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## CLLOUD COMPUTING CAPABILITY AND ORGANIZATIONAL COMMUNICATION OF PUBLIC TERTIARY INSTITUTIONS IN RIVERS STATE

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### ABSTRACT

*This study examined cloud computing capability and organizational communication of public tertiary Institutions in Rivers State. The study adopted an explanatory research design and collected primary data via a cross-sectional survey. The population of the study consisted 502 administrative heads who are prominently involved in communication processes as staff of the public tertiary institutions in Rivers State. The sample size comprised 222 administrative staff. Structured questionnaire was used as instrument for data collection. The study adopted Person-Environment Fit Theory as baseline theory. Spearman Rank Order Correlation was used for the bivariate analysis. The study found that there is a significant positive relationship between cloud computing capability and organizational communication in terms of information dissemination, coordinated work system and decision making and implementation. The study concluded that cloud computing capability enhance organizational communication in public tertiary institutions in Rivers State. Administrative heads across public tertiary institutions, such as ICT directors, Deans and HODS, can have their job enhanced by adopting cloud computing storage process through internet. The study recommends that management of public tertiary institutions should ensure reliable networks of offline and virtual databases are put in place for speedy storage, retrieval, and safeguarding of their digital capabilities, which will in turn enhance information dissemination, coordinated work system and decision making and implementation in the organizational institutions.*

**Keywords:** Cloud computing capability, coordinated work system, information dissemination organizational communication

### INTRODUCTION

Administrative activities of institutions revolve around organizational communication (OC). OC is simply the deliberate process of creating and sharing meaningful information, ideas, interest and views across all levels and units of an organization in order to achieve mutual understanding between management and staff. However, the researcher's observation suggests that the management and administrative System of some of these public tertiary institutions in Rivers State are fraught with sluggish information flow and poor feedback system. Cloud computing capability (CCC) refers to the digital ability to process, store and accessing information files in web-based

networks and platforms rather than tangible computer devices. Cloud computing is simply the act of using web-based computer resources in processing, accessing, storing and handling data and information contents as opposed to the traditional practice of processing and storing data and information contents in a tangible (premise-based) computer system. It requires the skill or the technical ability to use cloud technologies such as Google Drive, OneDrive, and database management systems in storing and accessing office virtually in any device anywhere through the connectivity of the internet. It is associated with storing, accessing, and sharing data and information contents of an office using on-demand internet resources in any device at any time.

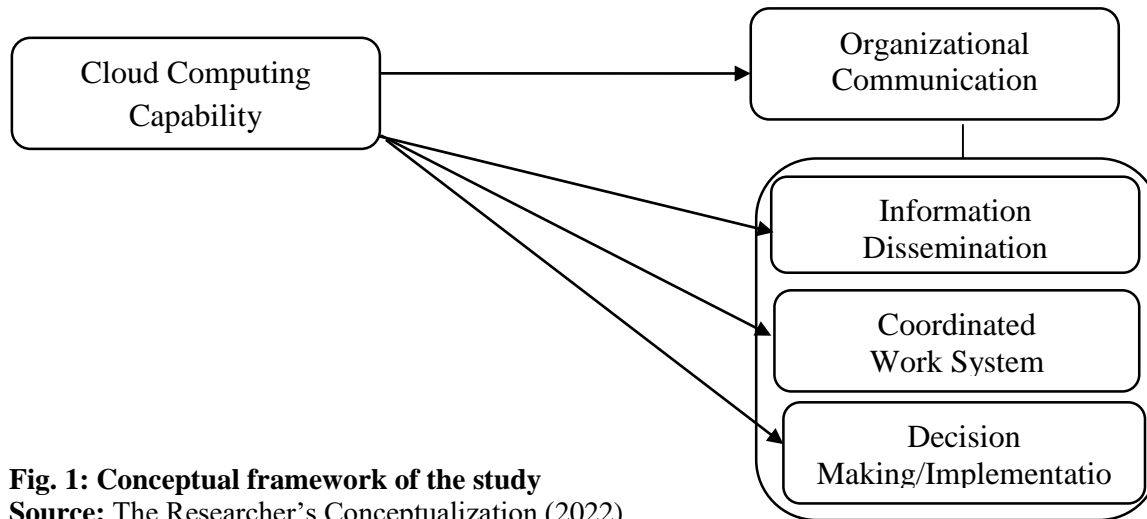
CCC is also known as cloud computing literacy. Employees who are cloud computing literate are able to access office files beyond their physical office space. CCC is essential to staff of tertiary institutions because both educational and administrative communication channels rely on records management. While office files stored in file cabinets and physical computer systems are very susceptible to information insecurity, being able to save documents in Google Drive and other cloud computing facilities reduces the risk of information insecurity. Provided the password is not exposed to other people, files stored in the cloud are very more secure. While employee digital capability may be capable of influencing the success of OC in tertiary institutions, another factor may moderate the extent of digital communication is digital resources availability.

