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E-Governance and Service Delivery in Ondo State Ministry of Education: Prospects and Challenges

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Abstract
This study examines the level of e-governance adoption and its impact on service delivery in the Ondo State Ministry of Education. The research identified the challenges hindering effective e-governance adoption and provide strategies for successful implementation. A descriptive research design was employed, Communication and System theory was used to justify the study and a sample of 170 respondents was randomly selected from the ministry's staff. Data collected through a structured questionnaire was analyzed using frequencies, percentages, Friedman tests, chi-square analysis, and multiple regression. The findings reveal a low level of e-governance adoption in the ministry, attributed to inadequate funding, unstable power supply, and insufficient computer systems. Challenges such as staff resistance to change, lack of internet infrastructure, and inability to secure digital data hinder successful e-governance adoption. However, strategies like investing in employee training and development, hiring specialized IT support personnel, and allocating significant funding for contemporary ICT devices can enhance e-governance implementation. The study concludes that effective e-governance adoption in the ministry will significantly impact service delivery, enhancing operational effectiveness and promoting openness. Recommendations include providing a reliable alternative energy source, adequate funding for electronic infrastructure and human capital development, and allocating funds for contemporary ICT devices. Implementing these strategies will improve service delivery and enhance the overall efficiency of the Ondo State Ministry of Education.

Keywords: *E-governance, Service Delivery, Ondo State Ministry of Education, Challenges, Strategies, Effective Adoption.*

Introduction

The emergence of digital technology has profoundly transformed many sectors including governance and public service delivery across the globe. The widespread availability of the internet has been a cornerstone of digital transformation. The development of web technologies has enabled the creation of online platforms for a range of services, from e-commerce to online education.

Electronic governance (e-governance) refers to the use of digital technology to facilitate and improve the delivery of government services, enhance administrative efficiency, and increase transparency and citizen engagement. E-governance, which leverages information and communication technology (ICT) to enhance the efficiency, transparency, and accountability of government processes, has become a pivotal strategy in modern administration. In Nigeria, as in many developing nations, the integration of digital tools into governmental functions represents a significant shift towards more responsive and efficient public service delivery.

E-governance is a concept that focuses on the use of Information and Communication Technology (ICT) to facilitate interactions between government and citizens. It can be categorized into four main types: Government-to-Citizen (G2C), Government-to-Business

(G2B), Government-to-Government (G2G), and Governments-to-Employees (G2E). G2C focuses on the government's role in serving its citizens, using ICT to deliver services and address concerns. E-governance streamlines administrative procedures, increasing efficiency in service delivery. It introduces automation and workflow optimization, minimizing the need for manual intervention and repetitive tasks. It also facilitates data integration and interoperability across government departments, enabling seamless information exchange and coordination. E-governance also promotes citizen self-service and empowerment by offering online portals and mobile applications for accessing government services and information (Adegoroye et al., 2015). This approach has been adopted in Nigeria, where services like online education, recruitment processes, and social media dissemination have been implemented (Backus, 2001). G2B encapsulates the integration of ICT into daily interactions between governmental bodies and businesses, enhancing efficiency and transparency. G2G focuses on the interactions between different levels of government, facilitating smooth cooperation and coordination of processes. G2E e-governance facilitates the government's relationship with its employees through digital means, ensuring efficient operations. This model is found in both the civil service and public sector, with websites, emails, and social media platforms serving as conduits for communication (Choudhury, 2022).

The integration of e-governance in public sector institutions aims to enhance efficiency, transparency, and service delivery. However, despite advancements in digital technology, many public sector agencies, including those within Nigeria's educational sector, face significant challenges in effectively implementing and utilizing e-governance systems. The effectiveness of e-governance in Nigeria faces several challenges, including infrastructure and human difficulties, inadequate awareness of e-governance among the workforce, and a lack of appropriate training (Akpan and Titus, 2019). The Joint Admission and Matriculation Board in South East Nigeria has examined the influence of e-governance on service delivery, but it does not directly address industry-specific problems.

The Ondo State Ministry of Education's current circumstances, nevertheless, appear to be far from perfect. Despite the fact that Nigeria has acknowledged the importance of e-governance in improving public service delivery (Ajibade, Ibietan and Ayelabola, 2017; Adegoroye, Oladejo, and Yinus, 2015), the use in the context of the Ondo State Ministry of Education is still misunderstood and understudied. The successful adoption of e-administration and e-governance is hampered by worries about inadequate finance, erratic power supply, and internet problems (Adegboyega, Ishola and Ojo, 2023; Akpan and Titus, 2019).

