

**RESEARCH ARTICLE | OPEN ACCESS****Effect of Virtual Conference on the Performance of Tertiary Institutions in Enugu State****Ubani, Solomon Ndubuisi¹, Prof. Fred O. Eze², & Mbah, Paulinus Chigozie PhD³**^{1,3}*Department of Business Administration, Enugu State University of Science and Technology, Enugu*²*Department of Public Administration, Enugu State University of Science and Technology, Enugu****Corresponding Author****Background**

Nowadays we live in an era where group communication is increasingly taking place using virtual tools (Price, 2020). Besides the main motivation to reduce negative impact on the environment (Shujaat, Manzoor, & Nadeem, 2014), the circumstances surrounding Covid-19 became an additional motivation. Business travel has become less prevalent and meetings and conferences are more often taking place virtually whenever possible. With the Covid-19 situation, many companies were stimulated to give virtual meetings and conferences a more powerful position within the organization (Tracy-Taylor, 2020). Many employees and students work and study more often from home, including ESUT Business School, and use the available communication tools to continue the work and studies. Appointments with customers and partners also take place virtually more often (Tracy-Taylor, 2020). Moreover, an increasing number of companies are experimenting with virtual possibilities to hold meetings in order to allow business operations to continue even without coming to the office (Deloitte, 2020).

Professional communication between participants dispersed geographically, temporally and sometimes organizationally has become wide-spread in the last decades due to the rapid development of information and communication technologies (ICT) (Carlson Wagonlit Travel, 2010). Virtual workplaces take a form of virtual offices, laboratories and classrooms (Baskerville and Nandhakumar 2007), in which virtual teams of participants perform interdependent tasks distantly, but with a common goal (Bosch-Sijtsema, 2007). One specific ICT related area to which significant attention has been paid recently encompasses virtual meeting and conferencing technologies. A virtual meeting (VM) is “a synchronous communication mediated by ICT, making it possible for two or more geographically remote people to interact” (Arnalk, 2016), and employs audio- or videoconferencing technologies, or computer-mediated web-conferencing. Through the implementation and integration of these solutions into the organization’s processes, organizations seek to achieve positive effects: cost efficiency, increased collaboration

ABSTRACT

Nowadays we live in an era where group communication is increasingly taking place using virtual tools. The study sought to evaluate the effect of virtual conference on the performance of tertiary institutions in Enugu State. Specifically, it sought to determine the effect Zoom meeting affects productivity in tertiary institutions in Enugu state; to examine effect Google Meet meeting affects quality service delivery in tertiary institutions in Enugu state; and to ascertain the extent Microsoft Teams meeting affects employee commitment in tertiary institutions in Enugu state. Descriptive survey design was employed for the investigation, 1992 academic staff of four higher institutions in Enugu state was engaged in the study. However, using Taro Yamane statistical formula, the population was reduced to a manageable research size of 333. Questionnaire instrument was used to solicit data for the study. The data were analysed to generate results using z-test analysis technique. The findings showed that virtual conference and its studied components positively affected employee performance in tertiary institutions in Enugu state. In a bid to improve performance in the institutions, the paper recommended that employees in tertiary institutions and other organizations should be given routine IT training to update them with new knowledge.

Keywords: *Virtual Conference; Tertiary Institutions; Enugu State*

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between peers and partners, business mobility, improved flexibility for the employees and increased productivity to name a few. In fact, through these internet-enabled means, nations, institutions, businesses and individuals are economically, socially and culturally impacted (Okechukwu, Egbo & Isikuru, 2017).

A major area where companies are being forced to evolve is assessing—and optimizing—the impact of virtual conferences. Virtual meetings that occur over videoconferencing technologies such as Zoom, Google Meet and Microsoft Teams have both unique advantages and disadvantages that companies increasingly will need to weigh moving forward. Virtual organizations allow teams to stay flexible and to position themselves for success in an environment where competition is very high (Mwaniki, 2014). Organizations benefit immensely from the adoption of virtual offices as they are able to source talent from different geographic allocations, minimize travel costs in addition to saving the organization expenditure on office space which has been seen to be on the rise especially in the Nigerian market. Given that organizations are growing geographically and engaging in diverse businesses and alliances, the adoption of virtual offices could be deemed inevitable (Larson, Leung & Mullane, 2017). Okechukwu, Egbo and Isikuru (2017) argue that that necessitates organizations to continue to embrace new ideas like e-governance, e-learning, and of course, e-business.

The COVID-19 pandemic and the resulting stay-at-home orders led to increased use of video conferencing as a means of communicating or holding work meetings. Zoom, for instance, had 10 million daily meeting participants in December 2019, but by April 2020, that number had risen to over 300 million (Evans, 2020). Other video conferencing platforms, such as Google Meet and Microsoft Teams, have also experienced significant increases in daily participants (Peters, 2020; Thorp-Lancaster, 2020). Furthermore, it is likely that the use of videoconferencing will continue long after the pandemic ends, as Gartner predicts that only 25% of business meetings will take place in person by 2024 (Standaert et al., 2021).