One of the maladies bedeviling the organizational success of tertiary institutions in Rivers State appears to be internal communication gap. The administrative systems of some of these public Tertiary Institutions in Rivers State are fraught with communication issues such as late dissemination of information, information hoarding, poor coordination of operations and poor decision implementation process. Sometimes, administrative correspondences are sent very late and this results to last-minute rush and mistakes in the implementation of administrative plans and decisions. Communication gap in administrative systems of tertiary institutions brings disinformation, misinformation, uncoordinated work process, sluggish administrative process and poor Administrative results (Otamiri & Odu, 2021; Odu, 2021). Another issue that necessitated this study is the seeming dearth of empirical studies on the relationship between CCC and OC within the context of public tertiary institutions in Rivers State.

Interestingly, researchers have also conducted various studies attempting to explain how information technology skills interacts with employee performance in various climes. For instance, Adeshina (2011) examined the relationship between information technology skills of secretarial teachers in Colleges of Education and their ability to utilize the internet for effective lecture delivery; Okpokwasili (2018) examined information systems application skills required of secretaries for job performance in Deposit Money Banks. Furthermore, Adeshina, et al. (2013) examined the relationship between the information technology skills acquired by secretarial teachers in the Nigerian Colleges of Education and their utilization of internet facility for effective teaching. An earlier research by Jonathan (2010) equally examined the effects of computer literacy on the job performance of modern secretaries in NEPA Enugu Zonal office. However, none of these studies was able to provide empirical explanation on how employee digital capabilities interacts with OC.

Otamiri and Nmehielle (2020) examined the influence of digital infrastructure on OC of tertiary institutions in Rivers State. The findings of these studies identified various factors that can impact on OC of various organizations. However, none of them was able to specifically explain how CCC impact on OC of tertiary institutions in Rivers State in terms of information dissemination (ID),

coordinated work system (CWS) and decision making/implementation (DMI). This is the knowledge gap we seek to fill.



**Fig. 1: Conceptual framework of the study**

**Source:** The Researcher's Conceptualization (2022).

The aim of this study was to examine the relationship between CCC and OC in public tertiary institutions in Rivers State. The study was guided by the following hypotheses:

- Ho<sub>1</sub>: There is no significant relationship between CCC and ID in public tertiary institutions in Rivers State.
- Ho<sub>2</sub>: There is no significant relationship between CCC and CWS of public tertiary institutions in Rivers State.
- Ho<sub>3</sub>: There is no significant relationship between CCC and DMI in public tertiary institutions in Rivers State.

