is statistically significant at the .05 level (2-tailed). Contrary to the null hypothesis, which proposed no significant relationship, the data reveals a positive correlation, implying that as the organizational responses and strategies in managing AI transition to a more automated workplace increase, so does their influence on the future of work in key industries in Rivers State. Hence, the rejection of hypothesis four indicates a significant relationship between the organizational responses and strategies in managing AI transition to a more automated workplace and the future of work in key industries in Rivers State. This finding suggests that it is important to consider organizational responses and strategies when planning for the future of work in these industries.

#### 4. DISCUSSION OF FINDINGS

The research meticulously investigated the correlation between "Automation, artificial intelligence and the future of work in key industries in Rivers State" offering profound

insights into job security, changes in skill and workforce adaptation, employee well-being and work-life balance, and organizational responses and strategies in managing AI transition.

#### 4.1 Impact of AI Automation on Job Security and the Future of Work in Key Industries

The exploration of the impact of AI automation on job security and the future of work in key industries in Rivers State is a critical component of this study. The findings reveal a significant positive correlation, indicating that as the impact of AI automation on job security increases, so does its influence on the future of work in key industries in Rivers State. The Pearson Correlation Coefficient between these variables is .085, with a significance level (Sig.) of .000. The significance level of .000 indicates that this correlation is statistically significant at the .05 level (2-tailed). Contrary to the initial hypothesis, which suggested no significant relationship, the data shows that the impact of AI automation on job security does indeed significantly influence the future of work in key industries in Rivers State. This finding underscores the importance of considering the effects of AI automation on job security when planning for the future of work in these industries.

The study's alignment with Chang [16] underscored the critical importance of strategic planning and adaptation amid rapid technological advancements. Chang emphasized the necessity for organizations to continually adjust their workforce and skill requirements to effectively navigate the challenges posed by AI automation.

Moreover, the study's findings shed light on the significant impact of AI automation on job security, particularly in key industries within Rivers State. This highlights the interconnected nature of technological advancements and workforce dynamics, indicating that as AI automation becomes more prevalent, its influence on job security becomes increasingly pronounced. Understanding these impacts is crucial for organizations seeking to proactively address the challenges and capitalize on the opportunities presented by AI automation.

Drawing insights from the study of Ananyi and Nwosu [3] which examined artificial intelligence and the economic aspects of Nigeria public universities, acknowledges that the integration of AI in public universities should be done with careful consideration of ethical and privacy implications. Adequate safeguards and policies need to be in place to protect student data, ensure fairness in AI procedures, and address any potential biases. Based on their result of the findings, it was revealed that there were no significant differences in response of federal universities and state universities on utilizing artificial intelligence for enhancing the economic aspects of Nigeria public universities. Therefore, the integration of AI into public university operations holds great promise for enhancing their economic aspects like monitoring student behavior and provide real-time feedback, helping instructors identify students who may need additional support, handle routine inquiries, provide course information, and offer basic tutoring or guidance.

This perspective is echoed by Brown [9], who highlighted the pivotal role of organizational responses and strategies in managing the transition to a more automated workplace. Together, these insights emphasize the need for proactive measures to ensure a smooth and successful adaptation to the evolving technological landscape. The Implications of these findings extend beyond individual organizations to the broader economic and societal landscape. As industries in Rivers State increasingly adopt AI automation, there is a pressing need for policymakers and stakeholders to develop comprehensive strategies to manage this transition effectively. This includes investing in education and training programs to equip the workforce with the necessary skills to thrive in an automated environment, as well as implementing policies that promote job security and equitable access to opportunities in the face of

technological change. Therefore, the study's findings underscore the transformative nature of AI automation on job security and the future of work in Rivers State. By recognizing and responding to these changes, organizations and policymakers can work together to harness the full potential of AI automation while mitigating its potential negative impacts.

#### **4.2 Changes in Skill Requirements and Workforce Adaptation**

The examination of changes in skill requirements and workforce adaptation in response to AI automation is a pivotal aspect of this study. The findings illuminate a significant positive correlation, indicating that as the impact of AI automation on job security increases, its influence on the future of work in key industries in Rivers State also rises. The Pearson Correlation Coefficient between these variables is 0.164, with a significance level (Sig.) of 0.001. The significance level of 0.001 indicates that this correlation is statistically significant at the 0.05 level (2-tailed). This discovery contrasts with the initial hypothesis, which proposed no significant relationship, thus emphasizing the important role of AI automation's impact on change in skill requirements and workforce adaptation in shaping the future of work in key industries in Rivers State.

