

AWARENESS AND USE OF ARTIFICIAL INTELLIGENCE AMONG UNDERGRADUATE ECONOMICS STUDENTS IN ANAMBRA STATE

Nkemdilim, Anayo Isaac
Nnamdi Azikiwe University, Awka.
Ai.nkemdilim@unizik.edu.ng

Okenwa-Fadele, ijeoma
Nnamdi Azikiwe University, Awka.
ia.okenwa-fadele@unizik.edu.ng

Emeka, Ifeanyi David (Ph.D)
Nnamdi Azikiwe University, Awka. Anambra State
id.emeka@unizik.edu.com

Oyeyemi, Ahmed Ademola
Nnamdi Azikiwe University, Awka.
aa.oyeyemi@unizik.edu.ng

Balami Daniel Ibrahim
Nnamdi Azikiwe University, Awka.
Danielbami99@gmail.com

Abstract

The study examined the awareness and use of artificial intelligence among university undergraduate Economics students in Anambra state. The study adopted a descriptive research design and three research questions guided the study. The study was carried out in Chukwuemeke Odumegwu Ojukwu University Igbariam Campus and Nnamdi Azikiwe University, Awka, Anambra State. The population of the study comprised all the Economics department students in the Faculty of Social Science Chukwuemeke Odumegwu Ojukwu University and Nnamdi Azikiwe University, Awka, Anambra State with population of 2,520 students. (Source: Directorate of Academic Planning of Chukwuemeke Odumegwu Ojukwu University and Nnamdi Azikiwe University Awka, 2023). Simple random sampling technique was used to obtain 120 students each from the two departments. This brought the sample size to 240 students. Instrument for data collection was a researchers-developed questionnaire titled “Awareness and Use of Artificial Intelligence among Undergraduate Students (AUAIUS)” was used to obtain data from the respondents. The statistical measure that was used to analyze the data collected is the mean statistical methods. The findings of the study revealed that Economics undergraduate students in Anambra state are aware of artificial intelligence, there are factors that influence the use of AI among Economics students in Anambra state and there are potential challenges that Economics students in Anambra state may face in the use of AI. The study recommended among other that universities managements should make funds available for the acquisition of necessary facilities that will promote effective deployment of AI technologies.

Keywords: Artificial Intelligence, Undergraduate, Economics, Students

Introduction

Artificial Intelligence (AI) technologies have changed the way learners are interacting with instructional activities in various educational settings. Learning has been shifted from instructor led to the interaction of AI-powered devices and learners are no longer bound to traditional classrooms (Chassignol, *et al.* 2018). Artificial intelligence are resources or tools used by both undergraduates' and lecturers to enhance teaching and learning activities. The use of AI in the teaching-learning process is needed to attract students' attention and to make teaching-learning activities more interesting and also effective. This has made it vital that undergraduates not only need to use AI, but they need to become comfortable with it using ICTs. Murphy (2019) defined Artificial Intelligence (AI) as the application of software algorithms and techniques that allow computers and machines to simulate human perception and decision-making processes to complete tasks, AI operates using the instructions that are coded using the certain algorithm and provided desired outputs (Uchehukwu, 2018).

AI is "a cluster of technologies and approaches to computing focused on the ability of computers to make flexible rational decisions in response to unpredictable environmental conditions" (Tredinnick, 2017; Guanah, Agbanu, & Obi, 2020). AI is a system that changes behaviour based on data collected, usage analysis, and other observations without being explicitly programmed (Guzman, & Seth, 2020). This implies that AI is a constellation of technologies that enable machines to act with higher levels of intelligence while emulating human capabilities to sense, comprehend and act. Literature has indicated that there are two types of artificial intelligence - weak artificial intelligence and strong artificial intelligence. In strong artificial intelligence, the computer is intellectual and self-learning. AI permits academic tertiary institutions to automate their services. School automation is becoming necessary since it allows school services to be programmed for easy access to information. The concept can be linked to "process automation", "the internet of things", "data processing", "tangible robotics" and "conversational interaction". Artificial intelligence is arguably the next frontier in the evolution of computing technology.

Artificial Intelligence (AI) has been studied for decades and is still one of the most challenging subjects in digital computer (McCorduck, 2014). However, it is taking the world by storm, considering the application of its innovative uses across all industry segments. AI technology ranges from machines truly capable of thinking to search algorithms used to solve societal problems. In fact, intelligent robots are slowly and gradually in demand and can be considered as an emerging technology in the field of surgery. Most AI examples that is heard about today from chess-playing computers to self-driving cars rely heavily on deep learning and natural language processing (McGuire, 2016). Using these technologies, computers can be trained to accomplish specific tasks by processing large amounts of data and recognizing patterns in the data. The overall research goal of artificial intelligence is to create technology that allows computers and machines to function in an intelligent manner. The general problem of simulating (or creating) intelligence has been broken down into sub-problems. These consist of particular traits or capabilities that researchers expect an intelligent system to display. The traits are learning, reasoning, problem solving, perception, planning and speech recognition. These traits have been described to have received the most attention in AI technology.

