ARTIFICIAL INTELLIGENCE TOOLS AS CORRELATES OF QUALITY RESEARCH WORK IN OFFICE TECHNOLOGY AND MANAGEMENT DEPARTMENT (OTM) IN AKANU IBIAM FEDERALPOLYTECHNIC UNWANA, IN EBONYI STATE, NIGERIA

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Abstract

This study examined Artificial intelligence tools as correlates of quality Research Work in Office Technology and Management department (OTM) in Akanu Ibiam Federal Polytechnic unwana, Ebonyi State, Nigeria. This paper examined the concept AI, AI tools, Quality research work and OTM, stating how quality research work could be achieved using AI tools in OTM. A Correlational research design was used for the study. Two research questions and two hypothesis guided the study. The population of the study comprised all the 222 students of the OTM department. The population was considered manageable hence census sampling technique was used. Two sets of questionnaires were developed by the researcher for data collection. The first questionnaire titled: Artificial Intelligence tool questionnaire (AITQ) was designed to collect information on AI tools while the second questionnaire titled: Quality research work questionnaire (QRWQ) was designed to collect information on quality research work. The instruments were face validated by three research experts. The test of reliability of the instruments yielded coefficient value of .85 and.83 respectively. Data were analyzed using Pearson Product Moment correlation to answer research questions and linear regression to test hypothesis at .05 level of significance. Findings revealed that the use of, AI tools for research work relate highly positive to the achievement of quality research work in OTM. It was recommended among others that students use AI tools to carry out research.

Keywords: *Artificial intelligence, AI Tools, Quality research work, Office technology and Management.*

Introduction

Artificial Intelligence (AI) in the researchers view is the ability of computer machines to perform task that would have required human intelligence. Artificial intelligence (AI) according to Kaplan is a system that interprets external data , learn and use those learning to achieve specific goal or task via adoption. James (2024) views Artificial Intelligence as the technology that enables computers and machines to stimulate human intelligence and problem solving tasks. Furthermore, Artificial intelligence represents the ability of computerized systems to carryout human task thereby making task less burdensome for the human brain and producing same result within a limited time frame.

Artificial intelligence (AI) tools according to Kaplan and Haenlein (2019) are software applications that use artificial intelligence techniques to perform tasks that require human intelligence. Ai tools

are computer oriented tools used by researchers to provide quality information to help proffer solutions to academic challenges, Elis (2023) in support of Elis opinion, Hamid,(2024) in his work suggests AI tools that help solve educational problems.This study focused on two AI tools namely; Ibm Spss and Turnitis as correlates of quality research work in office and technology and management department in Akanu Ibiam Federal Polytechnic, Unwana, Ebonyi State

Statistical package for social sciences also referred to as Statistical product and service solution with the acronym (SPSS) is defined as a application software developed by International Business machine (IBM) since (2009) that aids in the analysis of data in research work. SPSS as an Artificial intelligence tool is used for data entry cleaning, descriptive statistics analysis and output, parametric and non-parametric tests(tests of relationship and difference), data division based on factors and groups, quantitative and qualitative with observed variables and coded themes respectively amongst others. The shift progress of Artificial intelligence tools in making cumbersome task less burdensome, triggered a transformative influence in Business education in which office technology is a branch, necessitating it to adapt and flow with the use of Artificial intelligence tools for technological and educational advancement in the field through quality research work. Kaire (2019).

Quality research refers to the systematic collection, analysis, interpretation and presentation of information related to a field of education using various methods.Quality research work, creates new knowledge in a new and creative way aimed at solving educational problems for technological and educational advancement. It entails synthesis and analyses of previous research to the extent that it leads to new creative outcome and must be within the confine of the practice, principles and application. Madual (2023)
Quality research work entails the following,
i. Identification of a problem
ii. Review of related literature
iii. Creating of research questions and hypothesis
iv. Designing of the research approach
v. Data collection, analysis, presentation and interpretation of result.

