

E-GOVERNANCE APPLICATION AND EFFICIENT SERVICE DELIVERY IN THE NATIONAL HEALTH INSURANCE AUTHORITY IN EDO STATE

¹AIGBE, Endurance Nogiomwan & ²SALAMI, Clement Olushola

Department of Public Administration
Faculty of Social Sciences
University of Benin, Benin City
Endurance.aigbe@uniben.edu, clementolushola@gmail.com

ABSTRACT

In today's digital age where technology is revolutionizing every aspect of our lives, governments and public institutions are harnessing the transformative power of e-governance to deliver efficient services and foster inclusive development. This study examined the impact of e-governance applications on efficient service delivery in the National Health Insurance Authority (NHIA) in Edo State, Nigeria, specifically investigating their effects on enrollment processes, complaints handling process, and access to information, while also identifying the challenges that hinder its application. The study employed a survey design with a sample size of 215 purposively drawn from the population. Primary data was collected through questionnaire administered to NHIA enrollees and in-depth interviews with NHIA staff to gain insights into the research problem. The study utilized the Chi-square (χ^2) test, and Pearson's Contingency Coefficient (C) to analyze data, test hypotheses, and determine the direction of their relationship, respectively. Thus, findings indicated that e-governance application has significantly enhanced the efficiency of enrollment and complaint processes in NHIA while also outlining key obstacles mitigating the smooth application of e-governance to include technical issues, digital literacy gaps, internet connectivity problems, and cybersecurity concerns. Addressing these impediments, the study recommends improving on the extant e-governance/ICT infrastructure in the NHIA; providing systematic ICT training for NHIA staff, and establishing partnerships with relevant agencies, such as the Nigerian Communications Commission (NCC) and the National Information Technology Development Agency (NITDA), for ICT support.

Key Words: E-Governance; Service delivery; Transparency; Efficiency; Effectiveness.

INTRODUCTION

In today's modern world, efficient and quality service delivery has dominated the core priorities of governments across the globe thereby leading to immense institutional transformation to drive the process of wider reach. To this extent, governments, globally, have embarked on implementing innovative reforms in the public sector, redesigning structures, systems and processes to provide efficient service delivery to citizens in a manner that excludes administrative bottlenecks and bureaucratic red tape. Prior to the 21st century, governance in the third world countries, particularly the African continent, have been mitigated by significant challenges that bordered on: systemic inefficiencies, bureaucratic bottlenecks, and a lack of transparency, thereby hindering the delivery of efficient services to citizens. These debacles are further compounded by outdated practices, including manual processes, inadequate record-keeping and limited access to information. The end products have generated widespread dissatisfaction, mistrust, and disillusionment with government institutions (Asomba, et al, 2023; Olaopa, 2015). Nigeria is not exempted in this regard, as its public institutions are completely denuded by lack of accountability, transparency and responsiveness consequently contributing to the erosion of public trust in government services.

In response to the myriads of issues plaguing the speedy and efficient delivery of public services, the Nigerian government embarked on the digital drive by introducing e-governance initiatives in order to, not just deliver services efficiently, but to boost access for an expanded audience. Thus, e-governance has revolutionized government operations, enabling a transition from traditional bureaucratic systems to more responsive, transparent, citizen-centric, participatory and efficient service delivery models (Adesoji et. al., 2021). One of the areas that has witnessed the light in the transformative wave of digital application is the health sector through the digitization of the National Health Insurance Authority (NHIA)'s services that include patients' enrollment, complaint processing and customer service. Established in May 1999 under the National Health Insurance Scheme (NHIS) Act 35 of 1999, the agency's goal is to ensure Universal Healthcare Coverage (UHC) for all Nigerians (HMOs, 2023; Eze et al, 2024). The agency was renamed National Health Insurance Authority (NHIA) in May 2022, following administrative reforms and service expansion (Effah, 2023; Mustapha, 2024). With the core mandate of providing health insurance for a large number of enrolled beneficiaries, relying on analogue operations would undermine the agency's efficiency and jeopardise the hopes of its enrollees, particularly in health emergencies requiring urgent verification and funding (Kayode (2014).

Despite years of operation, the ability to attain its goal of UHC has remained elusive, as current statistics indicate that less than 10% (about 20 million) of Nigerians have been enrolled or covered by health insurance, leaving the vast majority exposed to high out-of-pocket healthcare cost (Eze et al, 2024). One of the rationales to have been identified to have contributed to this significant enrollment gap is the ineffective application of e-governance initiatives, which are intended to make the enrollment process seamless, swift, and transparent (Ohiri, 2025). This assertion is corroborated by Fenny et al (2021) who posits that e-governance holds enormous significance, particularly in its ability to enhance the ease, transparency, speed, and reliability of government business and service delivery. This inadequacy has necessitated this study in order to unravel the implications of e-governance adoption for service delivery by the NHIA in Nigeria with focus on Edo state. The study interrogates the following research questions: to what extent has e-governance application eased enrollment processes in NHIA in Edo State? To what extent has e-governance application impacted complaint processing in NHIA in Edo State? How has e-governance facilitated access to information in NHIS service delivery in Edo State? What are the challenges hindering the effective use of e-governance initiatives in NHIA in Edo State?

