

**E-ADMINISTRATION AND COMMUNICATION HEALTH OF PUBLIC TERTIARY
INSTITUTIONS IN PORT HARCOURT**

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ABSTRACT

The study examined the relationship between e-administration and communication health of public tertiary institutions in Port Harcourt. The aim was to examine the relationship between dimensions of e-administration such as e-documentation, e-managerial system etc and measures of communication health like information circulation administrative coordination and information clarity in public tertiary institutions in Port Harcourt. It adopted the Cross-sectional explanatory Survey Research Design with a population of 5 public tertiary institutions. It was a census study. In terms of respondents, administrative heads such as deans, Heads of department etc responded unhalf of their institution. Questionnaire was used as instrument for the study. This instrument was validated and tested for reliability using Cronbach Alph via SPSS. Upon administration, collection and analysis of data obtained, the study found amongst others that there is a moderating effect of power supply and that there is a relationship between e-administration and communication health of tertiary institutions in Port Harcourt Rivers State. It was therefore, recommended that the management should provide electronic result management system that will match the unique needs of the institution and training should be provided to enable all teaching staff use the platform independently.

Background to the Study

Communication is of great essence as far as the administrative system of tertiary institutions is concerned. It takes effective organizational communication for the various units and departments in public tertiary institutions to be properly coordinated for the achievement of institutional goals. Without a healthy organizational communication process, there would be no proper linkage among the internal stakeholders of tertiary institutions such as management, administrators, students, teaching and non-teaching staff (Chux-Nyeche & Onu, 2020). Communication health refers to the efficient and effective dissemination and handling of administrative information across various units and staff of an organization to the point that everyone is adequately informed and abreast with the work system. Organizational communication efforts in public tertiary institutions can be said to be healthy when there is quick access to accurate and comprehensible administrative information, proper coordination of human and material resources as well as functional feedback mechanism to ensure that administrative policies, plans and programmes are properly understood (Otamiri & Odu, 2021; Odu & Opara, 2021; Otamiri & Nmehielle, 2020). This work therefore, measures communication health in terms of information circulation, administrative coordination, and information clarity.

Administrative coordination refers to the process of diligently organizing and channeling the human and material resources across units of an organization towards efficient and effective operations. It has to do with effective decision making, organized work system and smooth workflow. A well-coordinated administrative system supports smooth workflow because staff are well informed about what they are supposed to do and documents readily available. However, the administrative system of a poorly coordinated tertiary institution is often characterized by sluggish administrative work process, disorganized work system and slow decision-making process (Ali &

Chang, 2015). Perhaps, this is the situation in some of the public tertiary institutions in Rivers State.

Another facet of communication health is information clarity. The very essence of organizational communication is to help members of the organization have a clear and mutual understanding of administrative decisions, programmes, plans and trends in the workplace. Information clarity is the extent to which information contents generated and shared in an administrative system contains all necessary details and are free from errors. Information accuracy implies that any piece of information shared is devoid of misleading errors. This implies that both management and staff will have accurate understanding of the workings of the organization. With the level of digital breakthrough today which has ushered in the proliferation of virtual technology, one would expect tertiary institutions as centers of learning and research, to do much better in the area of organizational communication. However, it appears that the adoption of e-administration is yet to gain adequate prominence in the operations of some of the public tertiary institutions in Nigeria generally and Rivers State in particular (Odu, 2021).

While the apparent failure in organizational communication could be attributed to numerous factors, one of the major factors that might most likely interact with how an organization communicates is the kind of technology used in running its administrative system. Administration is the process of systematically arranging and coordinating the human and material resources available in any organization for the main purpose of achieving stipulated goals of that organization (Otamiri & Odu, 2021). A successful administrative system ensures that tasks and workload are strategically allocated and individual tasks accomplished to the point that institutional targets are achieved through effective communication (Flynn *et al.*, 2017). With the present advancements in digital revolution, most tertiary institutions in Nigeria and indeed Rivers State are transiting from traditional administration to e-administration. Traditional administration is characterized by physical operations of paper filing, face-to-face meeting, and physical meetings while, e-administration is characterized by automation and virtualization of office functions in the form of e-documentation, online communication platforms, online transactions, biometric system, online meeting practices, etc. (Chux-Nyeche, 2021; Otamiri, 2021). The term e-administration encapsulates the entire practice of ensuring that administrative functions can be done beyond the physical office environment through the help of web resources accessible on smart devices. The administrative offices of most tertiary institutions in Rivers State today are equipped with information and communication technologies. However, the researcher's experience suggests that in spite of the proliferation of computers and laptops across administrative offices, most administrative functions are still done manually. At best, files are stored in personal storage devices which make it impossible for administrative files to be accessed virtually. This work dimensionalizes e-administration in terms of e-documentation, e-managerial system, and e-communication system.

The adoption of e-documentation involves the practice of deploying and applying online tools like virtual libraries zoom communication application and social media platforms like WhatsApp Instant Messenger for instructional delivery, academic presentations, class attendance and the entire process of accessing educational materials beyond the physical premises of the school. With e-documentation, lecturers and students do not necessarily need to meet in the traditional lecture hall for teaching and learning to take place. Lecturers or educational facilitators and students use online platforms to host and join in academic sessions (Saman & Zarandioon, 2012).