Office technology and management is a course introduced in the school of Business for polytechnics in the National diploma and Higher diploma levels expressing the need for a shift from the traditional education which is not skill oriented to a vocational education for functional education that has to be relevant and practical for the acquisition of appropriate skill and development competencies (National Policy on Education). Office technology and management is centered on skill acquisition with its content as effective use of modern office machines for productivity and office management with creativity and innovation for technological advancement and socio-economic development .Esene. (2018) defined OTM as a course that prepares students for entry into advancement jobs within Business and education environments, handling their own business affairs and functioning intelligently as citizens in a business and education environment .It is expected that before the end of the National diploma Programme in Office technology and management department, each student is expected to write and defend a project on a topic, which forms part of the assessment.

Artificial intelligence tools are increasingly being recognized as valuable tools in the research process as studies have shown that the use of AI tools enhances the quality of research works in the fields by providing more efficient data analysis and literature review. In view of the above assertions there is need for students to use AI tools such as SPSS and TURNITIN among others for the presentation of quality research work to ensure good grades in their project. Madual (2024) stressed the need for students to use AI tools in their research work to earn good grades as a result of good data collection, analysis, interpretation and presentation of quality research work.

Statement of the problem

Artificial intelligence tools play a vital role in the analysis, interpretation and presentation of data in any quality research work in office technology and management. In this regards, students of OTM department who write projects do not make use of these tools to enable them present quality research work. Unfortunately it has been observed that most students in OTM department who write projects at the end of their programme be it ND or HND, do not use AI tools for their data analysis which has resulted to poor quality research work. Regrettably, there is no empirical evidence on the extent to which artificial intelligence tools are correlates with quality research work in OTM deparments. This study addresses the gap in understanding how AI tools correlates quality research work in OTM department of Akanu Ibiam federal polytechnic unwana, Ebonyi State.

Research questions

The following research questions guided the study

1. What is the extent to which SPSS relate to quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state?
2. To what extent does Turnitis relate to quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state

Research hypothesis

The following null hypothesis were formulated and tested at .05 level of significance.

$H0_1$: There is no significant relationship between SPSS and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state.

$H0_2$: There is no significant relationship between Turnitin and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state.

Methodology

The study employed a correlational survey research design, considering the fact that it would help establish the relationship and direction of relationship between the independent variable(quality research work and the dependent variable(AI tools). The population for the study was 222, made up of all ND and HND OTM students. Considering the population as manageable hence, census sampling technique was adopted. The instrument for data collection were two sets of questionnaire titled Artificial Intelligence tool questionnaire (AITQ) and Quality research work questionnaire (QRWQ) designed to collect information on Artificial Intelligence tool and quality research work respectively . The instruments were built on four (4) point rating scale of very High Extent (VHE)-4 points, High Extent (HE) -3 points Low Extent (LE)-2 points and Very Low Extent(VLE)-1 point and were face validated by three research experts.the test of reliability of the instruments yielded coefficient value of .85 and.83 respectively. Data were analyzed using Pearson Product Moment correlation to answer research questions and linear regression to test hypothesis at .05 level of significance, any item whose p-value is greater than or equal to the alpha-value of .05 was accepted while any item with p- value less than the alpha value of .05 was rejected. Findings revealed that the use of, AI tools for research work relate highly positive to the achievement of quality research work in OTM.

Findings and discussion

Research question 1: What is the extent to which SPSS relate to quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state?

Table 1, Pearson Product Moment correlation analysis ofextent to which SPSS relate to quality research work in OTM

		Spss	Quality research work
Spss	Pearson Correlation	1	.629**
	Sig.(2.tailed)		.005
	N	222	222
Quality research work	Pearson Correlation	.629**	1
	Sig.(2.tailed)	.005	
	R^2	.395	
N	222	222	

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

Table1. Results showed a correlation coefficient (r) of .629 which is a positive correlation and is within the coefficient limit of +/- 0.40-0.69 as Moderate/Medium extent relationship. This indicates that SPSS as an AI tool relate to quality research work in OTM department .The percentage coefficient of determination (R^2) .395 shows that 39.5% of the variations in students quality research work could be attributed to AI tools (Spss). This is an indication that 60.5% of variation in teachers' quality instructional delivery is attributed to other factors other than teachers' technical skills.

A corresponding hypothesis formulated to further address the research question is hypothesis 1.