RESEARCH OBJECTIVES

The study aims to:

1. examine the extent to which e-governance application has eased enrollment processes in NHIA in Edo State;
2. examine the extent to which e-governance application has impacted complaint process in NHIA service delivery in Edo State;
3. investigate the extent to which e-governance application has facilitated access to information in NHIA service delivery in Edo State;
4. determine the challenges hindering the use of e-governance application in NHIA service delivery in Edo State.

Research Hypotheses

In order to establish a focused analytical realisation of the objectives of the study, the following hypotheses were formulated and tested.

- 1 H_0 : the application of e-governance has no significant effect on the enrollment processes in the NHIA in Edo State

H_1 : the application of e-governance has significant effect on the enrollment processes in the NHIA in Edo State;

- 2 H_0 : the application of e-governance has no significant impact on the complaint process in NHIA service delivery in Edo State

H_1 : the application of e-governance has significant impact on the complaint process in NHIA service delivery in Edo State; and

- 3 H₀: the application of e-governance has not significantly facilitated access to information in NHIA service delivery in Edo State

H₁: the application of e-governance has significantly facilitated access to information in NHIA service delivery in Edo State.

CONCEPTUAL DEFINITION

Concept of E-governance

The concept of e-governance has gained prominence since the commencement of the 21st century thereby prompting governments around the world to embrace digital governance in order to render a more efficient, transparent, and accountable services to the people. Thus, the term is not amenable to a singular definition due to the wild array of viewpoints and practices and the need to distinguish it from e-government. However, a summary of the various viewpoints reflects that e-governance is the delivery of government services through the Internet or other digital means. Nnamdi (2016) defines e-governance as the utilization of information and communication technology (ICT) to improve public service. For Estevez and Janowski (2013), it involves government organisations employing technology to transform their operations and interactions with citizens, thereby fostering a more impactful society. Information and communication technology (ICT) encompasses a wide range of methods for processing and transmitting information, including telegraphy, telecommunications, radio, television, computers, internet services, and wireless technologies. E-governance, which leverages ICT, involves the effective and efficient use of technology in managing the economic, political, administrative, and social aspects of public affairs, while actively engaging citizens in the policymaking process. By doing so, it aims to enhance transparency, accountability, and responsiveness to citizen needs (Obodo, and Anigbata, 2018).

Efficient Service Delivery

Efficient service delivery is centered on meeting the expectations of end-product users. It refers to the provision of high-quality services in a timely, cost-effective, and responsive manner (Gafar, 2017). Efficient service delivery involves streamlining processes, reducing bureaucracy, and leveraging technology to enhance service quality and accessibility (Dunleavy et al., 2006). According to El-Rufai (2006), efficient service delivery refers to the extent to which an organization or its employees perform effectively, produce quality output, and utilizes resources optimally to achieve organizational goal within specified time, and resources constraints, ultimately meeting public expectation. The importance of efficient service delivery cannot be overstated. In both public and private sectors, it enhances customer satisfaction, builds trust, and promotes economic growth. In the public sector, efficient service delivery is particularly crucial, as it improves citizens' quality of life, increases transparency, and reduces corruption (World Bank, 2004).

METHODOLOGY

The study adopted the cross-sectional/survey research design that involved the use of questionnaire to source primary data from the various respondents from a sampled population. As such, the research employs the quantitative data analysis technique. The population of the study comprises all National Health Insurance Authority (NHIA) staff and enrollees in Edo State functional branches. This population is spread across the three senatorial districts of the state which include: Edo South, Edo North and Edo Central senatorial districts. Due to the significantly high number of accredited NHIA centers in Edo South Senatorial District (129 out of 178), two hospitals were selected for adequate representation while one hospital (each) were taken from the other two senatorial districts. The stratified method of sampling was adopted to select the different hospitals from a litany of accredited centres spread across the state. The population of the study is represented in the table below:

Table 1: Showing the Population Categories, Designations and Sizes

Categories	Designation	Sizes
NHIA	NHIA staff strength	30
Edo South	University of Benin Teaching Hospital (UBTH)	17,731
	St. Philomena Catholic Hospital	11,749
Edo Central	Irua Specialist Hospital	5,767
Edo North	General Hospital Igarra	2,413
TOTAL		37,690

Source: Department of ICT, NHIA, Edo State, 2025

Table 1 above shows the various accredited centers and their enrollees strength based on the population. In Edo South Senatorial District, the University of Benin Teaching Hospital has 17,731 as their number of enrollees while St. Philomena Catholic Hospital has 11,749 as their number of enrollees. In Edo Central, Irua Specialist hospital has 5,767 as their number of enrollees while Igarra General Hospital with 2,413 as their number of enrollees was taken from Edo North Senatorial District. The NHIA staff strength is made up of 30 staff thereby making the population of the study 37,690 (thirty-seven thousand six hundred and ninety). The choice of these hospitals is hinged on their centrality and accessibility in their various locations and adoption of the NHIA policy framework.