The gap between e-governance's promise and its existing use inside the Ondo State Ministry of Education then becomes the main issue. Particularly, it is currently unclear how to apply e-governance in the Ministry's services like e-learning, computer-based testing, and recruiting. This has a wide range of effects. First, the Ministry's service delivery is still inefficient and subpar, which causes delays and the possibility of inaccurate educational service delivery.
This resulting to raising some research question to know the current level of E-governance in Ondo State Ministry of Education, to also know the challenges of E-governance in Ondo State Ministry of Education and highlight strategies adopted to enhance E-governance in Ondo State Ministry of Education.

Moreover, the absence of an efficient e-governance framework may lead to the waste of opportunities and resources, which would make it more difficult for the Ministry to carry out its educational purpose.

There seems to be a lack of research focusing on industry-specific hurdles, and the roles and duties of stakeholders have not been thoroughly studied. Comparing the implementation of e-governance in Nigeria and other countries can provide insights into how they manage specific issues and make the most of their capabilities. Additionally, finding and debating successful approaches to e-governance can provide a roadmap for the next steps. The Ministry of Education (in Ondo State) is a critical agency responsible for managing educational services and policies.

While there have been efforts to incorporate digital tools and platforms into the Ministry's operations, several issues persist.

This study provides insights into how digital tools can optimize public sector performance, by exploring the implementation and impact of e-governance. This can serve as a model for other government agencies in Ondo State and beyond, promoting a culture of efficiency and accountability.

Literature Review

Norris and Moon (2005) delve into the adoption rate of e-government at the grassroots level in the USA, discovering varying adoption rates across 1,500 local governments. Their findings underscore the significant role that economic factors play in determining the adoption of e-government. The recommendation to focus on reducing economic barriers illuminates the intricate relationship between economics and the adoption of technology within the government sector.

A focus on developing countries by Heeks (2003) examines why most e-government projects fail in these regions. Through analyzing 40 e-government projects, Heeks identifies a misalignment between the design and local context as a leading cause of failure. This work highlights the significance of acknowledging local needs and capacities in design and implementation, offering a lens through which we can understand the unique challenges faced by developing countries in implementing e-government projects.

The work of Bertot, Jaeger, and Grimes (2010) explores how information and communication technologies (ICTs) can create transparent government. They argue that ICTs hold the potential to create a culture of openness and serve as anti-corruption tools. Their thematic analysis warns that while promoting transparency, these technologies need to be implemented with care and must be guided by policies that engage civil society.

Thomas and Streib (2005) in their work "E-Government and Education: Examining Education in the Electronic Government Enterprise," investigated the integration of e-governance within the American education system. Their research was comprised of multiple case studies across various educational institutions. The authors formulated four objectives: examining the relationship between e-governance and education, identifying key challenges, analyzing various strategies for implementation, and proposing recommendations for integration. Utilizing mixed-methods research design, they conducted surveys and interviews to gather data, employing descriptive statistics for data analysis. Their study found that while e-governance can enhance educational efficiency, there are hurdles in infrastructure, faculty training, and policy alignment. Their recommendations included a more collaborative approach and strategic investments in technology and training.

Despite this insight into the American context, there is a noticeable gap in research focusing on Nigerian states, particularly in places like Ondo. E-governance's adaptation within African educational systems has been explored to some extent by studies such as Mutula and van Brakel (2006). In their paper titled "E-readiness of SMEs in the ICT sector in Botswana with respect to information access," they analyzed the readiness of implementing e-governance in education. Their study comprised three objectives: evaluating current readiness, identifying challenges, and suggesting strategies. They used a cross-sectional survey design and purposive sampling, employing Chi-square tests for data analysis. Their findings indicated a lack of infrastructure and policy support, recommending government intervention to foster readiness.

As pointed out, Thomas and Streib (2005) have delved into e-governance within the American education system. Their work uncovered how digital tools can foster transparency and efficiency in education but also highlighted a gap in understanding unique regional contexts, particularly in areas like Nigeria's Ondo State. While international perspectives can offer broad insights, the lack of targeted studies on Nigerian education limits the understanding of e-governance's potential application within that specific cultural and governmental landscape. The

applicability of Western models to African contexts like Nigeria may be constrained by unique challenges, such as infrastructure, resources, and cultural norms (Heeks, 2002).