## THEORETICAL FOUNDATION OF THE STUDY

This work is anchored on Person-Environment Fit Theory propounded in 1962 (Osita, 2018). This theory of psychological stress describes the interaction between the person and environment ( $P \times E$ ) as the key to comprehending people's cognitive, emotional and behavioral reactions such as stress as well as operational productivity level. The relevant assumptions of this theory as deemed fit for this work are: (1) a mismatch between a person and his work environment will lead to tension and uneasiness capable of hampering his level of productivity; and (2) worker's capabilities (in this case, employee digital capabilities) will determine the level of work pressure and performance (Lewin and Edward as cited in Odu, 2019). In essence, this last assumption explains that employee digital capabilities determines their capacity to deal with the demands of the work environment (whether physical or digital work environment) as well as the ability to collaboratively work with others.

The implication of the first assumption is that an employee with low digital capabilities such as internet capability, data processing capability and CCC will not be able to cope with the demands of a digitalized work environment. In a digitalized work environment like that of Tertiary Institutions where electronic communication is becoming very prominent, successful OC will be difficult if the workforce lack the prerequisite digital literacy. Adopting this theory as the major

theoretical framework for this study is based on the fact that the theory is related to the predictor variable (employee digital capabilities). Another point that made this theory appropriate for this study is the fact that it explains the capabilities of workers that influence their ability to cope with demands of communicating in a digitalized work environment.

### **CONCEPT OF CLOUD COMPUTING CAPABILITY**

CCC refers to being skillful or proficient in the use of online file storage technologies in creating, storing, accessing and sharing office files which makes it possible for office files to be securely accessed from any device beyond in the one in the office. It has to do with the technical ability to manage administrative records on google drive, iCloud, online database, and other virtual computing platforms. This digital capability has come to be very important in recent times as organizations advance towards virtual records keeping which guarantees access to office files beyond the physical office environment (Eke, 2021). Provided there is good internet signal, workers who have cloud computing skill can upload, access and download Administrative files under their auspices. Kim (2009) defined CCC as being able to access files, data, programs and third-party services from a web browser via the Internet that are hosted by a third-party provider” and “paying only for the computing resources and services you used.

Cloud computing is a model for enabling convenient, on demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction. CCC are those special abilities and capabilities that enable one to manipulate cloud computing technological devices, software and infrastructures to enhance ubiquitous, convenient, on-demand network access to a shared pool of configurable computing resources (e.g networks, services, storage, applications, and services) that can be rapidly provided with minimal management input or service provider interface (Elekwachi, 2022).

### **Organizational Communication**

OC refers to effective information sharing and interaction among various units of an organization and members of the institution. It has to do with effectiveness in internal ID and coordination of the various departments and units of an institution. Bucăța and Rizascu (2017) define communication as a relational process, in which two or more parties shall exchange information, understand and influence each other; it is an indispensable element for the optimal operation of any human collectivities. This consists of the transmission, receipt, storage, processing and use of information. Effective OC requires specialized personnel in the field of communication to deal with internal and external communication of information.

As instruments of internal communication, through which the organization informs, reminds, announces projects, policies, actions, activities etc., a periodic newsletter can be used, sent via e-mail or on paper. External communication refers to communication management strategy, which any organization applies for the purpose of communicating messages to the general public. An overview of sources suggests that OC is a social process which provides contact and information exchange between both departments and units of organization and organization’s environment for the purpose of organization’s operation and accomplishment of its objectives (Blazenaite, 2012).

OC can be viewed from multiple perspectives. In this study, we view it as ID, CWS and DMI. ID is a need comparable with other basic human needs. Free flow of information enable individuals participate effectively in economic, social and political activities in the society and enhance education, knowledge and learning even in the workplace (Echezona, 2007). Thus, timely information circulation is the flow of information at the right time, to the right audience, commanding the right feedback, to boost effectiveness and efficiency (Yusuf & Lawal, 2012). Quality of information matters in disseminating and circulating it to the users. Thus, in order for timely information circulation to be enhanced, information managers must identify the recipients needed for such information, appropriate means of communication and cost effectiveness with cognizance to technology and globalization which are incessantly shaping business actions.