The sample size of 245 (two hundred and forty-five) made up of 215 (two hundred and fifteen) enrollees from the selected hospitals and 30 (thirty) NHIA staff, were purposively selected and the respondents were distributed across the selected centres on a simple percentage basis. Thus, for UBTH, 101 (one hundred and one respondents) making 47% of the enrollees, were selected while 67 (sixty-seven) respondents, making 31.2% of the enrollees were selected from St. Philomena. Also, 33 (thirty-three) respondents, making about 15.3% of the enrollees were selected from Irua specialist hospital while 14 (fourteen) respondents, making 6.4% of the sampled enrollees were drawn from Igarra General Hospital. The staff of NHIA were contacted directly for questionnaire administration while the enrollees were contacted via email or phone numbers provided through the snow-ball technique.

THEORETICAL FRAMEWORK

This research is anchored on the Technology Acceptance Model (TAM) as its analytical framework. The Technology Acceptance Model (TAM), introduced by Fred Davis in 1989, builds upon Ajzen and Fishbein's (1980) Theory of Reasoned Action, focusing on how acceptable an information system is. TAM suggests that several factors influence a user's decision to accept a new technology when they are introduced to. According to Davis, Bagozzi & Warshaw (1989), these factors include the Perceived Usefulness (PU), which refers to the extent to which a user believes that utilizing the technology will improve their performance or efficiency at work. The second factor is the perceived ease of use (PEOU), which refers to the extent to which a user perceives the technology as low-effort and requiring minimal cognitive and physical effort. This suggests that regardless of the creator's belief in the technology's usefulness and ease of use, it will not be accepted by users unless they hold the same opinions (Davis, 1989). Ducey (2013) notes that the model offers a clearer understanding of how the two elements of the Technology Acceptance Model (TAM) – perceived usefulness and perceived ease of use – are crucial for determining technology acceptance and influencing user behaviour. Importantly, the primary aim of the Technology Acceptance Model (TAM) is to lay the groundwork for examining the impact of external variables on attitudes, beliefs, and intentions within an organization.

TAM has effectively explained individual, organizational, and governmental perceptions and behaviors regarding technology adoption in Nigeria's public service delivery, particularly within the National Health

Insurance Authority (NHIA) in Edo State. TAM highlights the significance of perceived usefulness and perceived ease of use in determining the adoption and use of e-governance applications. Furthermore, the model helps identify specific aspects of e-governance applications that can enhance service delivery, such as streamlined processes, data processing, information conveyance and retrieval, correspondence, decision-making processes, and enhanced customer experience. By applying TAM, this study provides a theoretical foundation for understanding the relationship between e-governance application and efficient service delivery in NHIA. The model allows for an examination of the cognitive and affective factors influencing the adoption and use of e-governance applications, informing strategies to improve service delivery and enhance NHIA's overall efficiency. The effectiveness of technology in improving work efficiency and reducing workload is well-documented. As Moon (2012) observes, introducing technology to facilitate service delivery can significantly improve work efficiency, reduce the workload of workers, and make the workplace more engaging. In the context of NHIA, the application of e-governance can leverage these benefits to enhance service delivery and improve overall performance.

RESULTS

Table 2: Showing the analysis of questionnaire

Questionnaire Analysis	Number	Percentage (%)
Distributed	210	100
Retrieved	200	95.24
Unretrieved	10	4.76

Source: Field Survey, 2025

The table above indicates that out of the 210 questionnaires distributed, 200 representing 95.24% were retrieved while 10 (4.76%) were unable to be retrieved as they were either not returned, filled inaccurately or damaged.