Theoretical Framework

Communication Theory

The Communication Theory, as an analytical framework, offers a perspective in understanding the dynamics and intricacies of e-governance. Karl Deutsch, a prominent proponent of this theory, highlighted the centrality of communication in the organization and functioning of political systems (Deutsch, 1963). Rather than focusing on power, which had been the primary interest of political scientists, Deutsch emphasized decisions, control, and communication.

Deutsch's Communication Theory adopts concepts from modern information technology and the physiology of the nervous system to analyse political systems. He introduced cybernetic principles, which study control and communication systems in biological and man-made machinery, to political analysis. Deutsch's work concentrated less on the skeletal structure of the political system and more on its nerves or channels of communication and decision-making. The relevance of Communication Theory to e-governance is clear. E-governance essentially involves the use of information and communication technologies (ICT) to improve the delivery of public services. Effective communication channels are fundamental to the success of e-governance. By applying Communication Theory, this study can explore how information is disseminated in e-governance, how communication channels are established and maintained, and how these channels facilitate or impede the delivery of public services.

Applying the Communication Theory to e-governance also provides a framework to examine the role of various stakeholders in the process of information dissemination. Stakeholders such as government agencies, businesses, civil society organizations, and citizens are all involved in the communication processes that underpin e-governance. Understanding their roles in this communication network can provide crucial insights into the successful implementation of e-governance in Nigeria.

Furthermore, Communication Theory can help in understanding the self-regulating mechanisms within e-governance systems. These mechanisms include the methods and processes used for the acquisition, transmission, selection, and storage of information, which are all critical to the efficiency and effectiveness of e-governance.

Research Design

This study adopted a quantitative research design, utilizing structured questionnaire schedule. Data for the study was obtained from primary sources. Primary data were collected directly from the respondents through questionnaires. The Ondo State Ministry of Education Alagbaka Akure, Ondo State is adopted as the case study for this study. The total population of this study are 178 employees in the Ondo State Ministry of Education who use e-governance services for service delivery. A stratified random sampling technique was employed to select the study participants based on Taro Yamane's formula and a 5% level of precision; the sample size required from the total population of 320 in the Ministry of Education is approximately 178.

Instrument for Data Collection

The structured questionnaire crafted for this research serves as a critical tool to delve into the intricacies of e-governance within the Ondo State Ministry of Education. For the validity of research instrument, the face and content validity were conducted for the questionnaire by consulting some experts and teachers within the university to ascertain the validity of the questionnaire. Cronbach’s alpha was adopted to test the reliability of the instrument. This is a measure of internal consistency, which is how closely related a set of items are as a group. The

accepted lower limit for Cronbach's alpha is 0.60 and 0.70 above as good reliability. As a result, it is regarded as a scale dependability indicator.

Data Analysis

Statistical Package for the Social Sciences (SPSS, version 27) was employed for the analysis of the data. With the data cleaned and coded, the analysis will move into the phase of descriptive statistics. Part of the descriptive analysis includes calculating frequencies and percentages. To further delve into the research questions, the study employed Friedman tests and Chi-square analysis coupled with regression analysis for the test of the hypothesis. The Friedman test, a non-parametric statistical test, can help in identifying differences across multiple related groups. Chi-square analysis, on the other hand, tests for independence between categorical variables. These techniques provide deeper insights and help in uncovering relationships that might not be immediately apparent with simpler descriptive statistics.

Analysis and Results

Table 1: *Frequency and percentage summary on statement regarding the current level of e-governance in service delivery in the Ondo State Ministry of Education*

Items		Responses				Total	
		SA	A	D	SD	Agreed	Disagreed
E-governance has been successfully incorporated into the activities of the Ondo state ministry of Education	F	15	24	49	82	39	131
	%	8.8	14.1	28.8	48.2	22.9	77.1
The digital platforms for the ministry are simple to use and accessible to the public	F	8	25	65	72	33	137
	%	4.7	14.7	38.2	42.4	19.4	80.6
The ministry has a steady and dependable internet connection for using e-services	F	9	14	81	66	23	147
	%	5.3	8.3	47.6	38.8	13.5	86.5
The ministry provides enough training and education to its employees on how to use its e-governance systems	F	13	26	83	48	39	131
	%	7.7	15.3	48.8	28.2	22.9	77.1
The ministry's e-governance activities have suitable safeguards in place to protect data security and public value	F	29	45	55	41	74	96
	%	17.1	26.5	32.3	24.1	43.5	56.5
Averaged Total	**F**	**14**	**27**	**67**	**62**	**208**	**642**
	%	**8.2**	**15.9**	**39.4**	**36.5**	**24.5**	**75.5**