In tertiary Institutions are saddled with the responsibility to circulate the rightful information at the right time and right places to enhance effective decision as may be required at a given point in time. The information manager is expected to interpret and later transmit the defined strategies into management decisions and corporate actions, thus circulating such information in form of instructions, procedures or schedules to employees and other stakeholders as the case may be, at a rightful timely basis (Das, 2011).

CWS are essential organizations. The concept of work coordination underscores the extent to which an administrative head is able to properly and productively synchronize the attention and energy of human and material resources under his auspices (Otamiri, 2021). Going by the systems theory, no single office or unit in an organization should work in isolation. Administrative heads must therefore be able to properly organize and mobilize subordinates with relevant information and materials for smooth Administrative operations. The Administrative head must be organized enough to appreciate the needs and challenges associated with each task or function assigned to committees. He must be able to ensure that no office or unit under his auspices is left out. Effective coordination can also be seen as the extent to which uniformity of operations is observable across Administrative offices.

DMI basically revolves around OC. It takes open and constant communication for managers and administrators of universities to make and implement decisions. The word “decision-making” conjures up the image of choice among alternative courses of action in a way appropriate to the demand of the situation. The ability of the decision maker to choose the best option that is capable of achieving the set objective or solving the problem demands structured decision guidelines (James & Yero, 2018). To be effective, university administrators and Administrative heads must be able to come up with decisions that help adapt to function proactively as well as find intelligent solutions to challenges and problems confronting the institution.

Effective DMI repositions universities to better master their environment. Decision making can be regarded as an outcome of mental processes (cognitive processes: memory, thinking, evaluation) leading to the selection of a course of action among several alternatives. Effective decision making is very paramount to the progress of every organization and institution as it leads or shows the next line of action. When decisions are effectively made, confusion is cleared and work can progress. Employees will know what to do and how to do as management decision will be communicated to them. A decision can only be said to be effective when it shows the next line of action.

## METHODOLOGY

This study adopted an explanatory research design and collected data in cross-sectional survey. The population of the study consisted 502 administrative heads who are prominently involved in the communication process as staff of public tertiary institutions in Rivers State. Taro Yamene Sample was used to obtain a sample of 222 respondent from the 502 administrative heads. Structured questionnaire was used as instrument for data collection. After validation by experts, Cronbach alpha was used to test the reliability of the instrument. Out of 222 copies of the questionnaire administered, a total of 150 copies (representing 68%) were retrieved. Mean and standard deviation were used for the univariate analysis; Spearman Rank Order Correlation Coefficient was used for the bivariate analysis.

## DATA ANALYSES AND RESULTS

**Table 1: Correlation between CCC and measures of OC**

		CCC	ID	CWS	DMI
<b>Spearman's rho</b>	CCC				
	Correlation Coefficient	1.000	.722**	.711**	.609**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	150	150	150	150
	ID				
	Correlation Coefficient	.722**	1.000	.640	.710
	Sig. (2-tailed)	.000	.	.000	.000
	N	150	150	150	150
	CWS				
	Correlation Coefficient	.711**	.812	1.000	.760
	Sig. (2-tailed)	.000	.000	.000	.000
	N	150	150	150	150
DMI					
Correlation Coefficient	.609**	.545	.532**	1.000	
Sig. (2-tailed)	.000	.000	.000	.000	
N	150	150	150	150	

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

Table 1 shows r value of 0.722 at a significant level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating to CCC and ID. Since the significant level is less than the alpha level of 0.05, the null hypothesis ( $H_{01}$ ) which states that there is no significant relationship between CCC and ID of public tertiary institutions in Rivers State was rejected and the alternate hypothesis ( $H_{a1}$ ) was accepted. This implies that CCC has a high positive correlation with OC in terms of ID in public tertiary Institutions in Rivers State.

Table also shows r value of 0.711 at a significant level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating to CCC and CWS. Since the significant level is less than the alpha level of 0.05, the null hypothesis ( $H_{02}$ ) which states that there is no significant relationship between CCC and CWS in public tertiary institutions in Rivers State was rejected and the alternate hypothesis ( $H_{a2}$ ) was accepted. This implies that CCC has a high positive correlation with OC success in terms of CWS in public tertiary institutions in Rivers State.