On the other hand, e-documentation refers to the digital practice of managing administrative records in secured online platforms and networks which makes it possible for them to access their office files securely on any device, anytime and anywhere in the world provided there is internet connection and valid password (Klein & Saunder, 2011; Geis & Cote, 2012; John & Peterson, 2019). There are many cloud storage systems but, the most popular ones are online database management system, Google Drive and device-based storage facilities like laptops, desktops, flash drives, external hard disks, memory cards, etc. Admittedly, most of the tertiary institutions have

database management system where student records, transactions and admission processes are electronically managed. However, it appears most of their administrative offices store their files on local storage devices and computer system in addition to manual documentation.

Next to e-documentation system is e-managerial system. E-management system refers to online software and platforms that assist in the seamless management of administrative data, online meetings, and carrying out transactions beyond the physical premises of the institution. It is a combination of electronic result management system (e.g., RMS), online meeting technologies, and e-payment platforms of a tertiary institution. E-managerial system ensures that students can make payments to the school and get their receipts online, hold virtual meeting via the official school website or dedicated zoom platform. It is also concerned with online result computation which enables departments and units to electronically allocate courses, individual lecturers upload their results online, and students see their results on their portal under the e-supervision of the Result Verification Committee.

However, there is a problem of sustainability due to an environmental factor like power supply. Power supply is a significant environment challenge that influences the level of digital work practices in tertiary institutions. Considering the epileptic nature of power supply in the work environment, many schools try to embrace the use of solar power and generating sets with some level of dependence on the public power supply. It is therefore, not surprising that the adoption of e-administration still appears to be very slow in most of the institutions. There is need therefore, to investigate and unravel through research, the interaction between e-administration and communication health of tertiary institutions.

Statement of Problem

One major issue that prompted this study is apparent breakdown in organizational communication bedeviling the administrative system of some of the public tertiary institutions in Port Harcourt. The researcher's interaction with the administrative system of some of the public tertiary institutions in Port Harcourt suggests that the administrative system is fraught with incidents of late dissemination of information, slow workflow, apparent poor coordination, and information vagueness. This is in consonance with the observations of Otamiri and Odu (2021) that the administrative system of some of the tertiary institutions is fraught with poor feedback, slow flow of information, poor coordination, file misplacement, and general communication gap. Due to apparent communication gap, administrative staff seem to operate more on assumptions rather than clarity of information. This tends to slow down organizational processes. Meanwhile, with the proliferation of virtual technology, it is expected that organizations like tertiary institutions would be achieving communication health.

It has equally been observed that the adoption of e-administration is still very low in public tertiary institutions in Nigeria generally and Rivers State in particular. Obviously, most of their offices are equipped with digital resources such as desktop computers, laptops, printers and even routers. However, core administrative processes are mostly done manually with little or no automated system. It still appears that most office data and information contents are still stored in print formats without adequate effort to have them managed electronically. Although, some of the institutions now use e-school fees payment and electronic result management systems, other aspects of administration such as meetings, and records management are mostly done traditionally. The use of e-communication facilities like email still appears to be very minimal. The environment within which a tertiary institution operates appears to have a role in how they operate when it comes to adopting virtual technology. One of such environmental factors that our tertiary institutions have to contend with is power supply. It is no longer news that Nigeria and indeed Rivers State has inadequate power supply. Although, managers and administrators of public tertiary institutions have subscribed to alternative sources of power supply, power supply shortage remained a major challenge to digital work practices.

Another issue that necessitated this study is the apparent dearth of empirical studies on how e-administration interacts with communication health of public tertiary institutions in Port Harcourt. For instance, Ned (2016) examined the relationship between internet services and secretaries' job performance in tertiary institutions in Rivers State; the impact of WhatsApp messenger on students' performance in tertiary institutions in Ghana (Johnson & George, 2016); Influence of voice call (skype) usage on employee productivity: A case of University of Cape Coast staff (Danielet *al.*, 2017); the effect of the use of social networking sites in the workplace on job performance (Murad, 2017); strategic impact of social media usage on employee productivity: A case of British American tobacco limited employees (Gorst, 2018); the influence of digital communication technologies on office and information managers' job performance in tertiary institutions in Rivers State (Amadike, 2018); the influence of workplace social media usage on administrative effectiveness in Rivers State Civil Service (Dike, 2018); the relationship between electronic communication platforms and administrative effectiveness in Enugu State government parastatals (Chiemele, 2018); the impact of new media usage on organizational performance in Dead Sea products companies in Jordan (Ardam, 2019); impact of new media (social networking) on employee performance (Naheed & Tasawar, 2014). The findings of these studies revealed that web-based communication platforms, new media usage or social media has enhanced the efficient and effective communication in the workplace. However, none of these studies provided scientific evidence on how dimensions of e-administration such as e-documentation system, e-managerial system, and e-communication system interact with parameters of communication health within the context of public tertiary institutions in Rivers State. There is need therefore, to close this knowledge gap by embarking on this study. Displayed in fig 1.1 is the conceptual framework showing the dimensions and manifestations of the predictor variable, criterion variable, and moderating variable.

