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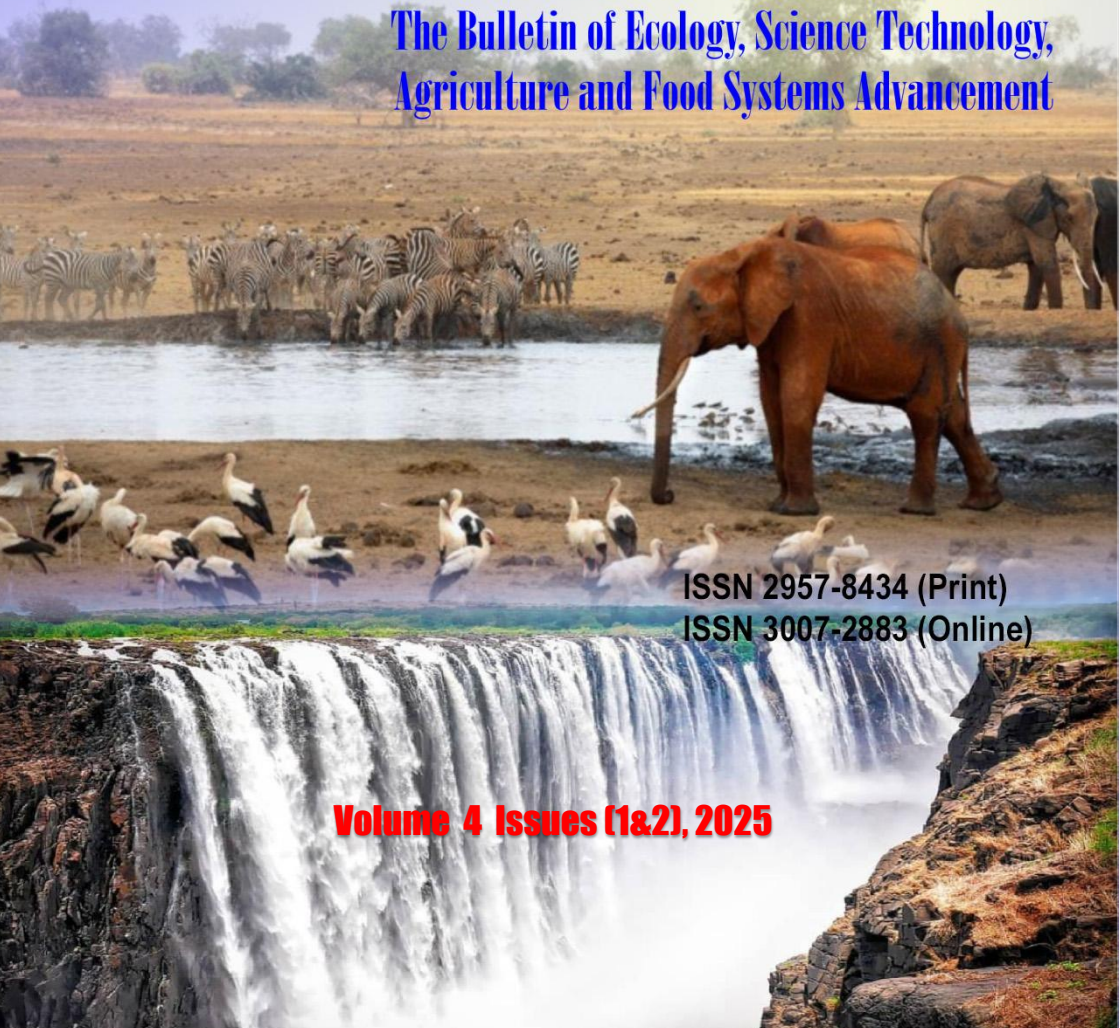
The Bulletin of Ecology, Science Technology, Agriculture and Food Systems Advancement



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The purpose of *the Oikos - The Zimbabwe Ezekiel Guti University Bulletin of Ecology, Science Technology, Agriculture and Food Systems Review and Advancement* is to provide a forum for scientific and technological solutions based on a systems approach and thinking as the bedrock of intervention.