Hypothesis 1

H_{O1}: There is no significant relationship between SPSS and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state.

Table 1.2 Regression analysis of relationship between SPSS and quality research work in OTM department

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1352.814	1	1352.814	7.871	.005
	Residual	37810.735	220	171.867		
	Total	39163.550	221			

a. Dependent variable: Quality research work
b. Predictors: (Constant), Spss

Df= degree of freedom, F= f-calculated, correlation is significant at 0.05 level (2 tailed)

Table 1.2 revealed that F-calculated value of 7.871 at 0.05 level of significance. The table also shows that the P-value of .005 is less than the alpha value at 0.05; thus null hypothesis which states that there is no significant relationship between SPSS and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state, is rejected and upheld that there was significant relationship between SPSS and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state. This implies that AI tools relate to quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state.

1. **Research Question 2** To what extent does Turnitis relate to quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state Akanu Ibiam Federal Polytechnic unwana, Ebonyi state?

Table 1.3, Pearson Product Moment Correlation Analysis ofextent Turnitis relate to quality research work in OTM

		Turnitis	Quality research work
Turnitis	Pearson Correlation	1	. 658**
	Sig.(2.tailed)		.000
	N	222	222
Quality research work	Pearson Correlation	.658**	1
	Sig.(2.tailed)	.000	
	R^2	.433	
N	222	222	

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

Result on Table 1.3 showed a correlation coefficient (r) of .658 which is a positive correlation and is within the coefficient limit of +/- 0.40-0.69 as Moderate/Medium extent relationship. This indicates that Turnitis relate to quality research work in OTM department.

A corresponding hypothesis formulated to further address the research question is hypothesis 2.

Hypothesis 2

H_{O2}: There is no significant relationship between Turnitin and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state

Table 1.4 Regression analysis of relationship between Turnitin and quality research work in OTM department

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2173.014	1	2173.014	67.976	.000
	Residual	38990.536	220	277.230		
	Total	39163.550	221			

a. Dependent variable: Quality research work

b. Predictors: (Constant), Turnitis

Df= degree of freedom, F= f-calculated, correlation is significant at 0.05 level (2 tailed)

Table 1.4 revealed that F-calculated value of 67.976 at 0.05 level of significance. The table showed that the P-value of .000 which is less than the alpha value at 0.05 was obtained; thus null hypothesis which states that there is no significant relationship between Turnitin and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state is rejected and accepted that there was significant relationship between Turnitin and quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state. This implies that turnitin relate to quality research work in OTM department in Akanu Ibiam Federal Polytechnic unwana, Ebonyi state.

Conclusion

Artificial intelligence tools are correlates with quality research work and so students writing projects in OTM should integrate these tools into the research process as to significantly present quality research work.

Recommendation:

1. Workshops should be organized focusing on competencies on the use of AI tools for research.
2. Implementation of students use of AI tools for research work should be ensured.

References

Ellis, R. A. (2023). Inquiry based learning in higher education. Principle forms educational objectives and disciplinary variations.

Ely,D.P.(1999) conditions that facilitate the implementation of educational technology innovations.

Federal government of Nigeria(2016),Nigerian Educational research and Development council, Abuja

Ely,D.P.(1999) conditions that facilitate the implementation of educational technology innovations

Enholm, I. M. (2022). Artificial Intelligence and business value: A literature review, 1709-1734

Esene,R.A (2018) Perception of OTM Educators towards quality assurance in office technology and Management programmes in polytechnic in Delta and Edo state. Nigerian journal of Business Educators, (2), 23-38.

Hamid. F.(2024) 10 Best AI tools for Education(Students & Teachers in 2024 http//wwwegant themes.com/ blog/business/best ai-tools- for education

James, H.B(2024). Artificial intelligence and teaching and learning international journal of innovation, 2(20, 66-71.

Kaplan .A & Haenleu,M (2019) Siri Siri, in my hand who's the fairest in the land? On the interpretation illustration and implication of Artificial intelligence. Business horizons 62(1),15-25

Mudual, T.K 223. Essential communication skills for Teachers. Ibadan: Evergreen Academic press.