Source: *Field Survey, 2024*

The Ondo State Ministry of Education's E-governance adoption in service delivery was surveyed. 22.9% of respondents believed E-governance has been successfully integrated, while 77.1% disagreed. 19.4% found digital platforms easy to use, while 80.6% disagreed. Only 13.5% believed the ministry had reliable internet connections for e-services. 23% believed the ministry provided adequate training for employees, but 77% disagreed. 43.6% believed data security and public value were protected, but 56.4% disagreed. The average response (24.5% agreement and 75.5% disagreed) indicated a poor level of E-governance adoption in service delivery.

Table 2: *Friedman Test on statement regarding the challenges of E-governance in Ondo State Ministry of Education*

Item	Mean Score	Rank
The ministry's personnel lack the technological know-how necessary to develop and oversee e-governance	3.01	2nd
The ministry encounters major difficulties keeping data on its digital platforms secure and private	2.76	5th
The ministry lacks the necessary hardware and internet infrastructure to implement e-governance	3.46	1st
The general public is not aware of the ministry's e-governance activities	2.89	3rd

The deployment of e-governance has been hampered by employees and stakeholders' resistance to change			2.88	4th
Friedman Chi Square	X^2	37.311		
	Df	4		
	P	<.05		

Source: *Field Survey, 2024*

The test on the challenges to the Ministry's successful adoption of e-governance was presented in Table 2. The conducted Friedman test revealed that the reported mean ranking were valid to explain the preference with the identified challenges based on the perception of impact (X^2= 37.311, d.f= 4, $p < .05$). The adoption of e-governance in the Ministry of Education faces several challenges, including lack of necessary hardware and internet infrastructure, abrupt technological initiatives by ministry personnel, poor public awareness, resistance from employees and stakeholders to change, and potential difficulties in keeping data secure and private on digital platforms. The majority of respondents (79.4%) agree with these challenges, with 40% strongly agreeing and 39.4% agreeing. However, 14.1% disagree, and 6.5% strongly disagree. The majority of respondents (80.6%) agree that these challenges are significant and need to be addressed. Considering the variation observed in frequencies, it could be clarified that this result is valid for further summation. Conclusively, it is ascertained that as identified were the challenges to the Ministry's successful adoption of E-governance.

Table 3: *Friedman Test on statement regarding the strategies adopted to enhance E-governance in Ondo State Ministry of Education*

Item			**Mean Score**	**Rank**
Investing in employee training and development will greatly enhance e-governance implementation and administration			3.15	1st
Data on digital platforms would be more securely and privately protected with stronger cybersecurity measures			2.88	4th
Many of the problems with e-governance's deployment and upkeep might be resolved by increasing the funding allotted for it			3.12	2nd
Employing change management techniques would lessen employee and stakeholder opposition to e-governance			2.73	5th
Hiring specialized IT support personnel would rapidly and efficiently handle technological problems			3.12.	2nd
Friedman Chi Square	X^2	22.428		
	Df	4		
	P	<.05		

Source: *Field Survey, 2024*

The test on the strategies adopted to enhance e-governance in the Ministry of Education in Ondo State was presented in Table 4. The conducted Friedman test revealed that the reported mean ranking was valid to explain the preference with the identified adopted strategies based on the perception of relevance (X^2= 22.428, df= 4, $p < .05$). The most popular strategy adopted is investing in employee training and development, which is rated highest by 97.1%). Another strategy is addressing draining issues by increasing funding. The second strategy is hiring specialized IT support personnel to handle technological problems efficiently. The third strategy is enhancing cybersecurity measures to protect digital platforms. The least popular strategy is employing change management techniques to reduce opposition. Despite these suggestions, a majority of respondents strongly agree with these strategies, with a small percentage disagreeing. Sequel to the observed variation in frequencies, it could be clarified that this result is valid for further assertions. On a conclusive note, it is ascertained that as identified were the possible strategies to be adopted to enhance E-governance in the Ministry of Education in Ondo State.