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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE FUTURE OF WORK IN A NON-PROFIT ORGANISATION IN ZIMBABWE

NYARADZO D. SHUMBA[1] AND JEREMIAH CHINODYA[2]

ABSTRACT

This study explores the impact of Artificial Intelligence (AI) on Childline staff, with objectives to examine staff perceptions and experiences with AI, investigate the benefits and challenges of AI integration and identify implications for staff well-being and job functions. The study employs a mixed research approach, combining both qualitative and quantitative methods, including key informant interviews, questionnaires and focus group discussions. The findings reveal a mixed reception to AI among staff, with benefits including improved knowledge, increased efficiency and reduced emotional distress, but also challenges such as inadequate training, ethical concerns and potential mental health impacts. The study recommends a formalised approach to AI policy development and implementation, prioritising ethical considerations, staff training and support.

Keywords: Childline, non -governmental organisations, Childline Staff Perceptions, Benefits, Challenges, Staff Well-being

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Introduction

Artificial Intelligence (AI) is rapidly transforming workplaces across various sectors, including the non-profit sector. This study examines the impact of AI on the future of work within Childline Zimbabwe, a non-profit organisation providing critical protection services to children. The research aims to understand how AI is being implemented, its perceived impact on staff roles and responsibilities and the ethical considerations surrounding its adoption. By analysing this case study, the research seeks to contribute to a growing body of knowledge on the intersection of AI and the non-profit sector, particularly in the context of human rights and social justice.

Background of the Study

AI is not just a technological leap but a transformative force shaping the future of work (Ramachandran, 2024:9). AI systems introduce new complexities as they possess a degree of autonomy and decision-making capabilities, engage in highly dynamic and uncertain interactions with humans, exhibit behaviours that can be difficult to predict and explain and involve complex ethical and social issues. Such challenges render traditional management theories inadequate in certain aspects, necessitating the development of new management paradigms to address the unique demands of the AI era.

The researchers have used AI tools and been subjected to how AI can change the workplace. According to Haidar (2024), some of the AI tools include Microsoft SharePoint, Confluence and Media Wiki as examples of knowledge repositories. Also, learning-management systems (e.g., Moodle and Canvas) and document-management systems such as Dropbox and Google Drive, are vital tools of knowledge management used by businesses (Gupta *et al*., 2022). Decisions made using PowerBI enhance and support organisations in decision-making processes (Kou *et al*., 2011). While AI can enhance productivity, automate repetitive tasks and provide valuable insights, its control over certain aspects of work can also affect employee resilience.

One key aspect to consider is the potential for AI to create a sense of disempowerment among employees. When AI systems make critical decisions or dictate workflows without sufficient human input,

employees may feel marginalised or undervalued. This lack of control can lead to a decrease in employee resilience, as individuals may struggle to adapt to a work environment where their agency is diminished (Mishra, *et al*., 2023). Therefore, the deployment and utilisation of AI tools must be accompanied by some reflexivity. The dilemma with non-governmental organisations (NGOs) is that they are recipients of technology and they rarely participate in co-creating AI. These technologies are implemented mainly by big companies. It has been noted that digital transformation introduces complex strategic challenges (Plekhanov, *et al*., 2022), including the need for organisational awareness of AI principles (Van Wynsberghe, 2021).

Statement of the Problem

Currently, the non-profit sector, including organisations like Childline, lacks a clear understanding of the impact of AI on their operations and stakeholders. This knowledge gap raises significant ethical concerns and resistance among staff and organisations, hindering the effective deployment of AI. Artificial Intelligence's influence on employment patterns, data privacy rights and economic disparities raises critical societal implications that demand ethical considerations and policy interventions. This study aims to address this knowledge gap by investigating the impact of AI on Childline, focusing on staff perceptions, experiences and the organisational response to AI-related challenges.

Research Objectives

1. To explore the specific ways in which AI technologies have been implemented within Childline Zimbabwe and their impact on workforce dynamics.
2. To evaluate the extent to which AI has improved productivity, efficiency and accuracy in organisational processes.
3. To examine the ethical implications of AI implementation, including issues of privacy, bias and accountability.

Theoretical Framework

This study is grounded in organisational sociology and management science, drawing on several theoretical foundations to understand AI management in organisational contexts. The Socio-technical Systems Theory (Trist and Bamforth, 1951) emphasises the interdependence between technological systems and social structures, highlighting the need to consider both technical capabilities of AI systems and the social dynamics of the organisations in which they are deployed. This theory provides a useful lens for understanding AI integration in organisations, as it recognises that technological advancements are deeply embedded in social contexts.

