

Modern Communication Technology and Performance of Oil and Gas Companies in South- South Nigeria

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ABSTRACT

The management of organizations depends majorly on effective communication. It is worthy of note that low productivity, loss of customers, low turnover, conflict, and absenteeism are caused by poor and ineffective communication in business organization. This study was designed to examine modern communication technology and performance of Oil and Gas companies in South-South, The study adopted a survey research design. The target population of the study comprise of 33101 respondents who are staff in 102 Oil and Gas companies in South-South, Nigeria. Taro Yamane formula was used to derive a sample of 395 respondents. Three hundred and seventy four (94.68%) out of 395 copies of instruments distributed were duly returned. Data was collected from respondents using structured questionnaire and presented using descriptive statistics. The instrument for data collection was duly subjected to face and content validity while Cronbach Alpha statistics was used to determine the reliability of the instrument and coefficient of 0.713 was obtained which made instrument suitable for the study. Pearson Product Moment Correlations was used to test the hypotheses. The results of the analysis revealed that Smart phones and Email & Internet have a major role to play in the performance of oil and gas companies in south-south Nigeria. The study recommended among others that there should be strict implementations of use of Smart phones and Email & and Internet between management and Employees of oil and gas companies in South-South Nigeria.

Keywords: Smart phone, Email & Internet, productivity, profitability, communication, Business and Organization.

I. INTRODUCTION

The management of organizations depends majorly on effective communication. It is worthy of note that low productivity, loss of customers, low turnover, conflict, and absenteeism are caused by poor and ineffective communication in business organization. This is to say that effective communication is the life wire of any organization and also the turning point which the wheel of an organization rotates. It is a means by which behavior is modified, change is effected, performance improved and goals and objectives are achieved. So irrespective of organization, its size and purpose, transfer of understanding from one person to another is viewed essential for the continued growth, survival and existence of an organization.

According to Chand (2014) Effective communication is a basis prerequisite for the attainment of organizational goals; and no organization, or group can exist without communication. Communication is effective when the recipient of a message understands its meaning and can express that meaning back to the speaker or sender of the message (American Management Association). Communication is therefore a foundation stone upon which other activities and functions of the organization depends. Group activity is impossible without communication. This is because without it, co-ordination and change cannot be affected. Thus, to ensure that such activities and functions run effectively, an organization has to develop an effective communication irrespective of the type of organization. Communication, the exchange of ideas, has become faster, easier, and more efficient due to modern communication technology.

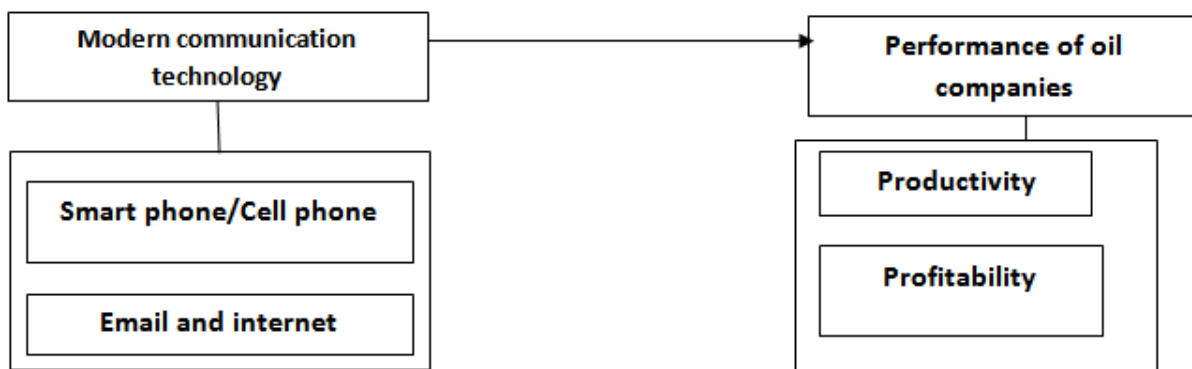
Technology changes so quickly that new communication devices are being invented and improved all the time (Skwirk.com.au, 2014).

Smart phones and Email & Internet examples of modern communication technology on how we communicate with one another are vast and varied, with both negative and positive impacts for our business and personnel lives. The purpose of this paper is to examine these modern communication technologies with a view to how it impacts on the organizational performance.