Table 3: Contingency Table for hypothesis one

Responses	Items				Total
	(1) Simplification of enrollment processes	(2) Processing time reduction	(3) Data accuracy	(4) Real-time updates	
Strongly Agreed	96 ^a	84 ^b	74 ^c	70 ^d	324
Agreed	72 ^e	78 ^f	90 ^g	100 ^h	340
Disagreed	18 ⁱ	26 ^j	30 ^k	24 ^l	98
Strongly Disagreed	14 ^m	12 ⁿ	6 ^o	6 ^p	38
Total	200	200	200	200	800

Source: Field Survey, 2025

Computation of expected frequency

$$Fe = \frac{TC \times TR}{Grand\ total}$$

Where; TC = Total Colum; TR= Total Row

$$Strongly\ Agreed = \frac{324 \times 200}{800} = \frac{64,800}{800} = 81$$

$$\begin{aligned}\text{Agreed} &= \frac{340 \times 200}{800} = \frac{68,000}{800} = 85 \\ \text{Disagreed} &= \frac{98 \times 200}{800} = \frac{19,600}{800} = 24.5 \\ \text{Strongly disagreed} &= \frac{38 \times 200}{800} = \frac{7,600}{800} = 9.5\end{aligned}$$

Table 3.1: Showing Chi Square Table of Analysis; $\chi^2 = \sum \frac{(fo-fe)^2}{fo}$

Cell	Fo	Fe	fo-fe	(fo-fe) ²	(fo-fe) ² /fe
a	96	81	15	225	2.78
b	84	81	3	9	0.11
c	74	81	-7	49	0.61
d	70	81	-11	121	1.49
e	72	85	-13	169	1.99
f	78	85	-7	49	0.58
g	90	85	5	25	0.29
h	100	85	15	225	2.65
i	18	24.5	-6.5	42.25	1.72
j	26	24.5	1.5	2.25	0.09
k	30	24.5	5.5	30.25	1.23
l	24	24.5	-0.5	0.25	0.01
m	14	9.5	3.5	20.25	2.13
n	12	9.5	2.5	6.25	0.66
o	6	9.5	-3.5	12.25	1.29
p	6	9.5	-3.5	12.25	1.29
$\sum \frac{(fo-fe)^2}{fe} = 18.92$					

Source: Field Survey, 2025

Calculated $\chi^2 = 18.92$

Degree of freedom (df) =
 $(r-1)(c-1)$
 $= (4-1)(4-1)$
 $= (3)(3)$
 $= 9$

Critical table value = 14.68

That is, the χ^2 table value at df = 9, with α 0.05 level of significance is 14.68.

Pearson Contingency Coefficient (C) is further utilized to assess the strength and direction of the relationship between variables.

$$C = \sqrt{\frac{\chi^2}{n - \chi^2}}$$

Where $\chi^2 = 18.92$, $n = 200$

$$C = \sqrt{\frac{18.92}{200 - 18.92}}$$

$$= \sqrt{\frac{18.92}{181.08}}$$

$$= \sqrt{0.11}$$

$$= 0.33$$

Interpretation

With a chi-square (χ^2) of 18.92, a sample size of 200, and a Pearson Contingency Coefficient of 0.33, there is a statistically significant, moderate association between the application of e-governance and the enrollment process in the NHIA in Edo State.

Decision

Since the chi-square (χ^2) calculated value of 18.92 is greater than the table value of 14.68, we therefore reject the null hypothesis and accept the alternate hypothesis, which states that the application of e-governance has a significant effect on the enrollment processes in the NHIA in Edo State.

Table 4: Contingency Table for hypothesis two

Responses	Items				Total
	(5) Effective complaint handling process	(6) Faster resolve of complaint	(7) Transparency improvement	(8) Adequate feedback	
Strongly Agreed	66 _a	52 _b	76 _c	60 _d	254
Agreed	82 _e	106 _f	76 _g	194 _h	385
Disagreed	32 _i	30 _j	36 _k	34 _l	132
Strongly Disagreed	20 _m	12 _n	12 _o	12 _p	56
Total	200	200	200	200	800

Source: Field Survey, 2025

Computation of expected frequency

$$Fe = \frac{TC \times TR}{Grand\ total}$$

Where; TC = Total Colum; TR = Total Row

$$\text{Strongly Agreed} = \frac{254 \times 200}{800} = \frac{50,800}{800} = 63.5$$

$$\text{Agreed} = \frac{358 \times 200}{800} = \frac{71,600}{800} = 89.5$$

$$\text{Disagreed} = \frac{132 \times 200}{800} = \frac{26,400}{800} = 33$$

$$\text{Strongly disagreed} = \frac{56 \times 200}{800} = \frac{11,200}{800} = 14$$