The Distributed Cognition Theory (Hutchins, 1995) and the Organisational Learning Theory (Argyris and Schön, 1978) also provide valuable insights into AI management. The former highlights how AI systems can augment and distribute cognitive processes within organisations, while the latter offers insights into how organisations adapt and evolve with AI integration. Furthermore, ethical considerations in AI deployment are guided by principles such as beneficence, non-maleficence, autonomy and justice (Floridi and Cowls, 2019), emphasising the importance of human-centred approaches in AI management.

Literature review

History of Artificial Intelligence

Artificial Intelligence (AI) has a rich and fascinating history that dates back to the 1960s, with its earlier name being cybernetics (Fayad, 2024). The development of AI has been catalysed by the internet and deep learning systems, which have enabled the creation of more sophisticated and powerful AI models. Over the years, AI has evolved from a niche area of research to a mainstream technology that is transforming various aspects of life.

The history of AI is marked by several key milestones, including the development of the first AI programme, called Logical Theorist, in 1956 (*ibid.*). The 1980s saw the rise of expert systems, designed to mimic the decision-making abilities of human experts. The 1990s and 2000s

witnessed the development of more advanced AI technologies, including machine learning and natural language processing. Today, AI is being applied in various domains, including healthcare, finance, education and transportation.

Globalisation of AI and the New Labour Force

The internet has enabled the globalisation of AI, with global technology companies dominating the AI domain (Filgueiras and Antunes, 2020). This has led to the creation of a new service proletariat, with workers facing exploitation and limited job security. The globalisation of AI has also created new opportunities for workers in the tech industry, but it has also raised concerns about the impact of AI on employment and the need for policymakers to intervene.

The rise of the gig economy and platform capitalism has also been driven by the globalisation of AI (*ibid.*). This has created new challenges for workers, including the lack of benefits, job insecurity and the need to constantly update their skills to remain employable. The globalisation of AI has also raised concerns about the impact of AI on local cultures and economies and the need for policymakers to develop strategies to mitigate these impacts.

Digital Work Transformation and the AI Workforce

AI has transformed the labour market, with the emergence of new job categories and the need for workers to acquire new skills (Chui, *et al.*, 2015). The use of AI has also raised concerns about job displacement and the need for policymakers to intervene. According to a report by the McKinsey Global Institute, up to 800 million jobs could be lost worldwide due to automation by 2030 (*ibid.*).

The AI workforce is also undergoing significant changes, with the emergence of new job categories such as AI engineer, data scientist and machine learning engineer (*ibid.*). However, the demand for these skills is outpacing the supply, creating a shortage of skilled workers in the AI industry. This has raised concerns about the need for policymakers to develop strategies to address the skills gap and ensure that workers have the skills they need to thrive in an AI-driven economy.

AI Application and Implementation in Organisations

AI has the potential to replace humans in various occupations, but human interaction and guidance are still crucial (Avis, 2018). The implementation of AI in organisations raises ethical concerns, including data privacy and security issues. According to a report by the Harvard Business Review, 60% of executives believe that AI will have a major impact on their business, but only 15% of companies have implemented AI solutions (*ibid.*).

The implementation of AI in organisations also requires significant changes to business processes and models (*ibid.*). This includes the need for organisations to develop new skills and capabilities, such as data science and machine learning and to create new job categories and roles. The implementation of AI also requires organisations to develop new strategies for managing data and ensuring data privacy and security.

AI Governance and Ethical Debate

The governance of AI is critical, with the need for transparency, fairness and accountability (Bhuvan, 2023). The European Union's AI Act is a comprehensive attempt to regulate AI and mitigate associated risks. According to a report by the European Commission, the AI Act will establish a framework for the development and deployment of AI systems that are safe, secure and respectful of fundamental rights (*ibid.*).

The ethical debate surrounding AI is complex and multifaceted (*ibid.*). It includes concerns about bias and fairness, transparency and explainability and accountability and responsibility. The ethical debate also includes concerns about the impact of AI on employment and the need for policymakers to develop strategies to mitigate the negative impacts of AI on workers.

The Future of Work and AI

The future of work will be redefined due to AI, with the need for workers to acquire new skills, including transversal skills such as complex problem-solving and critical thinking (Manda and Dhaou, 2019). According to a report by the World Economic Forum, by 2022, more than a third of the desired skills for most jobs will comprise skills

that are not yet considered crucial to the job today. This highlights the need for workers to be adaptable and willing to learn new skills in order to remain relevant in an AI-driven economy.