Fig 1.1: Conceptual Framework

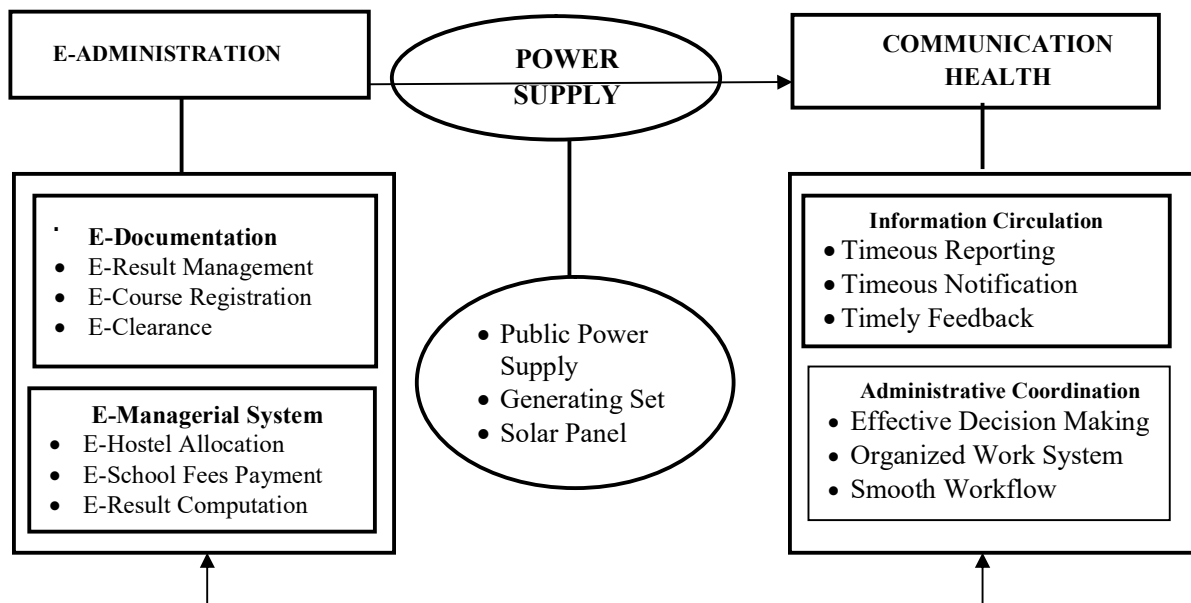


Fig. 1.1: Conceptual Framework Showing Manifestations of the Study Variables

Source: The Researcher's Conceptualization (2023); Amadike (2018); Odu and Opara (2021).

Aim and Objectives of the Study

The aim of the study was to empirically examine the relationship between e-administration and communication health of public tertiary institutions in Port Harcourt. The objectives of study were to:

- 1 Ascertain the relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt.
- 2 Evaluate the relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt.
- 3 Establish the relationship between e-documentation and information clarity in public tertiary institutions in Port Harcourt.
- 4 Ascertain the relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt.
- 5 Establish the relationship between e-managerial system and administrative coordination of public tertiary institutions in Port Harcourt.
- 6 Ascertain the moderating effect of power supply in the relationship between e-administration and communication health of public tertiary institutions in Rivers State

Research Questions

In line with the problem statement and objectives of the study outlined above, the following research questions were posed:

1. What is the relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt?
2. What is the relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt?
3. What is the relationship between e-documentation and information clarity in public tertiary institutions in Port Harcourt?
4. What is the relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt?
5. What is the relationship between e-managerial system and administrative coordination of public tertiary institutions in Port Harcourt?
6. What is the moderating effect of power supply in the relationship between e-administration and communication health of public tertiary institutions in Rivers State?

Hypotheses

In line with the research objectives and questions posed above, the following hypotheses were tested at 0.05 level of significance.

- Ho₁: There is no significant relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt.
- Ho₂: There is no significant relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt.
- Ho₃: There is no significant relationship between e-documentation and information clarity in public tertiary institutions in Port Harcourt.
- Ho₄: There is no significant relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt.
- Ho₅: There is no significant relationship between e-managerial system and administrative coordination of public tertiary institutions in Port Harcourt.
- Ho₆: There is no moderating effect of power supply in the relationship between e-administration and communication health of public tertiary institutions in Port Harcourt.

Benefits of the Study

It is hoped that the findings of this study will be beneficial to Managers/Administrators of tertiary institutions and business organizations. It will help them to appreciate the importance of adopting e-administration and the implications of failing to accept the virtual technologies. Also Office and Information Management Practitioners benefit since this work amplifies the importance of e-administration in achieving higher communication health. It therefore implies that the ability of an

Office and Information Management practitioner to give management professional advice on the best and most cost-effective virtual technology, it will go a long way in enhancing the communication health of the administration.