Table 4.1: Chi Square Table of Analysis; $X^2 = \sum \frac{(fo - fe)^2}{fe}$

Cell	Fo	Fe	fo-fe	(fo-fe) ²	(fo-fe) ² /fe
------	----	----	-------	----------------------	--------------------------

a	66	63.5	2.5	6.25	2.08
b	52	63.5	-11.5	132.25	2.46
c	76	63.5	12.5	156.25	0.19
d	60	63.5	-3.5	12.25	0.62
e	82	89.5	-7.5	56.25	0.62
f	106	89.5	16.5	272.25	3.04
g	76	89.5	-13.5	182.25	2.04
h	94	89.5	4.5	20.25	0.25
i	32	33	-1	1	0.03
j	30	33	-3	9	0.27
k	36	33	3	9	0.27
l	34	33	1	1	0.03
m	20	14	6	36	2.57
n	12	14	-2	4	0.29
o	12	14	-2	4	0.29
p	12	14	-2	4	0.29
$\sum \frac{(fo-fe)^2}{fe} = 15.34$					

Source: Field Survey, 2025

Calculated $\chi^2 = 15.34$

Degree of freedom (df) = $(r-1)(c-1)$
 $= (4-1)(4-1)$
 $= (3)(3)$
 $= 9$

Critical table value = 14.68

That is, the χ^2 table value at df = 9, with α 0.05 level of significance is 14.68.

Computation of Pearson Contingency Coefficient (C) to determine the strength and direction of the association.

$$C = \sqrt{\frac{\chi^2}{n - \chi^2}}$$

Where $\chi^2 = 15.34$, $n = 200$

$$C = \sqrt{\frac{15.34}{200 - 15.34}}$$

$$= \sqrt{\frac{15.34}{184.66}}$$

$$= \sqrt{0.08}$$

$$= 0.28$$

Interpretation

With a chi-square (χ^2) of 14.80, a sample size of 200, and a Pearson Contingency Coefficient of 0.28, there is a statistically significant, moderate association between the application of e-governance and the enrollment process in the NHIA in Edo State.

Decision

Since the chi-square (χ^2) calculated value of 14.80 is greater than the table value of 14.68, we therefore reject the null hypothesis and accept the alternate hypothesis, which states that the application of e-governance has a

significant impact on the complaint process in NHIA service delivery in Edo State.

Table 5: Contingency Table for hypothesis three

Responses	Items				Total
	(9) Easy access to information	(10) Status tracking	(11) Adequate information	(12) User-friendly	
Strongly Agreed	72 _a	70 _b	66 _c	68 _d	276
Agreed	90 _e	86 _f	96 _g	96 _h	368
Disagreed	28 _i	30 _g	26 _k	24 _l	108
Strongly Disagreed	10 _m	14 _n	12 _o	12 _p	48
Total	200	200	200	200	800

Source: Field Survey, 2025

Calculation of expected frequency

$$Fe = \frac{TC \times TR}{Grand\ total}$$

Where; TC = Total Colum; TR= Total Row

$$\text{Strongly agreed} = \frac{246 \times 200}{800} = \frac{55,200}{800} = 69$$

$$\text{Agreed} = \frac{368 \times 200}{800} = \frac{73,600}{800} = 92$$

$$\text{Disagreed} = \frac{108 \times 200}{800} = \frac{21,600}{800} = 27$$

$$\text{Strongly disagreed} = \frac{48 \times 200}{800} = \frac{9,600}{800} = 12$$

Table 5.1: Chi Square Table of Analysis; $X^2 = \frac{(fo - fe)^2}{fe}$

Cell	Fo	Fe	fo-fe	(fo-fe) ²	(fo-fe) ² /fe
a	72	69	3	9	0.13
b	70	69	1	1	0.02
c	66	69	-3	9	0.13
d	68	69	-1	1	0.02
e	90	92	-2	4	0.04
f	86	92	-6	36	0.40
g	96	92	4	16	0.17
h	96	92	4	16	0.17
i	28	27	1	1	0.04
j	30	27	3	9	0.33
k	26	27	-1	1	0.04
l	24	27	-3	9	0.33
m	10	12	-2	4	0.33
n	14	12	2	4	0.33
o	12	12	0	0	0.00

p	12	12	0	0	0.00
$\sum \frac{(fo-fe)^2}{fe} = 2.48$					

Source: Field Survey, 2025.

Calculated $\chi^2 = 2.48$

Degree of freedom (df) =
 $(r-1)(c-1)$
 $= (4-1)(4-1)$
 $= (3)(3)$
 $= 9$

Critical table value = 14.68

That is, the χ^2 table value at df = 9, with α 0.05 level of significance is 14.68.

Computation of Pearson Contingency Coefficient (C) to determine the strength and direction of the association.

$$C = \sqrt{\frac{\chi^2}{n - \chi^2}}$$

Where $\chi^2 = 2.48$, $n = 200$

$$\begin{aligned} C &= \sqrt{\frac{2.48}{200 - 2.48}} \\ &= \sqrt{\frac{2.48}{197.5}} \\ &= \sqrt{0.01} \\ &= 0.1 \end{aligned}$$

Interpretation

There is a weak relationship between e-governance application and access to information in NHIA service delivery in Edo State, as evidenced by a Pearson Contingency Coefficient of 0.1. The chi-square (χ^2) test result ($\chi^2 = 2.48$, $n = 200$) indicates a non-significant statistical effect.