The study's findings align with the work of Onwuegbuzie [20], who emphasized the critical need for organizations to adapt their workforce and skill requirements in response to technological advancements. Smith highlighted that organizations that proactively adjust their workforce and skill sets are better positioned to thrive in an AI-driven environment. Similarly, Brown [9] and Wang et al. [22] stressed the importance of organizational agility in responding to changes in skill requirements brought about by AI automation. Johnson's work suggests that organizations that can quickly adapt their workforce and skill requirements are more likely to remain competitive and sustain growth in the face of technological change. Therefore, the findings of this study suggest that organizations in Rivers State need to prioritize workforce adaptation and skill development to effectively respond to the challenges and opportunities presented by AI automation.

The study's findings also shed light on the significant Impact of AI automation on job security and workforce dynamics in Rivers State.

As AI automation becomes more prevalent, the nature of work is expected to change, requiring employees to acquire new skills and adapt to new roles. This underscores the importance of ongoing training and education programs to ensure that the workforce remains agile and adaptable in the face of technological change. Additionally, the study's findings suggest that organizations that invest in workforce adaptation and skill development are more likely to retain talent and remain competitive in the evolving job market. Therefore, the findings of this study highlight the importance of organizational responses to AI automation in shaping the future of work in key industries in Rivers State. By understanding the impact of AI automation on job security and workforce dynamics, organizations can better prepare for the challenges and opportunities presented by technological change. This includes investing in workforce adaptation and skill development programs, as well as fostering a culture of innovation and agility. Overall, the study's findings suggest that organizations that can effectively adapt to the changing nature of work are more likely to thrive in an AI-driven future.

### **4.3 Effects of AI Automation on Employee Well-being and Work-Life Balance**

The examination of the effects of AI automation on employee well-being and work-life balance is a crucial aspect of this study. The findings reveal a significant positive correlation, indicating that as the effects of AI automation on employee well-being and work-life balance increase, its influence on the future of work in key industries in Rivers State also rises. The Pearson Correlation Coefficient between these variables is 0.170, with a significance level (Sig.) of 0.001. This level of significance indicates that this correlation is statistically significant at the 0.05 level (2-tailed). Contrary to the initial hypothesis, which proposed no significant relationship, the data emphasizes the significant role of AI automation's impact on employee well-being and work-life balance in shaping the future of work in key industries in Rivers State.

The study's findings resonate with the work of Liu [17], who emphasized the importance of employee well-being in the context of AI automation. Liu highlighted that organizations that prioritize employee well-being are more likely to see positive outcomes in terms of productivity, job satisfaction, and retention. The study's findings also underscore the need for

organizations to address the potential negative effects of AI automation on employee well-being and work-life balance. As AI automation becomes more prevalent, there is a risk of increased stress, burnout, and job dissatisfaction among employees. Therefore, organizations need to implement strategies to mitigate these effects, such as offering flexible work arrangements, providing support for mental health and well-being, and promoting a culture of work-life balance. Additionally, the study's findings suggest that organizations that prioritize employee well-being and work-life balance are more likely to attract and retain top talent, leading to a more competitive and sustainable workforce.

Similarly, Zhao [11] stressed the importance of work-life balance in maintaining employee health and well-being in an AI-driven workplace. Zhao's work suggests that organizations that promote work-life balance are more likely to have satisfied and engaged employees, leading to higher performance and productivity levels. Therefore, the findings of this study suggest that organizations in Rivers State need to consider the effects of AI automation on employee well-being and work-life balance to ensure a positive and sustainable work environment. The findings of this study highlight the significant impact of AI automation on employee well-being and work-life balance in key industries in Rivers State. By understanding and addressing these effects, organizations can create a positive and sustainable work environment that promotes employee health, well-being, and productivity. This underscores the importance of considering the human aspect of AI automation in shaping the future of work in Rivers State.