Researchers and Students: This work extends the frontiers of knowledge on how e-administration interacts with communication health. It adds to the bulk of knowledge and research literature in Administrative Science.

Scope of the Study

The content scope of the study was limited to E-administration (EA) as the predictor variable and Communication Health (CH) as the criterion variable. Discussion of the dimensions of E-administration (EA) was restricted to E-documentation System (EDS) and E-managerial System (EMS). The discussion was extended to Power Supply (PS) as the moderating variable.

The geographical scope of the study was limited to public tertiary institutions in Port Harcourt, Rivers State. The study was delineated to tertiary institutions within Port Harcourt City because of the difficulties associated with reaching other tertiary institutions outside Port Harcourt City. The unit of analysis of the study was the organizations because the study was a macro level study.

Conceptual Review

Concept of E-Administration

The definition of e-administration or e-government has evolved in recent years. It should be noted that there is no single, common definition of e-government. As a result, the term electronic administration is known with different synonyms such as e-administration, e-government and electronic government (Satray & Belkadi, 2019). Indeed, it refers to the use of information and communication technology in the planning and running of an administrative system for the purpose of delivering public services.

In the same vein, electronic administration has been described as the use of ICTs to improve access to administrative services and delivery of value-added target processes for the benefit of stakeholders (Odu, 2021). In general, e-administration indicates the use by the administrative institutions of information and communication technologies with the capacity to transform relations with citizens, businesses, employees and the public entity. These technologies are used to achieve the objectives of electronic administration: improving the quality of services provided to citizens, developing interactions with legal persons, especially businesses, strengthening the autonomy of citizens through access to information and the guarantee of the effectiveness of public administrative management.).

Dimensions of E-Administration

E-Documentation

E-documentation technology has become one of the hottest terms of the 21st century emerging technology. It is derived from the concept and practice of information and communication technology. E-documentation is simply the practice of managing records via the use of computer systems, database management system, and other pay-as-you-use web-based technologies. E-documentation is the key infrastructure to achieve seamless information sharing and service interaction experience from different users. . The features of high performance, high flexibility, high capacity and high security will make cloud technology and e-documentation become the cornerstone of the future of internet innovation. At the same time, it makes distributed database, mobile computing, search technology, Internet of Things and other technologies developed, and increase the user experience.

E-Course Registration: E-course registration refers to the process of signing up or enrolling in online courses or electronic courses offered by educational institutions or online learning

platforms (ChatGPT, 2024). This registration process typically involves selecting the desired courses, providing necessary personal information, and completing any required payment transactions. E-courses are educational programs that are delivered over the internet, allowing students to access course materials, lectures, and assignments remotely. They are often offered by universities, colleges, or online learning platforms, covering a wide range of subjects and levels of education.

E-Clearance: E-clearance for students generally refers to the electronic or online process through which students obtain clearance or approval from various departments or offices within an educational institution. This digital clearance system is designed to facilitate and streamline administrative and academic processes, replacing traditional paper-based methods with more efficient and automated procedures. The e-clearance process is commonly used in universities, colleges, and other educational institutions for various purposes.

E-Managerial System

An e-managerial system is a system that functions as communication link or channel between two or more parties in the same location or located in different locations. In virtual technology, e-managerial system is a shared boundary across which two or more separate components of a computer system exchange information. The exchange can be between software, computer hardware, peripheral devices, humans, and combinations of these (Hookway, 2014). E-managerial system provide a mechanism for separating and linking abstract models which makes it possible for members of an organization or various computer systems in an organization to communicate. E-managerial system therefore, refers to a collection of digital systems and networks that make it possible for stakeholders of an organization to fulfill administrative communication functions such as making inquiries, checking for updates about programmes and invents, sharing documents and other social information, as well as holding formal meetings. .

E-Hostel Allocation: E-hostel allocation refers to the use of dedicated university portal in managing students' application, payment, and clearance for hostel residence. An e-hostel allocation system, or electronic hostel allocation system, is a computerized or online platform designed to streamline and automate the process of assigning accommodations in hostels or dormitories (ChatGPT, 2024). This system is commonly used by educational institutions, companies, or organizations that provide housing facilities to their members, such as students, employees, or guests.

E-School Fees Payment: Prevalently, the traditional payment methods that utilize cash are progressively being demoted and this role has been taken over by the payment method that utilizes digital means, as the development of service transactions increases amongst the various works of life via the internet. Several methods of online payments for transactions to pay for services via the internet are seen in (Sharma, et al, 2019). Among the forms of Inter-Organizational Information System (IOS) is an electronic or e-school fees payment that is devoted to enabling proceedings that are linked with money among the clients and varying establishments to be carried out.

E-Result Computation: ChatGPT (2024) defines e-result computation as the use of online platform designed to automate and manage the process of computing and managing academic results in educational institutions. This practice is particularly useful for schools, colleges, and universities to efficiently and securely manage student grades, transcripts, and related information.