Many organizations are now benefiting from harnessing virtual work to increase productivity, efficiency, quality, and reduction in reliance on labour force skills, to give more strength to service strategies and approaches in contemporary industrial workforce. Obviously, the application of modern technology has made it possible to redefine where work is done (Davenport & Pearlson, 1998). Today, many workforces operate in a virtual environment. The proliferation of the virtual team has had a significant impact on managers, who must reconsider traditional management strategies on how to communicate and collaborate effectively, for example in light of the characteristics of remote teams, whose members live in different time zones, rarely or never see one another in person, and communicate primarily via electronic mediums. Because videoconferencing is likely to become the preferred mode for business meetings and working from home may become permanent for many, a greater understanding of the potential challenges caused by videoconferencing is needed. The study therefore examined the effect of virtual conference on the performance of tertiary institutions in Enugu State, Nigeria.

Statement of Problem

Internet technology has been improving rapidly and this has brought with it a lot of opportunities in all spheres of life. Economically, socially and culturally, the internet continues to greatly impact on nations, institutions, businesses and the individual (Okechukwu *et al*, 2017). Today, we continue to embrace new ideas like virtual conference meeting, online-transaction, and of course, e-business among others. The emergence of the virtual environment has progressively enabled businesses and organizations to access skilled employees around the globe. In virtual communication, knowledge-sharing platforms have become ubiquitous within organizations, and have become central to problem-solving in multi-location, geographically dispersed offices.

In this era of rapid globalization and liberalization highly characterized with competitive business environment, the importance of virtual conference cannot be over emphasized. However, the challenging issue of virtual conference has received considerable attention worldwide in recent times. One reason for this is the realization that the quality of virtual conferences affects the performance of individuals, institutions and ultimately that of the economy as a whole. In many tertiary institutions, there is a big doubt as to their level of efficiency and effectiveness without the use of virtual conferences in their various decision-making procedures and operations. Another issue interfacing between virtual conferences and decision-making success in many tertiary institutions in Enugu State, is not knowing which virtual conferencing strategy to employ at every given time. This is because it is not enough to have all the types of virtual conferences in your possession but the right application to it is the key to actualizing and optimizing its resultant effect. That is why one of the issues interrelating between virtual conferencing and decision-making success in tertiary institutions is the poor state of the facilities used for virtual conferences purposes. The cost of acquiring the state-of-the-art ICT facilities for effective virtual conference either for management meeting or for the teaching and learning in the tertiary institution remains a huge challenge. Another issue related to this, is that the

level of mastery and usage of these ICT platform for virtual conference among the staff of the tertiary institutions constitute a serious challenge as many of the likely users (employees) lack the technical know-how on its operation.

Objectives of the Study

The broad objective of the study was to evaluate the effect of virtual conference on the performance of Tertiary Institutions in Enugu state. The specific objectives of the study were to:

- i. Determine the extent Zoom meetings affects productivity in tertiary institutions in Enugu State;
- ii. Examine the extent Google Meet meetings affects quality service delivery in tertiary institutions in Enugu State;
- iii. Ascertain the extent Microsoft Teams meetings affects employee commitment in tertiary institutions in Enugu State.

Research Questions

The following research questions were raised for the study

- i. To what extent does Zoom meeting affect productivity in tertiary institutions in Enugu State?
- ii. To what extent does Google Meet meeting affect quality service delivery in tertiary institutions in Enugu State?
- iii. To what extent has Microsoft Team's meeting affect employee commitment in tertiary institutions in Enugu State?

Statement of Hypotheses

- i. Zoom meeting has no significant positive effect on productivity in tertiary institutions in Enugu State.
- ii. Google Meet meeting do not have a significant positive effect on quality service delivery in tertiary institutions in Enugu State
- iii. Microsoft Teams meeting has no significant positive effect on employee commitment in tertiary institutions in Enugu State.

Significance of the Study

The study is theoretically and empirically significant.

Theoretically, the study will provide insight into the evaluation of the effect of virtual conference on employee performance in organizations. It will add to existing body of literature on virtual conference. It will equally appeal to other scholars and researchers on issues relating to online meetings as the study will serve as a useful information to them in their research work.

Empirically, the study will help the employees of tertiary institutions in Enugu State to understand the need to upgrade their knowledge of virtual technologies to enable them to utilize them in their service delivery.

It will equally benefit academic institutions in Nigeria as the study will showcase areas in which academic institutions should take care of to avoid future damaging effect of complete reliance of in-person meeting. This was the unfortunate lesson from the Covid-19 pandemic. It will also help to spur academic and research institutions to intensify research on finding the best virtual technology that suits their institutions perfectly well.