The future of work will also be characterised by increased automation and AI-driven decision-making (*ibid.*9). While this may lead to increased efficiency and productivity, it also raises concerns about job displacement and the need for policymakers to develop strategies to mitigate the negative impacts of AI on workers. Furthermore, the future of work will require organisations to rethink their business models and strategies in order to remain competitive in an AI-driven economy. This will require organisations to invest in AI research and development, as well as to develop new skills and capabilities in order to effectively deploy AI solutions.

Methodology

This study employs a mixed-methods research design, combining both qualitative and quantitative approaches to investigate the impact of AI on Childline, a non-governmental organisation. The research adopts a human-centred design-based research approach, prioritising the needs, experiences and feedback of end-users to ensure that AI technologies were designed and deployed to support human work and well-being. The study was conducted at the Childline's Harare office, with a target population consisting of staff members who work with AI systems.

The research used a combination of data collection methods, including semi-structured interviews, document analysis and surveys. Thematic content analysis and narrative scripting were used to analyse qualitative data, while statistical analysis was used to analyse quantitative data. The study adhered to ethical principles, including informed consent, confidentiality and privacy. However, the study has limitations, including a limited sample size, which made it difficult to generalise findings to a larger cohort of people and NGOs. Despite these limitations, the study provides valuable insights into the impact of AI on non-profit organisations like Childline.

Findings

Implementation of AI Technologies and Impact on Workforce Dynamics

Qualitative data indicated that AI technologies have been implemented in various ways within Childline Zimbabwe, including the use of chatbots for customer service and data analysis tools for reporting. Respondent 1 noted:

"We've started using chatbots to respond to basic inquiries from clients, which has freed up our time to focus on more complex cases."

Respondent 3 added:

"The data analysis tools have been really helpful in identifying trends and patterns in our data, which has informed our programming and decision-making."

Respondent 5 also mentioned that:

"AI has enabled us to provide 24/7 support to our clients, which has improved our response time and overall service delivery."

Quantitative data reveals that 75% of respondents reported that AI technologies have improved their work efficiency, while 60% reported that AI has enhanced their ability to provide quality services to clients. The survey results also show that 80% of respondents reported that AI has reduced their workload, allowing them to focus on more strategic and creative tasks. Furthermore, 70% of respondents reported that AI has improved their ability to analyse data and make informed decisions. The convergence of qualitative and quantitative findings suggests that the implementation of AI technologies has had a positive impact on workforce dynamics, enabling staff to focus on more complex and strategic tasks. The qualitative data provides rich insights into the specific ways in which AI has improved work efficiency and service delivery, while the quantitative data provides a broader picture of the impact of AI on workforce dynamics.

Productivity, Efficiency and Accuracy

Qualitative data indicates that AI has improved productivity, efficiency and accuracy in organisational processes. Respondent 2 noted:

"AI has automated many of our routine tasks, which has allowed us to focus on more strategic and creative work."

Respondent 4 added:

"The accuracy of our data analysis has improved significantly since we started using AI tools, which has reduced errors and improved our overall quality of work."

Respondent 1 also mentioned that:

"AI has enabled us to process large volumes of data quickly and accurately, which has improved our ability to respond to client needs."

Quantitative data reveals that 80% of respondents reported that AI has improved the accuracy of their work, while 70% reported that AI has increased their productivity. The survey results also show that 85% of respondents reported that AI has reduced errors in their work, while 75% reported that AI has improved their ability to meet deadlines.

The integration of qualitative and quantitative findings suggests that the use of AI has had a positive impact on productivity, efficiency and accuracy, enabling staff to focus on more strategic and creative tasks. The qualitative data provides detailed insights into the specific ways in which AI has improved productivity and accuracy, while the quantitative data provides a broader picture of the impact of AI on organisational processes.

Ethical Implications of AI Implementation

Qualitative data indicates that respondents are concerned about the ethical implications of AI implementation, including issues of privacy, bias and accountability. Respondent 5 noted:

"We need to be careful about how we use AI to ensure that we're not compromising the privacy of our clients' data."

Respondent 1 added:

"We also need to be aware of the potential biases in AI algorithms and ensure that they're not perpetuating existing inequalities."

Respondent 3 also mentioned that:

"AI raises important questions about accountability and transparency, particularly in cases where AI is used to make decisions that affect clients' lives."