Decision

Since the chi-square (χ^2) calculated value of 2.48 is less than the table value of 14.68, we therefore accept the null hypothesis, which states that the application of e-governance has not significantly facilitated access to information in NHIA service delivery in Edo State.

DISCUSSIONS

Every government in the world today is saddled with the responsibility of delivering quality services to its citizens, particularly in the provision of health insurance services. In view of this, e-governance initiatives (ICT) have been one of the major tools for governments in fulfilling their responsibilities to citizens in a timely and seamless manner. The study examined the efficacy of e-governance applications in enhancing efficient service delivery within the National Health Insurance Authority (NHIA) in Edo State, with a specific focus on the impact of digital tools on enrollment processes, complaint handling, information accessibility and the challenges associated with e-governance implementation. The findings revealed that the application of e-governance has significantly improved enrollment processes in the NHIA, leading to streamlined operations, reduced administrative burdens and enhanced accessibility for enrollees. Corroborating these findings, one of the

interviewees, a staff of the NHIA, asserted that:

“In times past, enrollment was done heavily manually, where prospective enrollees came to the office to manually fill out forms. Collating and processing these forms was a herculean task, as sometimes we got fatigued, and sometimes some were misplaced or left untreated. With e-governance enablement, we simply direct and receive enrollees’ forms electronically, as they can easily log into our website to fill out their forms and submit with other necessary requirements. With the advancement of technology, their information is easily processed and they are enrolled within a record time, while our workload is also reduced” (IDI/Female/Department of Operations/NHIA, 2025).

Corroborating this assertion, another interviewee claimed:

Enrollment is one of the first stages of bringing prospective enrollees to register with NHIA. Relying on a manual registering process, we were confronted with challenges like them being unable to correctly fill out forms, having crowds in our facility, misspelling of names and other bio-data, which sometimes occurred from our end as a result of pressure perhaps. These days, except for only enrollees who are not digitally inclined or unwilling to utilize our online enrollment platforms, these issues are gradually becoming things of the past. Enrollees now sit in the comfort of their homes and get registered into the system by merely logging into our portal and carefully following the process to get registered” (IDI/Male/Department of ICT/NHIA, 2025).

From the foregoing, it is obvious that the use of Information and Communications Technology (ICT) has impacted the enrollment process in NHIA in Edo State. Also, it has reduced the workload of NHIA staff and time wastage of the enrollees. In the view of Nnamdi (2016), ICT has provided a means for faster and better communication, efficient storage, retrieval and processing of data, as well as the exchange of information for its users. This confirms Fenny’s (2024) findings that the effective application of e-governance has the capability of making citizens’ engagement with their public institutions seamless, swift and transparent; such initiatives can lead to improved citizen satisfaction, increased trust in government operations and more efficient delivery of public services.

Hypothesis two indicates that there is a significant relationship between e-governance application and complaints processes in the National Health Insurance Authority (NHIA). According to Asaju and Clement (2024), with the help of Information and Communications Technology (ICT), the world has become a global village where interaction, exchange of information and complaints are easily facilitated and addressed. In an in-depth interview with staff of the NHIA regarding how complaints are handled digitally, the interviewee explained thus:

“Being a service-rendering organization, we are not unaware that complaints will arise from enrollees, HMOs and even our accredited hospitals. For instance, in a situation where enrollees cannot access their unique code or having issues with out-of-pocket payments at their Healthcare Facility (HCF) for services covered by insurance, such issues are timely addressed once lodged in. So, our complaints mechanism is very effective and accessible at every time of the day. In sum, our digital platform offers a complaint mechanism where complaints are logged and responded to in record time” (IDI/Male/Department of HR/NHIA, 2025).

Kayode and Ajadi (2016:59) asserts that “quite a number of government information and services are now available online and provided electronically”, implying that with the help of ICT, government information is

now online for easy access and retrieval. This assertion was further strengthened by Fatile (2012) when he remarked that ICT has enabled the availability of information as citizens can sit in the comfort of their home and access information in record time. Contrarily, hypothesis three revealed that there is no significant relationship between e-governance application and access to information in the NHIA, as the respondents indicated that the application of ICT has not significantly aided getting or retrieving information from the NHIA websites. In an effort to clarify this discrepancy, an interviewee, an NHIA staff member, explained that:

“We quite understand the frustration of enrollees and citizens due to their inability to access information on our website. However, it must be noted that we deal with people’s bio-data and they are quite sensitive to be put on our website for access by unauthorized persons. Also, there are some administrative yet classified pieces of information that cannot be uploaded on our portal but are available if applied for and duly cleared and authorized to access them” (IDI/Male/Department of HR/NHIA, 2025).