Scope of the Study

The unit scope of the study focused on the evaluation of the effect of virtual conference on performance of tertiary institutions in Enugu state. The content scope covered the discovery of the extent Zoom, Google Meet and Microsoft Teams affected productivity, quality service delivery and employee commitment of tertiary institutions in Enugu state. The geographical scope is the Enugu State University of Science and Technology (ESUT), the University of Nigeria Enugu Campus, Institute of Management and Technology (IMT), and Enugu State College of Education (Technical), Enugu. The time scope was 2019 to 2022.

Conceptual Review

Virtual Conference

Conferences generally are seen as very important part of working life and considered as a significant means of creating and maintaining work routines in a workplace (Räsänen, et al., 2010). Schwartzman (1989) defines a conference as “a gathering of three or more people who agree to assemble for a purpose ostensibly related to the functioning of an organization or group”. Business conference is a central activity in post-bureaucratic organizations independently of number of branches, size and nationality (Denstadli, Julsrud & Hjorthol, 2012). Meetings conducted using ICT, such as audio, video, email, or text-transmission, are referred to as virtual meetings or conferences and include participants and employees located in different areas (Lindeblad, 2012). The concept of video-conferences originated from the 1960s and the primary users were large organizations and according to a study conducted during the '70s, these virtual conferences could be executed without any loss of effectiveness (Egido, 1988; Rayler, 2010).

Videoconferencing is usually associated with in-house room-based conference, and considered as the most widely used form of VC in European and U.S. businesses (Denstadli *et al.*, 2013). However, VC can be arranged on different technical platforms ranging from cheaper solutions to technically advanced rooms for large multiparty conferences. For example, *desktop-based videoconferencing* solution is very flexible and permits users to meet with distant partners, clients and colleagues from their personal desktop computer either in the office, home or on the go (Cisco, 2014; Polycom, 2013,).

Today's technology bring high-definition video and high quality of sound to the desktop solutions allowing busy professionals spontaneously contact other geographically separated team members or clients. *Mobile videoconferencing* solutions allow remote partners to arrange real time meetings with mobile devices, like smart phones and tablets anywhere on the globe (Lifesize, 2014). This collaboration application allows users to extend video conferences beyond the room-based settings.

Another type of video conferencing solutions is *web conferencing*, allowing multiple computer users with Internet connection to see and share their screen with one another (Cisco WebEx, 2014). This solution permits to arrange meetings and seminars, online workshops and make slideshow presentations. Telepresence is quite a new platform and more technically advanced form of video conferencing. The term refers to a set of technologies, such as cinema-quality audio and video, which give users the appearance of being “fully present” in the same room with other distant participants (Polycom, 2014). This solution provides opportunities for multiparty online meetings and serves as collaboration tool for team members who are physically dispersed. In addition, telepresence solutions enable sharing of documents and presentations as well as different multimedia content.

In this seminar paper the term virtual meeting/conference will be used for contexts where distant meeting is arranged with the help of different technologies like Zoom, Cloud solutions or platforms, Google Meet and Microsoft Teams.

Zoom

Zoom is an aspect of virtual conference. It combines video conferencing, online meetings and in-conference group chat into one easy-to-use tool that is ideal for online group work. It works by an administrator sharing a URL to members to join an online Zoom meeting. Zoom can host up to 100 participants for up to two hours duration (Learning Technologies Center, 2018).

Google Meet

This is an enterprise video-conferencing service from Google that supports chat, one-on-one video calls and group video meetings. It enables people to join virtual meetings via audio, video, chat, and screen sharing with up to 100 people with no time limits. Users of Google Meet can chat with other participants, share videos, presentations, and slides from their desktop in real-time, as well as stream live events (TechRepublic, 2021). Google Meet has enhanced video meetings around the world.

Microsoft Teams

Microsoft Teams is a cloud-based team collaboration system that is part of the Office 365 suite of applications (Aberystwyth University, 2022). The core capabilities of Microsoft Teams include business meetings, calling, video meetings and file sharing. It is a virtual conferencing technology that allows teams to work together in one place even when apart. It is used therefore to arrange online meetings, planning projects, keeping track of tasks, communication, collaboration on documents and sharing information (Aberystwyth University, 2022).

Performance

Performance is defined as how an employee fulfils their job duties and executes their required tasks. It refers to the effectiveness, quality, and efficiency of their output. Performance also contributes to our assessment of how valuable an employee is to the organization. Each employee is a serious investment for a company, so the return that each employee provides must be significant. Performance is defined as the record of outcomes produced on a specified job function or activity during a specified time period (Bernadrin & Russel, 2009; Mbah, & Ajagu, 2020). According to this definition performance is set of outcomes produced during a certain time period. Hence, researchers have developed the working definition of employee performance for study purpose and that is, "achievement of targets of the tasks assigned to employees within particular period of time". Performance is not only related to the action but also involves judgment and evaluation process (Ilgen and Schneider, 2011). In this study, performance was measured in terms of productivity, service delivery and employee commitment.