Concept of Communication Health

There are different views about the meaning and nature of communication. McKinney et al. (2016), communication is essential to effective team performance and communications for any organization is like blood flow in the human body. Therefore, any tertiary institution that understands the importance of communication uses it in its organizational environment and operation. Otamiri (2003) defined communication as the process of encoding and decoding messages. Here, emphasis is placed on the relationship between objects, thoughts processes which involve interpreting these objects and the symbols/signs used to express a given thought or message. He reiterated that communication also involves the active sharing of information such that a common attitude towards a subject or action can be seen and felt in the participants. Omego and Nwachukwu (2013) defines organizational communication as a type of communication which is crucial to an organization. Communication as a concept is a means of bringing about change. It is the mainstream of growth in any tertiary institution.

Method

The study adopted the explanatory cross-sectional survey research design. This study was explanatory in nature because it aims to scientifically determine the relationship between e-administration and communication health within the context of public tertiary institutions in Port Harcourt. It is equally a cross-sectional survey because as it involved a survey of the opinion of respondents across public tertiary institutions in Rivers State. Thus, questionnaire was used for the collection of primary data, while correlational tool was used to test the relationship between the predictor and criterion variable.

Research Population

The population of the study consisted of five (5) public tertiary institutions in Port Harcourt, Rivers State. The tertiary institutions rather than their staff constituted the population of the study because the criterion variable "communication health" is a macro construct (it manifests at the organizational level). Details of the population are provided in table 3.1 overleaf.

Sampling and Sampling Techniques

The study was a census research which entails using the entire population. In terms of respondents, administrative heads such as Deans, Heads of Departments, Faculty Officers, and Directors of ICT Centres were selected to elicit response on behalf of their institutions. The choice of these categories of administrative heads is informed by the assumption that given their administrative position, they are directly involved in the communication process. Thus, a total of three hundred and fifty-nine (359) administrative heads served as respondents.

The study adopted both primary and secondary source of data. Structured questionnaire served as primary source of data for the study. Primary data gathered through the respondents were used for analysis and interpretation. While the secondary source ranges from materials gathered from textbooks, journal, articles etc.

Instrumentation and Measurement

Questionnaire was used as instrument for data collection. The instrument was named E-administration and Communication Health Questionnaire (ECHQ). The questionnaire was divided into two sections. Section A was designed to elicit data regarding the demographic characteristics of the respondents, while section B was designed to elicit the opinion of the respondents on how each of the study variables manifests. The questionnaire was developed using a 4-point rating scale with the following response options: Strongly Agree (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagree (SD) = 1.

Face and content validity was used in ascertaining the validity of the instrument through the comments of the supervisor and other experts in Office and Information Management while the

Cronbach Alpha Coefficient (a measure of scale reliability) via the Statistical Package for Social Sciences (SPSS) version 22 was employed to obtain a reliability of 0.72.

Administration of the Instrument

A total of three hundred and fifty-nine (359) copies of the questionnaire was administered across public tertiary institutions in Rivers State with the help of two research assistants. The researchers were able to retrieve three hundred and forty-two (342) copies representing 95%.

Method of Data Analysis

Mean and standard deviation were used for the univariate analyses. Pearson Product Moment Correlation was used for the bivariate analyses; while multivariate analysis was done using Partial Correlation. The Statistical Package for Social Sciences (SPSS) was used to aid the analysis. The criteria is that if our statistical analysis shows that the significance level is below the cut-off value we have set (which is 0.05), we rejected the null hypothesis and accepted the alternate hypothesis. Alternatively, if the significance level is above the cut-off value, the null hypothesis was accepted. For the coefficient values, the following interpretation scheme was applied as stated thus: (a) No Relationship = 0, (b) Low/Weak Relationship = 0.1-0.4, (c) Moderate or Relatively Strong Relationship = 0.5-0.7, (d) High/Strong Relationship = 0.8-0.9, (e) Perfect Relationship = 1.

Univariate Analysis

Table 1: Items and Scores on E-Documentation

S/N	E-Documentation	SA 4	A 3	D 2	SD 1	TOTAL
1	In my office, most of our files are stored and managed in database management systems.	173	100	58	11	342
2	My institution used online result management platform to manage computation, upload, and transcript of academic result.	158	116	60	8	342
3	Students now register their courses online from the comfort of their phones and smart devices.	160	124	52	6	342
4	Admission clearance and documentation are now done via the school website.	150	130	53	9	342
5	Graduation clearance and other clearances are also done digitally.	173	103	59	7	342

Source Data (2023)

Table 1 above shows the number of responses recorded in each of the response options. The table shows that most of the responses are clustered around 'Strongly Agreed (SA) and Agreed' this implies that the respondents are of the view that their institution engage in e-documentation. For instance, on the measurement item 1 which requires the respondents to indicate their view if in their office, most of their files are stored and managed in database management systems,

Table 2: Items and Scores on E-Managerial System

S/N	E-Managerial System	SA 4	A 3	D 2	SD 1	TOTAL
6.	Students now apply for hostel space online and payments are also made online too.	160	118	50	14	342
7.	Hostel fees and clearance are now handled electronically.	174	100	57	11	342

8.	Registration and payment of school fees are now done online including printing of receipts.	150	125	60	7	342
9.	The use of electronic result management system makes it possible for students to access their academic results online via mobile devices.	148	130	54	10	342
10.	Result computation and verification are now managed via electronic result management system.	162	110	57	13	342

Source: Field Work, 2023.

