CONTEMPORARY TECHNOLOGY AND PUBLIC ADMINISTRATION RESEARCHES IN AKWA IBOM STATE UNIVERSITY, NIGERIA

Ekong E. Daniel, *Ph.D., MNITP, RTP*
Department of Public Administration
Faculty of Management Sciences
AkwaIbom State University,
Nigeria

ABSTRACT

The contemporary world is driven by technology. In virtually every aspect of modern life, technology has and continued to shape and transform personal affairs to global affairs. Therefore, to make significant relevance in the contemporary world, Public Administration research experts must adapt to modern technology as a framework for their researches. Such technology include among others; Social Network Analysis, Online Surveys, Artificial Intelligence and Geographic Information Systems. At the present, there seems to be a disconnect from modern technology framework in the researches carried out by students in the Department of Public Administration, Akwa Ibom State University. To ascertain this assertion, the study therefore set out to analyse the researches undertaken by the students in the Department of Public Administration, Akwa Ibom State University for a period of eight years. The technology determinism concept by Thorstein Veblen was adopted as the conceptual framework for the study. Content Analysis research design was applied. Data were compiled from the researcher's record of students' research reports supervised in the Department of Public Administration, Akwa Ibom State University from 2016 – 2023. The results confirmed that all the students' researches during the study period were of 'non-technology framework'. The findings reveal that the students did not incorporate technology or digital tools in the processes of data generation and compilation in their researches, indicating a gap in the application of technology in Public Administration researches, Akwa Ibom State University. This conclusion highlights the need for the Department to address these limitations and encourage the integration of technology in students' research projects to enhance their research skills and prepare them for the modern workforce.

Keywords: Contemporary technology; Public Administration researches; Akwa Ibom State University, Nigeria.

Introduction
The contemporary world is driven by technology in numerous ways. The digital communication technology (ICT) has revolutionized how we communicate, access information and connect with others. Global connectivity through internet and social media has made the world more interconnected than ever, enhancing global collaboration and exchange. Automation has increased productivity and efficiency in various industries, thus transforming how we work and live (Green, 2001).

Technology has made available vast amounts of data, thus enabling well informed and increased précised decisions in health care and finance. *E*-commerce and online shopping technology have transformed the way we shop, purchase and consumed goods and services. Remote work and virtual team technology enable flexible work arrangements, allowing people to work from anywhere and collaborate globally. Artificial intelligence and machine learning have driven innovation, improving

services and enhanced customers' experiences. In virtually every aspect of modern life, technology has and continued to shape and transform personal relationships to global affairs, (Dusek, 2006).

Therefore, to make relevance in the contemporary world, Public Administration research experts must adapt to technology as a framework for their researches. The researcher's five year experience as project supervisor in the Department of Public Administration, Akwa Ibom State University, has revealed a seeming disconnect from technology framework in the researches carried out by students at various levels in the Department of Public Administration. Therefore, the study set out to analyse from existing records for the purpose of ascertaining the number of students' research projects based on technology framework and the number of students' research projects based on non-technology framework. It was also the aim of the study to initiate ideas to help close the real gaps observed.

Conceptual Framework

This study was founded on the concept of technology determinism. The concept of technological determinism is believed to have been coined by Thorstein Veblen, an American social scientist (1857–1929). Technology determinism is a theoretical approach that suggests that technology is the primary driver of social, economic, and political change. It argues that technological advancements shape society and determine the course of human history, rather than vice versa (Heder, 2021). According to Macmillan (2015), there are two main types of technology determinism:

i.   *Hard determinism:* This perspective asserts that technology develops independently of social and cultural factors, and that its development and impact are inevitable and unstoppable.

ii.   *Soft determinism*: This perspective acknowledges that social and cultural factors influence the development and impact of technology, but still maintains that technology has a significant degree of autonomy and determinism. The key features of technology determinism include:

a.   Technological progress as the primary driver of change.
b.   Technology as an autonomous force, independent of human control.
c.   Deterministic view of technological impact, with little room for human agency or social influence.

d.   Focus on the technical aspects of technology, rather than its social or cultural context (Kunz, 2006).

Critics of technology determinism concept however argue that the concept overlooks the role of human agency and social factors in shaping technological development and impact. They further opined that the concept fails to account for the complex and multifaceted nature of technological change, and finally contend that the concept neglects the potential negative consequences of technological change and that it overemphasizes the inevitability of technological progress, ignoring the possibility of alternative paths or choices. Despite the criticism, technology determinism has been influential in shaping our understanding of the relationship between technology and society. Its limitations spotlight the essential for a multidimensional approach to understanding the complex interactions among technology, society and culture, (Macmillan, 2015).