Productivity

Productivity is the amount of output produced in a certain period while having some factors as inputs. Many factors can measure productivity based on this (Nwelih and Amadin, 2008; Ene & Ugwu, 2022). For example, according to Bhatti, productivity is a big performance measure umbrella that comprises a lot of factors under it which makes it difficult to measure with traditional methods (Bhatti and Qureshi, 2007). Employees are motivated when their work is meaningful and satisfy them in terms of increasing their skills and knowledge (Srivatsava and Kailash, 2011). Additionally, Andries also discussed that employees must have the motivation to improve their development aspects in terms of being competent to learn new things. This means that organizations also should facilitate different training programs for their employees to deepen their analytical and cognitive thinking competency (Andries and Jan, 2012)

Service Delivery

Ogonu (2020) postulates that service delivery is a major need for any organization. The author states that it is a process of getting services done as effectively and as quickly as possible to intended recipients. Service delivery is a component of business or endeavour that defines the interaction between providers and clients where the provider offers a service and the client either finds value or loses value as a result (Ogonu,2020). Good service delivery therefore provides recipients with an increase in value (Ogonu, 2020). Egugbo (2020) relating service delivery strictly to public sector organizations states that there is a contractual relationship between the public and the service provider (government agency). This contractual relationship obliges the service provider to render services to the public in most satisfactory way, be in terms of utility, quality, convenience, timelines, cost, courtesy, communication, etc (Egugbo, 2020; Mbah, & Diele,2020).

Employee Commitment

Employee commitment simply means the degree to which the employee feels devoted to their organization (Meyer & Elyse, 2010). It is also seen as the degree to which employees devote themselves to the organization in terms of sense of belonging and being ready to accept challenges (Tzafrir& Baruch, 2005). Employee commitment is an indispensable element in organizations (Timoti, 2020). Organizations rely on committed employees to create and sustain competitive advantage and performance (Akintayo, 2010). In that regard, commitment ensures performance. In a changing world of business, employee commitment is a sine qua non for effective performance of organizational members and their organizations (Andrew, 2017). Any organization that desires to increase performance and efficiency must promote commitment of employees (Gul, 2015; Ede, & Mbah, 2020).

Theoretical Framework

The Affective Event Theory (AET)

The Affective Event Theory (AET) was developed by Weiss and Cropanzano (1996). The theory was designed to explain the cause and results of affective experiences at work. According to this theory, workers' feelings and emotions at workplace events largely determine work-related outcomes. The framework suggests that certain events in workplace are as a result of work environment features. These events, according to Weiss and Cropanzano, stimulate different affective reactions, which in turn, influence employees' attitudes and behaviours. The Affective Event theory, though does not state the work environment features or work events that stimulate different affective reactions, literature has provided some clues that human resource practices have a positive relationship link with affective reaction (Mostafa, 2017). Fisher (2002) identifies achievement, recognition, information sharing, advance/growth, and feedback as the most common events to which employees attribute positive affective reactions. In the work of Wegge, et al. (2006), perception of employees' organization practices

and policies such as opportunity for participation, supervisory support and concern for welfare, is positively related to positive affective reactions.

Affective Event Theory is relevant to this study because the recognition and information sharing to enhance the effectiveness of virtual team will be operationalized as events that need to be invested in the organization so as to attain project performance. It is believed that if members of virtual team perceived that the organization is interested in improving their well-being and capacities, they may likely be motivated and show positive behaviour and this may lead to positive performance.

Empirical Review

Zoom Meeting and Productivity

Okechukwu, Egbo & Isikuru (2017) examined the effect of Virtual Management on Employee Performance in Selected E-Business Firms in Lagos State, Nigeria. The study adopted the survey design. Data collected were analysed using simple linear regression analysis and the analysis of variance (ANOVA), at 5% profitability level of significance. The findings revealed that: Virtual communication had a significant positive effect on employees' effectiveness in selected e-commerce firms in Lagos State, Nigeria. Virtual collaboration significantly affected employees' productivity in selected e-commerce firms in Lagos State, Nigeria. From the findings of this study, therefore, it was concluded that, virtual management is a good tool for reducing the overhead cost in selected e-commerce firms in Lagos State, Nigeria.

Amber (2021) focused on examining Presence on Group Communication Quality, Performance and Satisfaction in Communication Environments. By using a within-subject design, random noise such as participant's characteristics, intelligence, and/or relationships could be minimized. In order to test the hypotheses, a One-way Repeated Measures analysis of variance (ANOVA) and Multivariate regression was conducted. The findings of this study suggest that telepresence has a negative impact on effectiveness, clarity and promptness in group communication. In addition, it indirectly contributes negatively to satisfaction.