Table 2 above shows the number of responses recorded in each of the response options. the table shows that most of the responses are clustered around 'strongly Agreed (SA) and Agreed' this implies that the respondents are of the view that their institution engage in e-managerial system. For instance, on the measurement item 9 which requires the respondents to indicate their view if they use electronic result management system and whether e-result management helps students access their academic results. Majority (148) of the respondent strongly agreed, while 130 respondents agreed, 54 respondents disagreed and only 10 respondents strongly disagreed. This response frequency shows that the respondents affirmed that Public Tertiary Institutions in Port Harcourt, adopts e-managerial system.

Table 3 Items and Scores on Information Circulation

S/N	Information Circulation	SA 4	A 3	D 2	SD 1	TOTAL
11	Administrative reports are often submitted on time in institution.	159	130	46	7	342
12	Members get informed about meeting schedules early enough to get them prepared.	152	126	54	10	342
13	We hardly experience delay in accessing administrative updates in recent times.	160	119	50	13	342
14	The level of information flow in most of our units helps to keep all stakeholders informed about administrative activities.	163	115	57	7	342
15	There is a reasonable level of feedback in the communication mechanism of our institution.	151	117	60	14	342

Source: Field Work, 2023.

Table 3 above shows the number of responses recorded in each of the response options. the table shows that most of the responses are clustered around 'Strongly Agreed' (SA) and Agreed this implies that the respondents are of the view that there is a reasonable level of information circulation in their tertiary institutions. For instance, on the measurement item 20 which requires the respondents to indicate their view if there is a reasonable level of feedback in the communication mechanism of their institution, Majority (151) of the respondent strongly agreed, while 117 respondents agreed, 60 respondents disagreed and only 14 respondents strongly disagreed. This response frequency shows that the respondents affirmed that Public Tertiary Institutions in Rivers State, makes use of Communication health in Information Circulation. The responses are summarized in the SPSS table shows below:

Table 4: Items and Scores on Administrative Coordination

S/N	Administrative Coordination	SA	A	D	SD	TOTAL
		4	3	2	1	
16.	We are committed to the implementation of administrative decisions.	155	127	49	11	342
17.	Staff and students properly coordinated to ensure effective implementation of decisions and policies.	153	130	46	13	342
18	Administrative operations flow smoothly in our institution.	164	124	47	7	342
.19	Our work system is well organized to a reasonable extent.	161	119	50	12	342
20	Work is going smoothly across various units and departments in this school.	157	125	52	8	342

Source: Field Work, 2023.

Table 4 above shows the number of responses recorded in each of the response options. The table shows that most of the responses are clustered around 'Strongly Agreed' (SA) and Agreed' (A) this implies that the respondents are of the view that their institution there is some level of administrative coordination. For instance, on the measurement item 23, respondents were required to indicate their view if administrative operations flow smoothly in their institution. Majority (164) of the respondents affirmed strongly, 124 respondents agreed, 47 to disagreed, and only 7 strongly disagreed. This response frequency shows that the respondents affirmed that in Public Tertiary Institutions in Port Harcourt there are some levels of administrative coordination. The responses are summarized in the SPSS table shows below:

Table 5 Items and Scores on Information Clarity

S/N	Information Clarity	SA	A	D	SD	TOTAL
		4	3	2	1	
26	Our administrative heads are often very clear in the presentation of information.	159	125	48	10	342
27	Most times, our administrative information are accurate and detailed.	160	120	50	12	342
28	We pay serious attention to producing letters that are error-free.	154	128	49	11	342
29	Our administrative heads ensure that staff are properly informed about what to do per time and this increases their understanding of their job roles.	162	113	53	14	342
30	Teaching and non-teaching staff understand the programmes and policies of this institution.	159	117	51	15	342

Source: Field Work, 2023.

Table 5 above shows the number of responses recorded in each of the response options. The table shows that most of the responses are clustered around 'Strongly Agreed (SA) and Agreed' (A) this implies that the respondents are of the view that in their institution there is clarity when information is passed. For instance, on the measurement item 26, respondents were required to

indicate their view if their administrative heads are often very clear in the presentation of information. Majority (159) of the respondents strongly agreed, 125 respondents agreed, 48 disagreed, and only 10 strongly disagreed. This response frequency shows that the respondents affirmed that in Public Tertiary Institutions in Port Harcourt, there is clarity whenever information is passed. The responses are summarized in the SPSS table shows below:

Table 6 Descriptive Statistics of Information Clarity

	N	Minimum	Maximum	Mean	Std. Deviation
IC1	342	1.00	4.00	3.266	0.816
1C2	342	1.00	4.00	3.251	0.812
1C3	342	1.00	4.00	3.242	0.810
1C4	342	1.00	4.00	3.236	0.809
1C5	342	1.00	4.00	3.228	0.807
Valid N (likewise)	342		Grand Mean	3.245	

Source: SPSS Output, 2023.