Table 1 further shows  $r$  value of 0.509 at a significant level of 0.00 which is less than the chosen alpha level of 0.05 for the hypothesis relating to CCC and DMI. Since the significant level is less than the alpha level of 0.05, the null hypothesis ( $H_{03}$ ) which states that there is no significant relationship between CCC and DMI in public tertiary institutions in Rivers State was rejected and the alternate hypothesis ( $H_{a3}$ ) was accepted. This implies that CCC has a high positive correlation with OC in terms of DMI in public tertiary Institutions in Rivers State.

These results showed that there is a significant positive relationship between CCC and OC. That the ability for organization to store and access files beyond the physical office space through the use of Google Drive, OneDrive and other cloud-based platforms can enhance OC in terms of ID, CWS and DMI in public tertiary institutions in Rivers State.

### **DISCUSSION OF FINDINGS**

The test of hypothesis revealed that there is a high positive correlation between CCC and OC in public tertiary institutions in Rivers State. This implies that improvement in CCC brings about a significant positive improvement in ID, CWS and DMI. Drive management proficiency in the aspects of its organizing skill, content sharing skill, content uploading and download skill goes a long to aid administrative activities pertaining to timely information circulation for information managers and other administrative officers in public tertiary institutions for instance, an information manager who skillfully manages a Google drive is able to share, upload and download contents swiftly irrespective of geographical location. The finding corroborates the findings of Pack (2018) that CCC helps information managers to circulate information on time, resulting to timely reportage and notification.

Managing a Google drive competently gives an individual the ability to speedily organize their Google drive page, upload/download, and share contents of all supported format, such as videos, audio, graphics, texts, etc., which helps to transmit data and information on timely bases. Google drive management proficiency is the best way to judiciously make the best out of this cloud facility and protect against long search and haphazard arrangement of files and folders that are capable of causing delayed job delivery and frustration of working hours. When an information manager is able to use their laptop, smartphone or tablet to organize their Google drive, share, upload and download contents from wherever they are, it helps him/her to reach out to their recipients without time and location restrictions.

Official tasks can be dealt with early enough when Google drive is well managed as contents are being shared, uploaded and downloaded with no geographical or time constraint. Proficient use of Google drive for official purposes by saving and retrieving contents, have greatly reduced the use of hard copies of document and tangible storage devices such as flash drive, external hard disk, memory card, etc., thereby helping to protect data and information, since it is easier to penetrate a physical storage device than a cloud storage platform (Wells, 2016).

### **CONCLUSION AND RECOMMENDATIONS**

Based on the results and discussion of findings, the study concluded that CCC enhance OC in public tertiary institutions in Rivers State, Nigeria. Administrative heads across public tertiary institutions, such as ICT directors, Deans and HODS, can have their job highly effectively enhanced by adapting on cloud computing storage process through internet. Elaborately, the work

also concluded that CCC enhance OC in public tertiary institutions in Rivers State, Nigeria in terms of ID, CWS and DMI. It therefore implies that educational organizations such as public tertiary institutions that intend to enhance the performance of their administrative heads, should work on improving their CCC. The study thus recommends as follows:

1. Management of public tertiary institution should ensure that the details of every decision taken are safely kept in their physical and virtual storage media. This will serve a good reference point for future boost of their organization communication.
2. ICT directors, Deans and HODs in public tertiary institutions should religiously adopt the culture of digital documentation of all the institutional data within their jurisdiction, so as to translate this into enhanced ID, CWS and DMI.
3. Management of public tertiary institutions should ensure that reliable networks and offline and virtual databases are put in place for speedy storage, retrieval, and safeguarding of their digital capabilities, which will in turn enhance ID, CWS and DMI in the institutions.

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