The foregoing suggests that despite the efficacy of ICT, inability to access information could be due to the sensitivity or classified nature of the information. Furthermore, while assessing the challenges hindering the application of e-governance in NHIA, it was observed that technical issues such as system outages and software bugs or glitches; lack of digital literacy; internet connectivity issues; and cybersecurity concerns were some of the challenges of e-governance application in NHIA service delivery in Edo State. The study revealed that these challenges have become an impediment to quality service delivery. Admitting to and expressing concern about the issue of internet connectivity (network issue), an interviewee who is also a NHIA staff explained that:

“I sometimes experience the issue of internet connectivity. However, this problem is linked to Internet providers. When there is a network outage, we often become frustrated, as not much work can be done until the network is restored. We complain about this often to the authority and we are optimistic that there are efforts underway to rectify these issues so we can be more efficient and effective in our operations” (IDI/Female/Department of Operations/NHIA, 2025).

Given the plethora of challenges that frequently confront and impede the implementation of e-governance in public institutions, it is evident that a significant digital divide and literacy rate disparity exist. Specifically, not all citizens possess adequate access to the internet or the requisite digital literacy to effectively navigate online platforms. This disparity precipitates a notable gap between those who can avail themselves of digital services and those who are marginalized, particularly in rural areas where internet penetration and digital literacy are often limited. This phenomenon disproportionately affects rural dwellers, as well as aged and illiterate individuals, thereby exacerbating existing socio-digital inequalities.

CONCLUSION

The adoption and consequent application of e-governance in public service rendition underscores its potential to transform public administration and elevate service delivery efficiency. It is in this light that the study examined the e-governance application and efficient service delivery in the National Health Insurance Authority (NHIA) in Edo State with the intention to examining the extent to which it has eased enrollment processes into the scheme, impacted complaint processing, and unraveling the challenges hindering it is plagued with. Findings from the study revealed that the application of e-governance has significantly improved enrollment processes in the NHIA, leading to streamlined operations, reduced administrative burdens, and enhanced accessibility for enrollees. Also, the study revealed that e-governance application has enhanced complaints processing in the National Health Insurance Authority (NHIA), thereby making complaints timely reported and addressed. However, it was noted that the sensitivity and classified nature of certain information are often the reasons they are not put online for easy accessibility and retrieval. This has posed some key challenges that have impeded the smooth utilisation of digital means beyond technical issues such as system outages and software bugs or glitches, lack of digital literacy, internet connectivity issues, and cyber security as

revealed by the study.

The study therefore concludes that e-governance has improved the efficiency of NHIA service delivery and citizen engagement in Edo State. Indeed, extant literature is replete with the great opportunities of ICTs as an efficient and effective means of public service delivery. E-governance innovation and revolution have undoubtedly brought considerable potential for the enhancement of public service delivery, citizens' interaction and engagement with government, institutions and businesses, thereby making the world a global village. These potentials have, without mincing words, enhanced efficient and quality service delivery, citizens' participation and engagement, equity, transparency, accountability, responsiveness and effectiveness in manifold transactions that link service providers and service recipients.

RECOMMENDATIONS

The key challenges outlined by the study can be ameliorated through the following recommendations:

The performance of e-governance in the NHIA should be accorded paramount priority to consolidate and enhance the current operational status of the Authority. Consequently, regular and rigorous assessments should be conducted by the government and ICT experts to ensure the maintenance and sustainability of the organization's ICT infrastructure.

Investment in ICT facilities should be strategically encouraged by the government and relevant authorities to augment the NHIA's e-governance efficacy;

Pertaining to literacy issues that lead to the marginalization of individuals in terms of their comprehension of ICT systems, the NHIA should proactively and aggressively undertake public sensitization and enlightenment initiatives targeting illiterate citizens to mitigate the digital literacy gap. Leveraging orientation agencies such as the National Orientation Agency (NOA), complemented by television and radio jingles, could prove instrumental;

Systematic and recurrent training and retraining of NHIA staff by ICT experts should be considered to ensure staff remain abreast of emerging trends and innovations in e-governance, thereby enhancing professionalism and service delivery efficacy; and

The management of NHIA should establish collaborative partnerships with pertinent agencies like the Nigerian Communications Commission (NCC) and the National Information Technology Development Agency (NITDA) for requisite information technology support to digital awareness thereby improving on the current enrolment status.