Table.7 above reveals mean scores of 3 points across all the response items. With a grand mean of 3.245. This implies that respondents affirmed that Public Tertiary Institutions in Port Harcourt that there is information clarity when circulating information. This shows that their administrative heads are often very clear in the presentation of information, most times, their administrative information are accurate and detailed, they pay serious attention to producing letters that are error-free, their administrative heads ensure that staff are properly informed about what to do per time and this increases their understanding of their job roles, and teaching and non-teaching staff understand the programmes and policies of this institution. The homogeneity in the standard deviation scores across all the items shows that the respondents were harmonious in their views.

Table 8: Items and Scores on Power Supply

S/N	Power Supply	SA	A	D	SD	TOTAL
		4	3	2	1	
31	We scarcely experience power outage in my unit.	160	119	49	14	342
32	We enjoy constant power supply from the Power Holding Company of Nigeria.	154	117	55	16	342
33	Some of my colleagues use personal generating sets to run their office in the absence of public power supply.	162	115	50	15	342
34	In recent times, power supply has become a serious challenge in my office.	149	130	49	14	342
35	My institution has also made provisions for solar system.	158	120	53	11	342

Source: Field Work, 2023.

Table 8 above shows the number of responses recorded in each of the response options. The table shows that most of the responses are clustered around 'Strongly Agreed' (SA) and Agreed (A) this implies that the respondents are of the view that their institution there is organizational power supply. For instance, on the measurement item 35, respondents were required to indicate if their institution has also made provisions for solar system. Majority (158) of the respondents strongly agreed, 120 respondents agreed, 53 to disagreed, and only 11 affirmed to strongly disagreed. This response frequency shows that the respondents affirmed that in Public Tertiary Institutions in Port Harcourt, there is power supply in their organizations. The responses are summarized in the SPSS table shows below:

Bivariate Analysis
E-Documentation and Communication Health

Ho₁: There is no significant relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt.

Ho₂: There is no significant relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt.

Ho₃: There is no significant relationship between e-documentation and information clarity in

Table 9: Correlations between E-Documentation and Communication Health

			E-documentation	Information Circulation	Administrative Coordination	Information Clarity
<i>Person</i>	E-documentation	relation Coefficient (2-tailed)	1.000	0.517**	0.652**	0.462**
			.342	.342	.342	.342
	Information Circulation	relation Coefficients (2-tailed)	0.517**	1.000	0.517**	0.517**
			.342	.342	.342	.342
<i>Person</i>	Administrative Coordination	relation Coefficient (2-tailed)	0.652**	0.652**	1.000	0.652**
			.342	.342	.342	.342
	Information Clarity	relation Coefficient (2-tailed)	0.462**	0.462**	0.462**	1.000
			.342	.342	.342	.342

Correlation is Significant at the 0.01 level (2-tailed).

public tertiary
 Source: SPSS Output, 2023

Column two of table .9 above shows r value of 0.517 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating e-documentation and information circulation. Since the significance value is less than the alpha level of 0.05, the null hypothesis (Ho₁) which states that there is no significant relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt was rejected and the alternate hypothesis (Ha₁) was accepted. This implies that there is a moderate positive relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt.

Column three of table 9 above shows r value of 0.652 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating e-documentation and administrative coordination. Since the significance value is less than the alpha level of 0.05, the null hypothesis (Ho₂) which states that there is no significant relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt, Nigeria was rejected and the alternate hypothesis (Ha₂) was accepted. This implies that there is a

strong positive relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt.

Column four of table 9 above shows r value of 0.462 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating e-documentation and information clarity. Since the significance value is less than the alpha level of 0.05, the null hypothesis (Ho₃) which states that there is no significant relationship between e-documentation and information clarity in public tertiary institutions in Port Harcourt, was rejected and the alternate hypothesis (Ha₃) was accepted. The correlation value of 0.462 indicates that here is a weak positive relationship between e-documentation and information clarity in public tertiary institutions in Port Harcourt. These results show that e-documentation brings about improved communication health.

E-Managerial System and Communication Health

Ho₄: There is no significant relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt.

Ho₅: There is no significant relationship between e-managerial system and administrative coordination of public tertiary institutions in Port Harcourt.

Ho₆: There is no significant relationship between e-managerial system and information clarity in public tertiary institutions in Port Harcourt.

Table 10: E-Managerial System and Communication Health

		E- Managerial System	Information Circulation	Administrative Coordination	Information Clarity
<i>Person</i>	E- Man ageri al Syste m relation Coefficient (2-tailed)	1.000	0.527** .000	0.662** .000	0.472** .000
		342	342	342	342
	Informati on Circu latio n relation Coefficient (2-tailed)	0.527** .000	1.000	0.745** .000	0.757** .000
		342	342	342	342
	Administrative Coordination relation Coefficient (2-tailed)	0.662** .000	0.745** .000	1.000	0.622** .000
		342	342	342	342
	formation Clarity relation Coefficient (2-tailed)	0.472** .000	0.757** .000	0.622** .000	1.000
		342	342	342	342

Correlation is Significant at the 0.01 level (2-tailed).