Artificial Intelligence (AI) has the potential to revolutionize education by offering personalized, engaging, and flexible learning experiences. It addresses the challenges of teaching abstract concepts, fosters real-world application, and enhances quantitative and data analysis skills. By leveraging the promise of Artificial Intelligence (AI), Economics lecturers can better prepare students for success in the dynamic and interdisciplinary field. Therefore, this study

seeks to examine the awareness and use of artificial intelligence among university undergraduate Economics students in Anambra state.

Statement of the Problem

Artificial intelligence is fast becoming popular and evolving in education especially instructional delivery method in schools in technologically advanced countries. Researchers agree that adoption of artificial intelligence will lead to enhanced quality of the education, thereby achieving the objective of quality education programme. Awareness and use of artificial intelligence has also drastically affected the achievement of education programme were its been used. This is due to the fact that no meaningfully teaching –learning process can occur without the appropriate instructional materials and facilities. The above observations inspired the researchers to be curious to seek for strategies to ensure quality AI among undergraduate Economics students in Anambra state. Hence the study examines the awareness and use of artificial intelligence among university undergraduate Economics students in Anambra state.

Purpose of the Study

The general purpose of this study was to examine the awareness and use of artificial intelligence among university undergraduate Economics students in Anambra state. Specifically the study seeks to ascertain;

1. The level of awareness of AI among university undergraduate Economics students in Anambra state.
2. Factors that influence the use of AI among university undergraduate Economics students in Anambra state.
3. The potential challenges that university undergraduate Economics students in Anambra state may face in the use of AI

Research Questions

The following research questions were formulated to guide the study:

1. What is the level of awareness of AI among university undergraduate Economics students in Anambra state?
2. What are the factors that influence the use of AI among university undergraduate Economics students in Anambra state?
3. What are the potential challenges that Economics students in Anambra state may face in the use of AI?

Methodology

The design for the study was a descriptive survey research design. Nworgu (2016) defined descriptive survey as those studies that aim at collecting data and describing in a systematic manner, the characteristic features and facts about a given population. This study was carried out in Chukwuemeke Odumegwu Ojukwu University Igbariam Campus and Nnamdi Azikiwe University, Awka, Anambra State. The population of the study comprised all the Economics department students in the Faculty of Social Science, Chukwuemeke Odumegwu Ojukwu University and Nnamdi Azikiwe University, Awka, Anambra State with population of 2,520 students. (Source: Directorate of Academic Planning of Chukwuemeke Odumegwu Ojukwu University and Nnamdi Azikiwe University Awka, 2023). Simple random sampling was used to obtain 120 students each from the two departments. This brought the sample size to 240 students. Instrument for data collection was researchers-developed questionnaire titled “Awareness and Use of Artificial Intelligence among University Undergraduate Students (AUAIUUS)” was used to obtain data. The instrument has two sections (A, and B) section A contained respondents bio-data while section B contained items answering the research questions. The questionnaire

contained 18 items for general feedback on the awareness and use of artificial intelligence among university undergraduate students. The questionnaire was constructed in a way that the respondents had to choose one of the response options of four-point rating scale of: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument was administered to the respondents by the researchers with the help of two research assistants. The instrument was administered and collected on the spot and only the completely filled instrument was included in the study. The statistical measure that was used to analyze the data collected is the mean statistical methods. It was used to answer the research questions. Decision rule was that any item with the mean score of 2.50 and above was taken as agreed, while weighted mean scores below 2.50 was taken as disagreed.

Result

Research Question 1: What is the level of awareness of AI among university undergraduate Economics students in Anambra state?

Table 1: Responses on source of awareness of AI among university undergraduate Economics students in Anambra state

| SN | ITEMS | \bar{x} | Decision |
|----|--|-------------|---------------|
| 1 | I became aware artificial intelligence from Literature book | 3.31 | Agreed |
| 2 | I became aware artificial intelligence from documents and text books | 3.41 | Agreed |
| 3 | I became aware artificial intelligence from friends | 3.07 | Agreed |
| 4 | I make use of Alexa | 3.11 | Agreed |
| 5 | I make use of Google Assistance | 3.09 | Agreed |
| 6 | I make use of Wysa | 2.42 | Disagreed |
| 7 | I make use of Elsa Speak | 2.39 | Disagreed |
| 8 | I make use of FaceApp | 3.10 | Agreed |
| 9 | I make use of FaceApp | 3.08 | Agreed |
| 10 | I make use of Duolingo Bots | 3.13 | Agreed |
| | Cluster | 3.01 | Agreed |

Table 1 shows that items 1, 2, 3, 4, 5, 8, 9 and 10 were agreed by the respondents to be the level of awareness and use of AI among undergraduate Economics students in Anambra state while items 6 and 7 disagreed to the use of the AI instruments. This means that the students are highly aware and makes use of artificial intelligence, since the grand mean is 3.01 which are above 2.50.