Karl, Peluchette and Aghakhani (2021) explored the Virtual Work Meetings during the COVID-19 Pandemic: The Good, Bad, and Ugly. Using a text-mining process and qualitative content analysis of 549 comments posted to a LinkedIn online discussion board, they identified six key themes; three were tied to camera and microphone issues, two involved eating and meeting management issues, and one dealt with work-from-home issues. These themes are discussed in relationship to media naturalness theory and meeting science. Because widespread use of videoconferencing will likely continue, they provided guidance for workplace policies/practices and suggested directions for future research.

Bestman and Iniye (2022) examined the relationship between virtual communication and organizational responsiveness of indigenous oil and gas companies in Rivers State. The study utilized a cross-sectional research survey design. The hypotheses were tested using the Spearman's Rank Order Correlation Statistics. The findings revealed that there is a significant relationship between virtual communication and organizational responsiveness of indigenous oil and gas companies in Rivers State. The study thus concluded that the adoption of virtual communication in indigenous oil and gas companies in Rivers State positively enhances organizational responsiveness.

Google Meet Meeting and Quality Service Delivery

Ott and Nagateja (2020) examined the influence of knowledge sharing and virtual teams on employee productivity: A case study in a financial institution. The triangulation method was used where quantitative data is collected by a questionnaire and qualitative data through interviews. The analysis is based on a multiple hierarchical regression to have more control over the variables. The analysis results show that both virtual teams and knowledge sharing have a positive effect on productivity and are likely to increase employee's productivity. However, some of the dimensions seem to be affecting the productivity much more than others and the organizations should prioritize their focus on those.

Obrovac, Persson & Åberg (2020) examined the effects of tech no stress through virtual meetings on employee-level. In order to conduct this research, a research design was developed in accordance with the field of research chosen to further investigate. This is a descriptive design with a deductive quantitative approach. This research concludes that a majority of the hypotheses are accurate and that tech no stress, does impact employees through virtual meetings in a negative way. The respondents felt that virtual meetings do in fact decrease their ability to obtain a healthy work-life balance, psychological well-being, and an effective standard.

Nwinyokpugi and Amachree (2020) studied on Decision Making Success; The Thrust of Virtual Meetings in the Nigeria Banking Sector. This descriptive research adopted a cross-sectional survey approach in investigating a homogeneously characterized section of the sector in Port Harcourt, Rivers State, Nigeria. Data collected were tested and analysed using the Spearman's Rank Order Correlation Coefficient statistic and presented for clarity using the SPSS. Findings revealed the moderating effect of technology for virtual meetings and decision-making success in the industry studied. Also, significant relationships exist between the different dimensions of virtual meetings and measures of decision-making success in the banking sector and therefore recommendations were made in support of their adoption.

Microsoft Teams Meeting and Employee Commitment

Don-Baridam & Akpan (2021) focused on Virtual Collaboration and Team Effectiveness: Lessons from Covid-19 Lockdown. The study employed a survey research design. Regression analysis was used to test hypotheses. Results showed that virtual collaboration had strong positive significant relationship with team effectiveness. Hence, the study concluded that virtual collaboration has positive relationship with team effectiveness (cohesiveness, and goal attainment) and thus recommends that firms should give more attention to virtual collaboration to facilitate employee's performance and boost team effectiveness.

Georgewill (2021) examined The Moderating Role of Organizational Structure on Relationship between Workforce Analytic and Organizational Competence of GSM Telecommunication Firms in Nigeria. The design for the study was the cross-sectional survey research. The Spearman Rank Order Correlation Coefficient was used in testing for the bivariate hypotheses while the partial correlation was adopted. The results from the analysis revealed that there is a significant relationship workforce analytic and organizational competence of GSM telecommunication firms in Nigeria. Similarly, the study affirms that the process of standardization of the organization plays a critical and well evident role in ensuring that workforce analytic results in competence of GSM telecommunication firms in Nigeria.

Olaniyi (2022) explored the Effects of Teleworking on Team Performance: Evidence from the Nigerian Public Sector. The study adopted survey research design. The data was analysed through descriptive statistics and multiple regression analysis are undertaken to determine the effect of teleworking on team performance. The statistical tests conducted reveal a significant relationship between remote work and team performance. Findings also show there is significant relationship between team communication and team performance in the Nigerian public sector.

Gap in Empirical Review

From the empirical literature reviewed, we can see that most of the studies were done outside Nigeria as it relates to virtual conference meeting. From the review, none of the studies focused on virtual conference and performance of tertiary institutions in Enugu State. The study therefore filled that gap.

Methodology

Research Design

The study employed a descriptive survey design. This design is one in which a group of people or items is studied by collecting and analysing data from a few people or items considered to be representative of the entire group. This research design was complemented with qualitative research method.

Area of the Study

The study was conducted in four higher institutions in Enugu State. The Institute of Management and Technology (IMT), Enugu, Enugu State University of Science and Technology (ESUT), the University of Nigeria, Enugu Campus, and the Enugu State College of Education (Technical).