Source: SPSS Output, 2023

Column two of table 10 above shows r value of 0.527 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating e-managerial system and information circulation. Since the significance value is less than the alpha level of 0.05, the null hypothesis (Ho₄) which states that there is no significant relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt was rejected and the alternate hypothesis (Ha₄) was accepted. This implies that there is a strong positive

relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt.

Column three of table 10 above shows r value of 0.662 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis e-managerial system on administrative coordination. Since the significance value is less than the alpha level of 0.05, the null hypothesis (Ho₅) which states that there is no significant relationship between e-managerial system and information clarity in public tertiary institutions in Port Harcourt, was rejected and the alternate hypothesis (Ha₅) was accepted. This implies that there is a strong positive relationship between e-managerial system and information clarity in public tertiary institutions in Port Harcourt.

Column four of table 10 above shows r value of 0.472 at a significance level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating e-managerial system and information clarity. Since the significance value is less than the alpha level of 0.05, the null hypothesis (Ho₆) which states that there is no significant relationship between e-managerial system and information clarity in public tertiary institutions in Port Harcourt was rejected and the alternate hypothesis (Ha₆) was accepted. This implies that there is a weak positive relationship between e-managerial system and information clarity in public tertiary institutions in Port Harcourt. These results show that e-managerial system brings about improved communication health in terms of information circulation, administrative coordination and information clarity.

Multivariate Analysis

Power Supply, E-administration and Communication Health

Ho₆: There is no moderating effect of power supply in the relationship between e-administration and communication health of public tertiary institutions in Port Harcourt.

Table 11: Correlations of Power Supply, E-administration and Communication Health

Control Variable			E-Administration	Communication Health	Power Supply	
none^{-a}	E-Administration	Correlation	1.000	0.685	0.839**	
		Significance (2-tailed)	.	.000	.000	
		Df	000	342	342	
	Power Supply	Correlation	0.685**	1.000	0.573	
		Significance (2-tailed)	.000	.	.000	
		Df	337	000	342	
	E-Administration	Correlation	0.839**	0.573	1.000	
		Significance (2-tailed)	.000	.000	.000	
		Df	337	342	000	
	Power Supply	Communication Health	Correlation	1.000	0.729	
			Significance (2-tailed)	.	.000	
			Df	000	342	
Power Supply		Correlation	0.839**	1.000		
		Significance (2-tailed)	.000	.		
		Df	337	000		

Table 11 above reveals r value of 0.685 at a significant level of 0.00 signifying a correlation between e-administration and communication health; this shows a positive strong relationship which is significant. The partial relationship controlling for environmental factor (power supply), is

a very strong positive association given the r-value 0.839 which is quantifiably huge. Furthermore, the significance value of 0.00 which is less than the alpha level of 0.05 implies that the relationship between e-administration and communication health is moderated by the influence of power supply as an environmental factor. This implies that the extent to which e-administration positively influences communication health Public Tertiary Institutions in Rivers State, Nigeria is moderated by power supply as an environmental factor.

Summary of Findings

Based on the analyses and interpretation of data, the following major findings were made:

1. There is a moderate positive relationship between e-documentation and information circulation of public tertiary institutions in Port Harcourt.
2. There is a strong positive relationship between e-documentation and administrative coordination of public tertiary institutions in Port Harcourt.
3. There is a weak positive relationship between e-documentation and information clarity in public tertiary institutions in Port Harcourt.
4. There is a strong positive relationship between e-managerial system and information circulation of public tertiary institutions in Port Harcourt.
5. There is a strong positive relationship between e-managerial system and administrative coordination in public tertiary institutions in Port Harcourt.
6. There is a moderating effect of power supply in the relationship between e-administration and communication health of public tertiary institutions in Port Harcourt.

CONCLUSIONS/ RECOMMENDATIONS

Based on the results and findings, the study concluded that e-administration enhances communication health in Public Tertiary Institutions in Port Harcourt. Academic and non-academic staff can have their job highly beefed up effectively by employing the machineries of e-documentation, e-managerial system, and e-communication system. Based on the findings and conclusions, the following recommendations were made:

Recommendations

1. Management should provide electronic result management systems that will match the unique needs of the institution and training should be provided to enable all teaching staff use the platform independently.
2. Management should provide a policy environment that will online meetings and online presentations a norm to enhance distant communication and collaboration.
3. The management of Public Tertiary Institutions should optimize and expand the capacity of their online library and other online institution-based interactive platform to enhance educational and administrative communication.
4. Management should make their e-school fees payment more efficient and convenient to make students conduct their transactions smoothly with less stress.
5. Management should expand their database management system to accommodate the online data storage needs of all units, departments and faculties.

- 6 Management should ensure that offices and administrative centres are adequately powered by providing power generating sets and other alternative sources of power supply. The adoption of virtual technologies will make more sense when there is adequate power supply.

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