The concept of technology determinism was adopted in the study to explain how technology can shape public administration, policy, and decision-making processes. It should be understood that

technology determinism informs researchers about the potential of technology to drive reforms and improve public service delivery. It helps analyze the relationship between technology and public policy and enables researchers to explore how technology influences policy decisions and vice versa.It aids create effects of technology on public administration's organizational structure and management.Furthermore, technology determinism helps researchers understand how technology transforms the way public administration operates, thus highlighting the potential of technology to address public administration challenges.

Moreover, technology determinism encourages researchers to explore technological solutions for issues like efficiency, transparency, and accountability.Understanding the digital divide and its implications for public administration is also very necessary. Besides, technology determinism highlights the importance of addressing unequal access to technology and its impact on public services and helps identify opportunities for technological innovation in public administration.

Additionally, technology determinism inspires researchers to explore new technological applications and their potential to enhance public services.Likewise, applying technology determinism to the study of technological approaches in public administration, researchers can better comprehend the complex dynamics between technology, policy, and public services, ultimately informing strategies for effective technology integration and innovation in the public sector, (Drew, 2021).

Methodology

Content analysis research design was adopted. Titles of research projects supervised in the Department of Public Administration, Akwa Ibom State University were compiled from the researchers' records from 2016 to 2023. *Technology base framework used* and *non-technology base framework used* coding scheme was developed and applied to each research project, (See Table 1). By analyzing the coded data set, a trend was identified. Additional information was obtained from interaction with colleagues and students to draw conclusions.

Results and Discussion

Table 1: Record of Research Projects Supervised from 2016 – 2023

Year	S/N	Research topics	Level	Technology based framework	Non-technology based framework
2016/2017	1.	Manpower and Industrial Development in Uyo Metropolis: A case of ITF	B.Sc.	-	**Yes**
	2.	Electronic Administration and the Bureaucracy in Nigeria: A Case study of Ministry of Education, Akwa Ibom State	B.Sc.	-	**Yes**
	3.	Commercialization of Public Enterprises and Electronic Development: A case study of Akwa Ibom State Transport Company (AKTC)	B.Sc.	-	**Yes**

	4.	Impact of Environment on Organizational Productivity: A Case study of Akwa Ibom State University, Nigeria.	B.Sc.	-	**Yes**
2017/2018	5.	National Youth service Corps and National Development in Nigeria: An Evaluation	B.Sc.		**Yes**
	6.	The Role of the Economic and Financial Crime Commission in combating corruption in Nigeria (1999-2015)	B.Sc.		**Yes**
	7.	Public-Private partnership and Infrastructural Development in Nigeria: Issues and Prospects	B.Sc.		**Yes**
	8.	Environmental Impact of Oil Exploration in Akwa Ibom State : A Case study of Mobil Producing Nigeria Unlimited	B.Sc.		**Yes**
	9.	National Youth Service Corps and National Integration in Nigeria: An Evaluation	B.Sc.		**Yes**
	7.	Public-Private partnership and Infrastructural Development in Nigeria: Issues and Prospects	B.Sc.		**Yes**
	8.	Environmental Impact of Oil Exploration in Akwa Ibom State : A Case study of Mobil Producing Nigeria Unlimited	B.Sc.		**Yes**
	9.	National Youth Service Corps and National Integration in Nigeria: An Evaluation	B.Sc.		**Yes**
2018/2019	10.	Public Enterprise and Operational Efficiency in Nigeria: A Case study of NTA, Uyo	B.Sc.		**Yes**
	11.	Insecurity and Public Policy in Nigeria: A Case study of Federal Government Amnesty Programme	B.Sc.		**Yes**
	12.	Industrial Action and Socio-Economic Development in Nigeria: A Case study of Nigerian Labour Congress (NLC)	B.Sc.		**Yes**
		Funding and the Development of Nigerian Universities: A Case study of Akwa Ibom			