Sources of Data

Data for the study was collected mainly through the primary and secondary sources. Primary data were collected through the use of structured questionnaire, while secondary data were collected through published literature.

Population of the Study

The population of the study includes all the academic employees of the four schools under study. The target population of the study was 1992.

Table 1: Population Distribution of Academic Staff

<i>Institutions</i>	<i>Population</i>
IMT	520
ESUT	691
UNEC	550
ESET	231
Total	1992

Source: Academic Planning Department (2023)

Determination of Sample Size

In determining the sample size, the researcher used Taro Yamane formula (1967) of sample size determination as follows:

$$\text{The formula } n = \frac{N}{1 + N e^2}$$

Where:

N = population, 1 = constant, E = Degree of error (i.e. 5% or 0.05)

The sample size is computed thus:

$$n = \frac{1992}{1 + 1992 (0.05)^2}$$

$$n = \frac{1992}{5.98} = 333.11$$

n = approximately 333

Therefore, the sample size is 333.

Sampling Technique

Purposive sampling technique was used in selecting the respondents who were useful to this study. Thus, the 333 participants were made of academic staff that was selected based on their knowledge of the subject matter, and their ability to access, understand and respond to internet-based messaging.

Method of Data Collection

The instrument used for data collection was questionnaire. The questionnaire instrument was in a 5-point Likert scale structured form. The questionnaire items were drawn from the objectives, research questions and hypotheses developed for the study.

Validity of the Instrument

The contents of the questionnaire were validated by experts in the field of measurement and evaluation. The researcher therefore claimed the validity of the instrument.

Reliability of the Instrument

The researcher pre-tested (20) copies of the test instrument before the actual study. The response that was obtained from the pre-study was subjected to Cronbach Alpha's internal consistency test by using SPSS (statistical package for social sciences). That indicated that the items on the questionnaire were internally consistent and reliable.

Method of Data Analysis

The collected data for the study was analysed through the use mean score. The z-test analysis technique was applied in testing the hypotheses.

Data Presentation

The data to be presented and analysed is based on findings extracted from the questionnaire distributed to the staffs of the selected tertiary institutions. The researcher distributed three hundred and thirty-three (333) copies of questionnaire to the staffs and all the copies were properly filled and found relevant for the study.

Data Analysis

Research Question One: To what extent does Zoom meeting affect employee productivity in Tertiary Institutions in Enugu State?

Table 2: Extent Zoom affects employee productivity in Tertiary Institutions in Enugu State

S/N	Statement	VHE	HE	UD	LE	VLE	Mean	Decision
1	Zoom reduces employee stress level and increases work output	118 (39.3%)	94 31.3%	20 (6.7%)	94 31.3%	21 70%	3.80	Accepted
2	Employees work productivity has increased with the use of Zoom	104 34.7%	90 (30.0%)	20 6.7%	52 17.3%	34 11.3%	3.60	Accepted
3	Employees work quality has increased with the use of Zoom	68 22.7%	124 41.3%	7 2.3%	73 24.3%	28 9.3%	3.44	Accepted
4	Employees participate and are well-informed at their workplace due to the use of Zoom	93 3.10%	100 33.3%	-	80 26.7%	27 9.0%	3.51	Accepted
5	Employee who participate in Zoom meetings improve their organizational output	116 38.7%	99 33.0%	-	14 4.7%	71 21.7%	3.87	Accepted
Grand Mean							3.64	

Source: Field Survey, 2023

Table 2 is assumed to be indicative responses on the extent Zoom meetings affect employee productivity in Tertiary Institutions in Enugu State with mean score of above 3.0. From the table, we can see that all the items in the table were accepted. The grand mean score of 3.64 is a strong indication that the respondents affirmed that Zoom meeting increases employee productivity in Tertiary Institutions in Enugu State.

Research Question Two: To what extent does Google Meet meeting affect quality service delivery in Tertiary Institutions in Enugu State?

Table 3: Extent Google Meet affects quality service delivery in Tertiary Institutions in Enugu State

S/N	Options	VHE	HE	UD	LE	VLE	Mean	Decision
1	Google Meet enables employees to provide novel solutions to organizational challenges	134 44.7%	137 45.7%	14 4.7%	15 5.0%	-	4.25	Accepted
2	It helps the employees to be more resourceful in performing their functions	96 32%	120 40%	-	68 22.7%	16 5.3%	3.51	Accepted
3	Google Meet helps to avoid employee travel distance thereby giving them the opportunity to deliver on their assigned duties	102 34%	121 40.3%	14 4.7%	56 18.7%	7 2.3%	3.85	Accepted
4	It prepares the employee with technical know-how to deliver on their job anywhere, anytime	118 39.3%	112 37.3%	14 4.7%	37 12.3%	19 6.3%	3.91	Accepted
5	Google Meet offers the employees the necessary tool to adapt to environmental changes to perform their functions	58 19.3%	180 60%	20 6.7%	28 9.3%	14 4.7%	3.80	Accepted
Grand Mean							3.91	

Source: Field Survey, 2023

Table 3 is assumed to be indicative responses on the extent Google Meet meetings affect quality service delivery in Tertiary Institutions in Enugu State with mean score of above 3.0. With regards to items, the respondents all agreed that Google Meet meeting enables employees to deliver quality service in their respective institutions.