Test of Hypothesis

There is no significant influence of E-governance utilization on implementation of efficient capacity-building programmes, cyber security and privacy, and funding of the ministry of education in Ondo State.

Table 4a: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.858[a]	.736	.731	3.71049

a. Predictors: (Constant), Funding, Cyber Security and Privacy, Capacity Building

The model summary provided in Table 4a includes several key statistics. The value of R=0.858indicates a strong positive correlation between the predictors (Funding, Cyber Security and Privacy, and Capacity Building) and the dependent variable (efficiency of e-governance implementation). This suggests that the predictors are strongly related to the outcome variable.

Table 4b: ANOVA[a]

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**p-value**
1	Regression	6356.346	3	2118.782	153.894	.000[b]
	Residual	2285.448	166	13.768		
	Total	8641.794	169			

a. Dependent Variable: E-governance Utilization

b. Predictors: (Constant), Funding, Cyber Security and Privacy, Capacity Building

The p-value for the F-statistic is .000, which is less than the conventional alpha level of 0.05. This indicates that the overall regression model is statistically significant. In other words, the predictors (Funding, Cyber Security and Privacy, and Capacity Building) together significantly contribute to explaining the variance in e-governance utilization. Although the overall model is significant, the statement in the problem suggests that there is no significant influence of e-governance utilization on certain aspects like capacity-building programmes, cyber security and privacy, and funding. This might imply that while the model as a whole is statistically significant, individual predictors might not have a statistically significant effect on e-governance utilization, or the relationships may be more complex than initially understood.

Table 4c: Coefficients

		Unstandardized Coefficients		**Standardized Coefficients**		
Model		**B**	**Std. Error**	**Beta**	**T**	**p-value**
1	(Constant)	.400	1.999		.200	.842
	Capacity Building	-.218	.192	-.095	-1.132	.259
	Cyber Security and Privacy	1.622	.155	.662	10.483	.000
	Funding	1.076	.139	.469	7.716	.000

a. Dependent Variable: E-governance Utilization

The predicted value of e-governance utilization when all predictors are zero. This constant term represents the baseline level of e-governance utilization in the absence of the predictors. Capacity Building (-0.218): The change in e-governance utilization for each one-unit increase in capacity building, holding other predictors constant. A negative coefficient suggests that increased capacity building is associated with a decrease in e-governance utilization, though this result is not statistically significant. Cyber Security and Privacy (1.622): The change in e-governance

utilization for each one-unit increase in cyber security and privacy measures, holding other predictors constant. Funding (1.076): The change in e-governance utilization for each one-unit increase in funding, holding other predictors constant. Capacity Building (0.259): The p-value is greater than 0.05, indicating that the effect of capacity building is not statistically significant. Cyber Security and Privacy (0.000): The p-value is less than 0.05, indicating that the effect of cyber security and privacy is statistically significant. Funding (0.000): The p-value is less than 0.05, indicating that the effect of funding is statistically significant.

Discussion and Conclusion

The Ondo State Ministry of Education has been found to have a poor level of E-governance adoption in service delivery, with 77% of respondents dissatisfied with its integration and 80.6% dissatisfied with its accessibility. Challenges include lack of necessary infrastructure, technological know-how, poor public awareness, resistance to change, and security issues. To improve E-governance, the highest rated strategy is employee training and development, followed by increased funding for initiatives. Other strategies include hiring specialized IT support personnel, change management techniques, and stronger cybersecurity measures. The study's findings suggest that the ministry should prioritize E-governance adoption, address its challenges, and invest in strategies to enhance its adoption.

Recommendations

Based on the above findings the following recommendations are made:

1. Every government department within the ministry needs to have an integrated, well-designed ICT system and also assign a unified department or unit in charge of overseeing electronic processes to the task of monitoring and supervising ICT-related infrastructures across all department within the Ministry.
2. The government should devise a way to supply a steady and completely efficient alternative energy source, such as contemporary solar energy, for computer use.
3. Sufficient funding should to be allocated for the acquisition of contemporary ICT devices as well as adequate funding for the development of human capacity is necessary with a focus on ICT-related knowledge. Also, the government should implement a system for automatically evaluating the work performance of its staff.

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