	13.	State University	B.Sc.	**Yes**
	14.	Industrialization and Economic Development in Akwa Ibom State: A Case study of Syringe Industry	B.Sc.	**Yes**
	15.	N-Power Programme and Poverty Alleviation in Rural Areas in Akwa Ibom State	B.Sc.	**Yes**
2020/2021	16.	Information Communication Technology and Service Delivery in Akwa Ibom State University	B.Sc.	**Yes**
	17.	Corporate Social Responsibility of Akwa Ibom State Polytechnic and Its Development of Ikot Osurua Community	B.Sc.	**Yes**
	18.	Covid-19 and Education Development in Akwa Ibom State: A Case study of Akwa Ibom State University	B.Sc.	**Yes**
	19.	Free and Compulsory Education Policy and Educational Development in Akwa Ibom State (2007 – 2015)	B.Sc.	**Yes**
	20.	Tertiary Education Trust Fund (TETFUND) Intervention and Educational Development in Nigeria: A Case Study of Akwa Ibom State University	B.Sc.	**Yes**
	21.	Electronic Administration and Bureaucracy in Nigeria: A Case study of Akwa Ibom State Ministry of Justice	M.Sc.	**Yes**
	22.	Corporate Social Responsibility and Socio-Economic Development of Akwa Ibom State: A case study of Champion Breweries Limited	M.Sc.	**Yes**
2021/2022	23.	Government Owned Companies and Economic Development: A Case study of Victor Attah International Airport	B.Sc.	**Yes**
	24.	Waste Management and Sustainable Development: A Case study of Akwa Ibom State Environment Protection and Waste Management Agency	B.Sc.	**Yes**
		Information Communication Technology and	B.Sc.	

	25.	Educational Development of Akwa Ibom State University		**Yes**
	26.	Consultancy and Service Delivery in the Public Sector: A Case of Akwa Ibom State	B.Sc.	**Yes**
	27.	Public Corporation and Social Service Delivery: A case study of Akwa Ibom State Broadcasting Corporation	B.Sc.	**Yes**
2022/2023	28.	Taxation and Development in Eket Local Government Area, Akwa Ibom State, Nigeria	B.Sc.	**Yes**
	29.	Youth Empowerment and Crime Reduction in Nigeria: A Case of Akwa Ibom State	B.Sc.	**Yes**
	30.	Ad-hoc staff and Election Administration in Akwa Ibom State: A Case study of the 2023 General Elections	B.Sc.	**Yes**
	31.	Procurement System and Organisational Productivity in Akwa Ibom State Civil Service (2015 – 2023)	B.Sc.	**Yes**
	32.	Women Empowerment and Development in Akwa Ibom State (2015 – 2020)	B.Sc.	**Yes**
	33.	Covi-19 and the Economic Development of Akwa Ibom State	B.Sc.	**Yes**

Source: Compiled from the Researchers' Records

As shown in Table 1, a total of thirty-three (33) B.Sc. and M.Sc. researches were examined and one hundred percent (100%) was identified in the coding system as *non-technology base framework used.* What this means is that all the researches performed by students in the Department during the study period *adopted non- technology base framework*in the generation and compilation of data.

There are many technological base research tools available for public administration researchers. They can be used for data generation, compilation, analysis and presentation of results and findings. They include;

i. ***Data Analytics***: Using tools like R, Python, or Tableau to analyze large datasets and identify trends, patterns, and correlations.

ii.   ***Machine Learning***: Applying algorithms like regression, decision trees, or clustering to predict outcomes, classify data, or identify relationships.

iii.   ***Social Network Analysis***: Examining social media or organizational networks using tools like Gephi or NetworkX to understand relationships and influence.

iv.   ***Geographic Information Systems (GIS):*** Using tools like ArcGIS or QGIS to analyze and visualize spatial data, such as demographic or economic trends.

v.   ***Online Surveys***: Conducting surveys using tools like SurveyMonkey or Qualtrics to collect data from diverse populations.

vi.   ***Content Analysis***: Analyzing text data using tools like NVivo or Atlas.ti to identify themes, sentiments, and trends.

vii.   ***Big Data Analytics:*** Using tools like Hadoop or Spark to process and analyze large datasets from various sources.

viii.   ***Simulation Modeling***: Using tools like NetLogo or AnyLogic to simulate complex systems and predict outcomes.

ix.   ***Web Scraping:*** Extracting data from websites using tools like Beautiful Soup or Scrapy.

x.   ***Artificial Intelligence (AI)***: Applying AI techniques like natural language processing or computer vision to analyze and interpret data.

The researcher has expertise knowledge and skill in the application *Geographic Information Systems (GIS)*. Its applications to public administration researches are hereby discussed.   GIS is a computer system for capturing, storing, checking, and displaying data related to positions on Earth's surface. GIS can be used in public administration for crime response and prevention, public health, responsiveness to public concerns, weather-related issues and business development (Daniel &Mbon, 2024).