1.1 Conceptual Framework

The two key variables are modern communication technology and performance of oil companies in Niger Delta (predictor variable, and the criterion variable), and how they relate, gave rise to the conceptual framework of this study. These variables and the relationships implied in this paper therefore constitute the operational framework below:

Figure (I) showing the relationship between modern communication technology and performance of oil companies in Niger Delta performance



Source; desk research 2022

1.2 The purpose of the study

The purpose of this study therefore is to determine the following

1. To determine the effect of smart phone on performance of oil companies
2. To determine the effect of email and internet on performance of oil companies

1.3 Research questions

This study will be guided by the following research questions:

1. To what extent does smart phone affect productivity?
2. To what extent does smart phone affect profitability?
3. To what extent does email and internet affect profitability?
4. To what extent does email and internet affect productivity?

1.4 RESEARCH HYPOTHESIS

From the research questions raised for the study, we further hypothesize as follows:

Ho1: There is significant relationship between smart phone affect and productivity

Ho2: There is significant relationship between email and internet and profitability

1.5 LITERATURE REVIEW

Cell phones have become so much a part of our everyday lives that they have a significant impact on places of work and the business environment. The rapid adoption of smartphones has made it easier to reach customers on the go, using websites designed for mobile platforms and mobile commerce apps. Your small business can develop an app that presents the potential customer with a mobile commerce storefront, just like major companies such as eBay or Amazon. Such apps provide a convenient shopping cart and payment method with direct access to your retail store. GPS-enabled apps make it simple for customers to find restaurants, gas stations and other businesses through local search

Business systems can now leverage the power of mobile smartphones to affect long distance business conferences, keep track of field staff, make sales quickly and efficiently, and lower their operating costs

Smart Phones

A smart phone is a mobile phone with advanced computing capability and connectivity than the normal phones. Smart phones typically include the features of a phone with those of

another popular consumer device, such as a personal digital assistant, a media player, a digital camera etc., also smart phone is a device that lets you make telephone calls, but also features that, in the past, you would have found only on a personal digital assistant or a computer – such as the ability to send and receive e-mail and edit office document. Smart phones can combine a cell phone with a hand-held computer, typically offering internet access, data storage, email capability, etc. A smart phone combines cellular telephone, internet access for email and web, music and movie player, camera and camcorder, GPS navigation system and a voice search for asking a question about anything (pcmag.com, 2022).

According to Pitichat, Thiraput (2013) Smartphones help improve relationships with peers as well as superiors. As previously mentioned, Smartphone users tend to disconnect with people in their real lives (Bozeman, 2011). Similarly in a workplace, Smartphone usage distracts employees from information at meetings, and also annoys others (Ebelhar, 2009).

Smartphone expands knowledge sharing. Every single company needs to work on a flow of information and knowledge in order to develop their employees to make them more productive. With the integration between Smartphone and social network applications, people can share their information and knowledge easily, “Internal social networks have also experienced a rise in popularity, offering employees and managers a knowledge-share opportunity and a virtual collaboration platform that keeps e-mail inboxes from being overwhelmed” (Miller-Merrell, 2012). One of the most effective and popular tools for knowledge sharing is known as “Cloud computing” (Anderson, 2010), which is a sharing site hosted by other companies such as a social-sharing site like Facebook, a video-sharing site like Youtube, a document-sharing like GoogleDocs, (Anderson, 2010).

Though we have some great benefit of smart phone in workplace some scholars still there are research that shows the Smartphone phenomenon has negative impacts on workplaces (Bozeman, 2011; Ebelhar, 2009; Rush, 2011; Smith, 2012; The Economist, 2012). According to Pitichat, Thiraput (2013) The main concern is that excessive use of Smartphones can lead to addiction, which has a negative effect at work in terms of lowering productivity.

The Smartphone is connected to peoples’ lives; it becomes a part of daily life. Smartphone users are obsessed with their Smartphones. For this reason, some researchers or managers claim that

employees do not fully use their time and attention into their work, but they focus more on their Smartphones, which can harm productivity. Besides, excessive use of Smartphones separates people from realities.

People tend to have their Smartphones in their hands all the time. They bring Smartphones to a party or social event and use them as tools for avoiding socializing with others, or when they use their Smartphones, they totally ignore people nearby them (Bozeman, 2011). Smartphones can make employees stress out. When employees use their Smartphones to work on their projects from their work, sometimes they bring stress from their workplaces into their private lives at home, so they cannot separate their work from their non-work lives (The Economist, 2012).