Research Question 2: What are the factors that influence the use of AI among university undergraduate Economics students in Anambra state?

Table 2: Responses on factors that influence the use of AI among university undergraduate Economics students in Anambra state

| SN | ITEMS | Mean | Decision |
|-----|---|-------------|---------------|
| 11. | Performance expectancy influence the use of AI | 3.43 | Agreed |
| 12. | Social influence leads to the use of AI | 3.49 | Agreed |
| 13. | Effort expectancy influence the use of AI | 2.43 | Disagreed |
| 14. | Facilitating conditions influence the use of AI | 3.33 | Agreed |
| | Grand Mean | 3.17 | Agreed |

Table 2 shows that items 11, 12 and 14 were agreed by the respondents to be the factors that influence the use of AI among university undergraduate Economics students in Anambra state while item 13 was disagreed. This means that there are factors that influence the use of AI among university undergraduate Economics students, since the grand mean is 3.17 which is above 2.50.

Research Question 3: What are the potential challenges that Economics students in Anambra state may face in the use of AI?

Table 3: Responses on the potential challenges that Economics students in Anambra state may face in the use of AI

| SN | ITEMS | \bar{x} | Decision |
|----|---------------------------------------|-------------|---------------|
| 15 | Inadequate funding | 3.02 | Agreed |
| 16 | Intermittent power supply | 2.74 | Agreed |
| 17 | Weak telecommunication infrastructure | 2.19 | Disagreed |
| 18 | Fear of job loss for staffs | 3.04 | Agreed |
| | Grand Mean | 2.75 | Agreed |

Table 3 shows that items 15, 16 and 18 were agreed by the respondents to be the potential challenges that Economics students in Anambra state may face in the use of AI, while item 17 was disagreed. This means that there are potential challenges that Economics students in Anambra state may face in the use of AI since the grand mean is 2.75 which is above 2.50.

Summary of findings

1. Economics students in Anambra state are aware of artificial intelligence
2. There are factors that influence the use of AI among Economics students in Anambra state.
3. There are potential challenges that Economics students in Anambra state may face in the use of AI

Conclusion

While university undergraduate Economics students in Anambra state are aware of the concept of AI and the relevance of AI in school operations, the school libraries are yet to fully adopt and use these technology. Many countries in the world have adopted the use of AI in class operations, and it is necessary for academic institutions in Nigeria to follow suit. Effort expectancy, performance expectancy and social influence are the three constructs that will influence the behavioural intention of students to use AI technologies. The students affirmed that they need adequate training on ICT and AI technologies before the deployment of the technology. Inadequate power supply is identified as the main challenge that may affect the adoption and use of AI.

Recommendations

1. There is need for university managements to create practical courses on ICT usage to teach students operation of computers. Also, there is need for adequate training for students on how to use AI. They should also be educated on the various benefits of the adoption of AI in academic libraries.
2. Universities managements should make funds available for the acquisition of necessary facilities that will promote effective deployment of AI technologies.

3. The adoption of AI will depend on positive and strong relationships that will enhance students' behavioural motive to use AI. It is well recognised in user acceptance studies that users' intention to use a new technology is determined primarily by the perception that such a technology would be advantageous and increase job performance.
4. AI designers should make the interfaces user-friendly. This will motivate the students to use the technologies more.

References

- Chassignol, M., Khoroshavin, A., Klimova, A., & Bilyatdinova, A. (2018). *Artificial Intelligence trends in education: A narrative overview*. *Procedia Computer Science*, 136, 16–24. <https://doi.org/10.1016/j.procs.2018.08.233>
- De-Lima-Santos M. and Lucia M., (2021) “A challenging future for the Latin American news media industry.” *In journalism, data and technology in Latin America, edited by Ramón Salaverría and Mathias-Felipe De-Lima-Santos*, 1st ed., 229–62. Cham: Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-030-65860-1_8.
- Guanah, S. J., Agbanu, N. V. & Obi, I. (2020). Artificial intelligence and journalism practice in Nigeria: Perception of journalists in Benin City, Edo State. *International review of humanities Studies*, 5(2): 698-715. Available at: www.irhs.ui.ac.id.
- Guzman, Andrea L., and Seth C. Lewis. (2020). “Artificial intelligence and communication: A human–machine communication research agenda.” *New media & society* 22 (1): 70–86. <https://doi.org/10.1177/1461444819858691>
- McCorduck P (2014). *Machines who think. Artificial intelligence*. Pp.340–400.
- McGuire B (2016). *History of AI applied to Chess*. Washington: History of Computing CSEP 590A.
- Murphy, R. F. (2019). *Artificial Intelligence Applications to Support K-12 Teachers and Teaching: A Review of Promising Applications, Opportunities, and Challenges*. 20.
- Uchehukwu, A. (2018). *The Role of AI in Modern Computing_ and Education*. Technology Education