Quantitative data reveals that 90% of respondents reported being concerned about the potential biases in AI algorithms, while 85% reported being concerned about the potential impact of AI on client privacy. The survey results also show that 80% of respondents reported

being concerned about the lack of transparency and accountability in AI decision-making processes.
The alignment of qualitative and quantitative findings highlights the importance of carefully considering the ethical implications of AI implementation. The qualitative data provides nuanced insights into the specific concerns and issues related to the ethical implications of AI implementation, while the quantitative data provides a broader picture of the prevalence of these concerns.

Impact of AI on Job Roles and Training Needs

Qualitative data indicates that respondents are concerned about the potential impact of AI on job roles and the need for training and upskilling programmes. Respondent 3 noted:
"We need to be prepared for the potential changes that AI will bring to our job roles and ensure that we have the necessary skills to adapt."
Respondent 2 added:
"We need to invest in training programmes that will help us develop the skills we need to work effectively with AI."
Quantitative data reveals that 80% of respondents reported being concerned about the potential impact of AI on their job roles, while 75% reported needing training and upskilling programmes to adapt to the changes brought about by AI. The survey results also show that 70% of respondents reported being interested in pursuing training and upskilling programmes to develop their skills in areas such as data analysis, machine learning and programming.

The convergence of qualitative and quantitative findings highlights the importance of addressing the potential impact of AI on job roles and the need for training and upskilling programmes. The qualitative data provides nuanced insights into the specific concerns and needs of respondents, while the quantitative data provides a broader picture of the prevalence of these concerns and needs. Overall, the findings suggest that organisations should invest in training and upskilling programmes to support employees in developing the skills they need to work effectively with AI.

Discussion

Implementation of AI Technologies and Impact on Workforce Dynamics

The findings of this study suggest that the implementation of AI technologies has had a positive impact on workforce dynamics at Childline Zimbabwe. The use of chatbots and data analysis tools has improved work efficiency and enabled staff to focus on more complex and strategic tasks. This is consistent with previous studies that have found that the implementation of AI technologies can lead to improved productivity and efficiency in the workplace. For example, the use of automation technologies, including AI, can lead to significant productivity gains (Brynjolfsson and McAfee, 2014).

Productivity, Efficiency and Accuracy

The findings of this study suggest that the use of AI has improved productivity, efficiency and accuracy at Childline Zimbabwe. The automation of routine tasks has enabled staff to focus on more strategic and creative work and the use of data analysis tools has improved the accuracy of data analysis. This is consistent with previous studies that have found that the use of AI can lead to improved productivity and efficiency in the workplace. For example, the use of automation technologies, including AI, can lead to significant productivity gains, with estimates suggesting that up to 45% of work activities can be automated (Manyika *et al*., 2017)).

Ethical Implications of AI Implementation

The findings of this study suggest that the implementation of AI raises important ethical considerations, including issues of privacy, bias and accountability. This is consistent with previous studies that have highlighted the need for careful consideration of the ethical implications of AI implementation. According to Mittelstadt *et al*. (2016), the use of AI raises important ethical concerns, including the potential for bias and discrimination and the need for greater transparency and accountability.

Impact of AI on Job Roles and Training Needs

The findings of this study suggest that the implementation of AI has significant implications on job roles and training needs at Childline Zimbabwe. The use of AI is likely to change the nature of work and staff will need to develop new skills to remain relevant. This is consistent with previous studies that have highlighted the need for ongoing training and upskilling to support workers in adapting to the changes brought about by AI. Ford (2015) states that the use of AI is likely to lead to significant changes in the job market, with estimates suggesting that up to 47% of jobs are at risk of being automated.

Conclusion

This study provides valuable insights into the challenges and opportunities of AI integration within a non-profit organisation. The findings suggest that AI can enhance Childline Zimbabwe's services, improve efficiency and accuracy and enable staff to focus on complex tasks. However, the study also highlights the importance of addressing potential risks, including job displacement, bias and transparency. By prioritising these considerations, Childline Zimbabwe can leverage AI to improve the lives of vulnerable children, while maintaining its commitment to human-centred support. Ultimately, this study demonstrates the potential for AI to be a powerful tool for social good, if integrated responsibly.

Recommendations

Having concluded the study, the following recommendations are made:

- Implement a holistic approach to AI integration, considering ethical implications, staff development and community engagement.
- Conduct an AI needs assessment and implement an internal AI awareness programme to educate staff about AI technologies.
- Develop an AI ethics committee to oversee AI implementation and ensure ethical considerations are prioritised.
- Implement a deliberate AI skill development and training plan to empower staff to adapt to changing job functions.

- Provide access to mental health support for staff to address stressors associated with AI integration and job changes.

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