Research Question Three: To what extent does Microsoft Team meeting affect employee commitment in Tertiary Institutions in Enugu State?

Table 4: The extent to which Microsoft Team meeting affects employee commitment in Tertiary Institutions in Enugu State

S/N		VHE	HE	UD	LE	VLE	Mean	Decision
1	Microsoft Teams helps the employee to be more creative in carrying out their functions	118 39.3%	97 32.3%	16 5.3%	45 15.0	24 8.0%	3.80	Accepted
2	Microsoft Teams supports employees for improved job commitment	118 39.8%	94 31.3%	20 6.7%	47 15.7%	21 7%	3.80	Accepted
3	It helps to improve on employee capacity to attend to management directives	104 34.7%	90 30%	20 6.7%	52 17.3%	34 11.3%	3.60	Accepted
4	Microsoft Teams challenges the employees to be more innovative in performing their functions	68 22.7%	124 41.3%	7 2.3%	73 24.3	28 9.3%	3.43	Accepted
5	It helps the employee to see the management determination in realizing organizational goals	93 31%	100 33.3%	-	80 26.7%	27 9%	3.51	Accepted
Grand Mean							3.57	

Source: Field Survey, 2023

Table 4 is assumed to be indicative responses on the extent to which Microsoft Teams affect employee commitment in Tertiary Institutions in Enugu State with mean score of above 3.0.

The items listed in the table were found to be positive in all standards. The grand mean score of 3.57 affirmed that Google Meet meetings increase employee commitment to work in Tertiary Institutions in Enugu State.

Test of Hypotheses

The hypotheses were tested using z-normal distribution (z-test).

Test of Hypothesis One

Restatement of Hypothesis One

H0: Zoom meeting has no significant positive effect on employee productivity in Tertiary Institutions in Enugu State.

Table 5: Normalizes z-score for mean responses

S/N		N	Mean	Std. Deviation	z-score	Z _{0.05}	Decision rule for hypothesis
1	Zoom reduces employee stress level and increases work output	30	3.9	0.359	33.38	2.33	Accepted

Source: Author's compilation SPSS 23.0 Output

From table 5, the z-score for the responses to the questionnaire items are computed and juxtaposed with the z-table value of ± 2.33 at 2% significance level. The analysis indicates that the proposition that Zoom meeting relates with employee productivity in Tertiary Institutions in Enugu State is significantly high is accepted at 2% significance level as the computed; z value of 33.38 exceeds the table value of ± 2.33 .

Decision: As seen from Table 5 and the subsequent analysis of result, the computed Z-scores for the statements exceeded the table z value of ± 2.33 , at 2% significance level. Therefore, we reject the null hypothesis and accept that Zoom meeting has a significant positive effect on employee productivity in Tertiary Institutions in Enugu State.

Hypothesis Two

Restatement of Hypothesis Two

H0: Google Meet meeting does not have a significant positive effect on quality service delivery in Tertiary Institutions in Enugu State

Table 6: Normalizes z-score for mean responses

S/ N		N	Mea n	Std. Deviation	z- score	Z _{0.05}	Decision rule for hypothesis
1	Google Meet enables employees to provide novel solutions to organizational challenges	300	3.77 5	0.6924	36.30	2.33	Accepted

Source: Author's compilation SPSS 23.0 Output

From table 6, the z-score for the responses to the questionnaire items are computed and juxtaposed with the z-table value of ± 2.33 at 2% significance level. The analysis indicates that the proposition that Google Meet meeting enables employees to provide novel solutions to organizational challenges was accepted at 2% significance level as the computed; z value of 36.30 exceeded the table value of ± 2.33 .

Decision: As seen from Table 6 and the subsequent analysis of result, the computed Z-scores (36.30) for the statements exceeded the table z value of ± 2.33 , at 2% significance level. Therefore, we reject the null hypothesis and accept that Google Meet meeting do have a significant positive effect on quality service delivery in Tertiary Institutions in Enugu State.

Hypothesis Three

Restatement of Hypothesis Three

H0: Microsoft Teams has no significant positive effect on employee commitment in Tertiary Institutions in Enugu State.