         GIS Technology provides a robust framework for research in public administration, offering the many research base opportunities.   It can be applied to studies that examine relationships between geographic locations and public administration phenomena, such as crime patterns or healthcare access. Additionally, it provides interactive maps and visualizations to communicate complex data insights and policy recommendations. Moreover, GIS can be used to model and simulate the impact of different policy scenarios, predicting outcomes and optimizing decision-making. Besides, GIS facilitates public participation in decision-making processes, enabling citizens to provide input and feedback through interactive mapping tools.

         In furtherance, it can be applied to efficiency and effectiveness related studies to optimize resource allocation, streamline service delivery, and measure the effectiveness of public programs. Likewise, in collaborative governance studies, GIS can be used as a common platform for interagency collaboration, facilitating data sharing and coordination among stakeholders. GIS can also be used to analyze and present data-driven findings, supporting informed decision-making and policy development. Similarly, GIS can be used to analyze demographic, economic, and environmental factors, informing urban planning and development strategies. Alike, in emergency response and management studies, GIS can be utilized for disaster response, resource allocation, and impact assessment. GIS can equally be

utilized for transparency and accountability studies to provide public access to data and visualizations, promoting transparency and accountability in government operations and decision-making processes.By integrating GIS technology into research projects in public administration, scholars and practitioners can harness the power of spatial analysis and data visualization to drive innovative solutions and improved governance (Daniel, 2020).

Conclusion

The analysis reveals a *dis-connect* from technology framework in students' research projects in the Department of Public Administration, Akwa Ibom State University. The observation suggests that students' research projects did not incorporate technology or digital tools, indicating a gap in the application of technology in public administration research projects. The current curriculum is not adequately addressing the importance of technology in public administration research, leading to a lack of emphasis on technology integration.

As a result, students are not exposed to technology-related courses, training, or resources, thus hindering their ability to incorporate technology into their research projects.Even with the willingness of the author to guide the students under his supervision using the available limited knowledge, skill and tools, experience is that the students themselvesopt for the traditional methods because of lack of funds required and the rigor involved, thus neglecting the potential benefits of technology in research, such as efficiency, accuracy, and innovation.

Moreover, the university itself at the moment does not have adequate resources, such as software, hardware, or internet connectivity, to support technology-based research, the department research focus is more inclined towards traditional public administration topics, rather than technology-driven or innovative approaches.All the facts point to the critical need for the department to address these limitations and encourage the integration of technology in students' research projects to enhance their research skills and prepare them for the modern workforce.

Recommendation

In order to close the spasm between the use of traditional and contemporary research tools/ methods in the research projects embarked by the staff and students of the Department of Public Administration, AkwaIbom State University, some ideas have been initiated as recommendations and outlined as follows:

i. The Department of public administration should integrate technology-related courses into the curriculum, such as research methods using technology, data analysis software, and digital governance.

ii. Workshops and training sessions should be organized by the Departmenton the use of technology in research, including data collection, analysis, and presentation tools.

iii. The University should ensure that students have access totechnology resources such as the relevant software, hardware and internet connectivity to facilitate technology-based research.

iv. The Department should encourage collaboration with students from other Departments, such as computer science or information technology to bring diverse perspectives and skills to research projects.

v. The University should decentralize the research funding system to include Faculties and Departments in order to increase access to funds and grants for students to conduct technology-based research projects, encouraging innovation and creativity.

vi. The Department can establish partnerships with organizations and companies to provide real-world applications and case studies for students to explore in their research. Such will promote practical experience and relevance.

References

Daniel, E. & Mbon, N. (2024). Application of geographic information system (GIS) and the practice of public administration. *AKSU Journal of Administration and Corporate Governance,* 4(2), pp. 233 – 241.

Daniel, E. (2020). *Elements of land surveying and environmental mapping*. Step-by-Step Publishers.

Drew, C. (2021).*Technological Determinism Theory*.https:// helpfulprofessor.com/technology-determinism-theory. Retrieved on 26/04/24

Dusek, V. (2006).*Philosophy of technology: An introduction*. Blackwell Pub.

Green, L. (2001). *Technoculture: From alphabet to cybersex*. Allen & Unwin.

Heder, M. (2021).AI and the resurrection of technology determinism.*InformciousTarsadalom (Information Society).* 21 (2): 119 – 130.

Kunz, W. (2006).*Culture conglomerate: Consolidation in the motion picture and television industries*. Rowman& Littlefield Pub.

Macmillan, P. (2015). *Global politics*. Palgrave Macmillan.