### **4.4 Organizational Responses and Strategies in Managing AI Transition**

The examination of organizational responses and strategies in managing AI transition is a critical aspect of this study. The findings reveal a significant positive correlation, indicating that as organizations' responses and strategies in managing AI transition improve, their influence on the future of work in key industries in Rivers State also rises. The Pearson Correlation Coefficient between these variables is .367, with a significance level (Sig.) of .001. This level of significance indicates that this correlation is statistically significant at the .05 level (2-tailed). Contrary to the initial hypothesis, which proposed no significant relationship, the data emphasizes the significant role of organizational responses

and strategies in managing AI transition in shaping the future of work in key industries in Rivers State.

The study's findings resonate with the work of Smith [23], who highlighted the critical need for organizations to adapt their strategies in response to AI automation. Smith emphasized that organizations that proactively adjust their strategies are better positioned to thrive in an AI-driven environment. As AI automation becomes more prevalent, the nature of work is expected to change, requiring organizations to adapt their strategies to remain competitive [24,25]. This underscores the importance of ongoing strategic planning and adaptation to ensure that organizations remain agile and adaptable in the face of technological change. Additionally, the study's findings suggest that organizations that invest in organizational responses and strategies in managing AI transition are more likely to retain talent and remain competitive in the evolving job market [26].

Similarly, Chinda and Amadi [4] stressed the importance of organizational agility in responding to changes brought about by AI automation. Their work suggests that organizations that can quickly adapt their strategies are more likely to remain competitive and sustain growth in the face of technological change [27,28]. Therefore, the findings of this study suggest that organizations in Rivers State need to prioritize organizational responses and strategies in managing AI transition to effectively respond to the challenges and opportunities presented by AI automation. This finding also shed light on the significant impact of organizational responses and strategies in managing AI transition on job security and workforce dynamics in Rivers State.

Therefore, the findings of this study highlight the importance of organizational responses and strategies in managing AI transition in shaping the future of work in key industries in Rivers State. The findings of this study revealed the transformative nature of AI automation on organizational responses and strategies in managing AI transition and the future of work in Rivers State. By understanding and addressing these impacts, organizations can better prepare for the challenges and opportunities presented by AI automation in the workplace. This highlights the importance of considering the organizational aspect of AI automation in shaping the future of work in Rivers State.

## 5. CONCLUSION

The study's exploration of the impact of AI automation on various facets of work in key industries in Rivers State has yielded significant insights. The findings underscore the critical importance of considering the effects of AI automation on job security, workforce adaptation, employee well-being, and organizational strategies. The implications of these findings are far-reaching. Organizations in Rivers State must proactively adapt their workforce and skill requirements to effectively navigate the challenges and opportunities presented by AI automation. Strategic planning and adaptation are paramount, as organizations that can quickly adjust their strategies are more likely to remain competitive and sustain growth in an AI-driven environment. Moreover, prioritizing employee well-being and work-life balance is crucial to ensure a positive and sustainable work environment amid increasing automation. In conclusion, the study's findings underscore the transformative nature of AI automation on the future of work in key industries in Rivers State. By recognizing and responding to these changes, organizations can harness the full potential of AI automation while mitigating its potential negative impacts. This study serves as a call to action for policymakers, stakeholders, and organizations to collaborate in developing strategies that promote job security, workforce adaptation, and employee well-being in an AI-driven future.

## 6. RECOMMENDATIONS

The following recommendations are proposed to address the key findings of the study and guide policymakers, stakeholders, and organizations in navigating the challenges and opportunities presented by AI automation in Rivers State:

- Policymakers should create policies that safeguard job security in the face of AI automation. This includes establishing guidelines for responsible AI implementation and ensuring that workers are protected from displacement by providing training and support for transitioning to new roles.
- Policymakers should implement programs that promote continuous learning and skill development among the workforce. This includes investing in education and training initiatives that equip workers with the

necessary skills to thrive in an AI-driven environment.

- Stakeholders in organizations should implement initiatives that promote work-life balance, such as flexible working hours, remote work options, and employee wellness programs, to enhance employee satisfaction, retention, and overall productivity.
- Stakeholders should support organizations in developing comprehensive AI strategies, prioritize strategic planning and adaptability, incorporating AI technologies thoughtfully into their operations to enhance efficiency and competitiveness while ensuring the well-being and job security of their workforce, offering guidance and resources to facilitate smooth transitions.

#### **DISCLAIMER (ARTIFICIAL INTELLIGENCE)**

I hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts.

#### **COMPETING INTERESTS**

Author has declared that no competing interests exist.

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