Table 7: Normalizes z-score for mean responses

S/N		N	Mea n	Std. Deviation	z- score	Z _{0.05}	Decision rule for hypothesis
1	Microsoft Teams enhance improved job commitment	300	3.85	0.480	33.07	2.33	Accepted

Source: Author's compilation SPSS 22.0 Output

From table 7, the z-score for the responses to the questionnaire items are computed and juxtaposed with the z-table value of ± 2.33 at 2% significance level. The analysis indicates that the proposition that Microsoft Team meetings improve job commitment is accepted at 2% significance level as the computed; z value of 33.07 exceeded the table value of ± 2.33 .

Decision: As seen from Table7 and the subsequent analysis of result, the computed Z-scores (33.07) for the statements exceeded the table z value of ± 2.33 , at 2% significance level. Therefore, we reject the null hypothesis and accept that Microsoft Team meeting has a significant positive effect on employee commitment in Tertiary Institutions in Enugu State.

Discussion of Findings

The result of hypothesis one showed that Zoom meeting has a significant positive effect on employee productivity in Tertiary Institutions in Enugu State. This is where; z value of 36.30 exceeded the table value of ± 2.33 . This result is in agreement with table 2 where the respondents affirmed that Zoom meeting reduces their stress level and increase their work output. Those employees who experienced increased work productivity have increased with the use of virtual conferencing. There is a strong affirmation that employees who experience improved work quality have increased with the use of VC. It is well established that employees participate and are well-informed at their workplace due to the use of VC and that employees who participate in Zoom communication improve their organizational productivity.

The result of hypothesis two revealed that Google Meet meeting do have a significant positive effect on quality service delivery in Tertiary Institutions in Enugu State. This is evident from the fact that the computed Z-scores (36.30) for the statements exceeded the table z value of ± 2.33 , at 2% significance level. The finding is supported by data obtained in table 3 where the respondents insisted that Google Meet meetings enables employees to provide novel solutions to organizational challenges, that it helps employees to be more resourceful in performing their functions. It is equally clear that Google Meet meeting helps to do away with employee travels, thereby giving them the opportunity to deliver on their assigned duties. It is a known fact that it prepares the employees with technical

know-how to deliver on their job anywhere, anytime and that Google Meet meeting offers employees the necessary tool to adapt to environmental changes to perform their functions.

Lastly, the result of hypothesis three indicated that Microsoft Teams meeting has a significant positive effect on employee commitment in tertiary institutions in Enugu State. This is where z value of 33.07 exceeded the table value of ± 2.33 .

The finding further affirms the opinion of the respondents in table 4 where the respondents agree that Microsoft Team meeting helps employees to be more creative in carrying out their functions. It further noted that Microsoft Team meetings enhance improved job commitment, and helps to improve employee capacity to attend to management directives. The finding supported the fact that Microsoft Teams meetings challenges employees to be more innovative in performing their functions and helps employees to see the management determination in realizing their organizational goals.

Summary of Findings

The findings were summarized thus:

- i. Zoom meeting has a significant positive effect on employee productivity in Tertiary Institutions in Enugu State. This affirms that Zoom technology meeting reduces employees stress levels and increases work output.
- ii. Google Meet meeting has a significant positive effect on quality service delivery in Tertiary Institutions in Enugu State. This indicated that Google Meet meeting enables employees to provide novel solutions to organizational challenges.
- iii. Lastly, Microsoft Teams meeting has a significant positive effect on employee commitment in tertiary institutions in Enugu State. This suggests that Microsoft Teams meeting enhances and improves job commitment of employees.

Conclusion

From the findings, it can be concluded that virtual conference affected employee performance in Tertiary Institutions in Enugu State. Employees' productivity, quality of service and commitment was improved with the emergence and use of virtual conference meetings. The study further revealed that using tools such as Zoom, Google Meet and Microsoft Teams, enhance productivity, quality of service and commitment of employees. Virtual conference therefore provides quick, smooth and interruption free meetings leading to a faster decision-making process in Tertiary Institutions, and as well improves innovation especially in this era of globalization and technological advancement.

Recommendations

- i. The adoption of any type of virtual conference technique in organizations must be compliant with global, legal and other regulatory standard or requirements. Every organization must identify a suitable virtual meeting tool for specific meeting purposes so as to ensure employee productivity.
- ii. Employees in tertiary institutions should be given routine IT training, so as to favourably prepare them against the severity of its security challenges and remain updated with new knowledge. Virtual conferencing should be encouraged to get all members involved and the process appreciated.
- iii. Virtual conferencing should be encouraged for easier and fast real-time communication and address time bound decisions as quickly as possible. This will enable educational institutions to achieve their programs effectively and not left behind in academic calendar in the country.

Contribution to Knowledge

The major contribution made by the study was that it showed that employee's productivity, service delivery and commitment to work was improved with the emergence of virtual conference meeting in Tertiary Institutions in Enugu State. The study also provided empirical evidence that would aid public organizations and policy formulators in improving organizational performance through virtual conferencing. The study also contributed from a methodological perspective, by offering a measurement scale and planning for virtual conference in organizations.

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