REFERENCES

- Adesoji, K. A., Bankole, F. A. and Adebayo, J. A. (2021). *The Impact and Challenges of Information and Communication Technology on Health Care Delivery in Nigeria*. <https://www.journals.ezenwaohaetorc.org/index.php/MUNFOLLJ/article/viewFile/1522/1566>.
- Asaju, K. & Clement, Y.G., (2024). *The dynamics of the Nigerian public service and development administration in Nigeria: Public service as a strategy for national development*. Integrity Research Journals of Business and Economic Management, 16-24.
- Asomba, D. O., Egwuagu, I U. and Uloma, B. (2023). E-governance and Service Delivery in Nigeria Public Sector: An Overview. Journal of Policy and Development Studies (JPDS) 13(4), Pp. 21 – 33
- Davis, F. D., Bagozzi, R. P., and Warshaw, P. R. (1989). *User Acceptance of Computer technology: A Comparison of two Theoretical Models*. Journal of Management Science, 35(8), 982-1003
- Ducey, A.J. (2013). *Predicating tablet computer user: an extended technology acceptance model*. Journal of Internet and Information systems, 1(1), 1-10.
- Dunleavy, P., Margetts, H., Bastow, S., and Tinkler, J. (2006). *New public management is dead: Long live digital-era governance*. Journal of Public Administration Research and Theory, 16(3), 467-494.
- Effah, S., (2023). *Change of name from NHIS strengthens us—NHIA Cross River Coordinator*. Tribune, October, 2023. <https://tribuneonline.ng.com/change-of-name-from-nhis-strengthens-us-nhia-cross-river-coordinator/> (Accessed 8th May, 2025).
- El-Rufai, N., (2006). *Interactive session on economic outlook for Nigeria*, (Rush transcript; Federal News Service, INC), www.cfr.org/Publication/9227
- Estevez, E. & Janowski, T. (2013). *Electronic Governance for Sustainable Development: Conceptual Framework and State of research*. Government Information Quarterly, 30, S94-S109.
- Eze, O.I., Iseolorunkanmi, A., and Adeloye, D., (2024). *The National Health Insurance Scheme (NHIS) in Nigeria: Current Issues and Implementation Challenges*. Journal of Global Health Economics and Policy, Vol. 4(1), 1-5
- Fatile J.O. (2012). *Electronic governance: Myth and or opportunity for Nigerian public administration*. International Journal of Academic Research in business and Social Sciences. 2(9) 122.
- Fenny A.P., Yates R., and Thompson R., (2021). *Strategies for financing social health insurance schemes for providing universal health care: a comparative analysis of five countries*. Global Health Action. 14(1):1868054.
- Fishbein, M., and Ajzen, I., (1975). *Belief, attitude, intention and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.
- Gafar, B. B. (2017). *The travail of service delivery and developmental failure in post-independence Nigeria* Journal of Public Administration and Policy Research, Vol. 9(3), pp. 26-33.
- Health Maintenance Organizations, (2023). *History of Health Insurance in Nigeria*. <https://www.researchgate.net/deref/https%3A%2F%2Fwww.ehealthinsurance.com.ng%2Fhistory-of-health-insurance-in-nigeria%2F%23%3A%7E%3Atext%3DIn%25201962%252C%2520the%2520first%2520attempt%2520to%2520build%2520a%2CMedical%2520Association%2520when%2520the%2520idea%2520was%2520brought%2520forward> (Accessed 8th May, 2025).
- Kayode O.O., Taiwo A.O. and Abidemi, O. (2014). *Users' Satisfaction with Services Provided Under National Health Insurance Scheme in South Western Nigeria*. International Journal of Tropical Disease and Health. Vol 4(5) 595-607.
- Kayode, A.A. and Ajadi, I.A., (2016). *E-governance in Nigeria: Progress and Prospect*. Ilorin Journal of Administration and Development (IJAD). 2(1)60-64.
- Moon, M. (2002). *The evolution of e-government among municipalities: Rhetoric or reality*. Public Administration Review, 62(4), 424-433.
- Mustapha, A.I., (2024). *Introduction to Public Policy and Analysis*. Amfitop Books, Lagos.
- Nnamdi, H.S., (2016). *E-governance and e-government: Trends, Progress and Challenges*. Rally Height Publisher. Benin City.

- Obodo, N. A. and Anigbata, D. O. (2018). *Challenges of Implementing Electronic Governance in Public Sector Organizations in Nigeria*. International Journal of Applied Economics, Finance and Accounting. 2(1), Pp 30 – 35.
- Ogori, K. (2025). “Only 10% of Nigerians covered by health insurance—NHIA boss”; Business Day (online) Newspaper, (September 3, 2025). Accessed September 4, 2025.
- Olaopa, T. (2015). *Public sector reform and service delivery in Nigeria: Challenges and prospects*. Journal of Public Administration and Policy Research, 7(1), 1-11.
- World Bank. (2004). *World Development Report 2004: Making services work for poor people*.