Email and Internet

The growing needs for communication imply a higher level of and a more intense exchange of knowledge, which also implies a higher level of and a more intense information exchange (Mano & Mesch, 2010). The process of information exchange has been facilitated by the use of e-mail. The quick access to new and up-to-date news, procedures, tools and notifications, contributes to a greater reliance on e-mail. The easy access to the information flow enabled by e-mail has led to consider it as an important tool to increase work performance.

Email system has proven that with a right usage, it is useful and creates high productivity at work, rather than ruins productivity (Jackson, Dawson, & Wilson, 2003). Researchers who have studied the email phenomenon claim, “The implication for managers in other organizations is that if their own employees handle email this way they would also benefit in terms of employee productivity despite regular email interruptions” (Jackson, Dawson, & Wilson, 2003, p.84). Similarly, with Smartphone, CEOs or managers should not make a policy to prohibit their employees from using a Smartphone. It is almost impossible to ban Smartphones from a workplace, so leaders in companies have to think about how they can manage this issue in order to bring their companies up to the environment that they want. Instead of, punishing their employees who use Smartphones in the workplace as private devices, why do not managers reward their employees for using Smartphones for the purpose of work? They could give their employees a full functional usage of Smartphones by building a framework or trying to lead them to the way that a company can benefit from them. (Pitichat, Thiraput 2013)

Internet, on the other hand, is a means of connecting a computer to any other computer anywhere in the world via dedicated routes and servers (businessdictionary.com, 2014). According to Wikipedia.org (2022), the internet is a global system of interconnected computer networks that use the standard internet protocol suite to link several billion devices worldwide. The advantages and disadvantages derivable from the usage of the internet are enormous. According to buzzle.com (2022), the advantages of the internet are that it provides faster communication; abundant information resources; inexhaustible education; entertainment for everyone; social networking and staying connected; online services and e-commerce. Some of the disadvantages, according to them, include theft of personal information; spamming; malware threats; age-inappropriate content; social isolation, obesity, and depression.

1.6 METHODOLOGY

The study adopted survey research design because the design elicits relevant data from sampled respondents that aided in analysis of data. Pearson Product Moment Correlation was employed in the analysis to establish the magnitude and directions of relationship that exists between the variables of the study.

Population of the Study

The populations of this study were employees of Oil and Gas companies in South-South Nigeria who are PENGASSAN and NUPENG members. The population is 33,101 employees in 102 Oil and Gas companies in South-South Nigeria.

Sampling and sample size determination

Stratified random sampling technique was employed to divide the employees into two

categories: senior level and junior level. Senior level represents Strata A, junior level represents Strata B.

Bowleys proportional allocation formula was used to select an appropriate proportion from each of the segments. Taro Yamane formula was used to derive a sample of 395 respondents.

Taro Yamane's formula: $n = \frac{N}{1 + N(e)^2}$ 82

Where: n= sample size required

N= number of people in the population

e = allowable error (%)

$n = \frac{33101}{1 + 33101(0.05)^2}$

$= \frac{33101}{83.75}$

$= 395.24$

Method of Data Collection

Structured questionnaire was used for data collection. The questionnaire was generated from the research questions. The questionnaire has two parts. Part one elicited information on the personal data of the respondents while part two elicited information based on the objectives of the study.

A modified Likert scale response questionnaire was used as follows: very great extent; great extent; moderate extent; low extent; very low extent. 374 (Three hundred and seventy four) being 94.68% of 395 copies of instruments distributed were duly retrieved

Reliability of the Instrument

The study adopted Cronbach Alpha (α) technique to determine the reliability of the instrument used to collect data for the study. The reliability of the whole instrument was 0.713. Items measuring each construct were also evaluated. The result is presented in Table 1. The table shows that smart phone has the highest alpha coefficient score with 0.881 while profitability has the lowest alpha coefficient of 0.573. The benchmark for establishing items reliability was 0.5.

Table 2: Reliability Test Result of Constructs

S/No	Variables	No. of Items	Cronbach's Results	Alpha
1.	Smart phone	6	.881	
2.	Email and internet	6	.684	
3.	Productivity	6	.766	
4.	Profitability	5	.675	

Source: SPSS, ver. 23.0

Method of Data Analysis

Data gathered from the field was presented using descriptive statistics. Factor Analysis was used for dimension reduction and items with loadings below 0.4 were removed to ensure unidimensionality and internal consistency

with respect to the multiple items used to measure constructs. The hypotheses were tested using Pearson Product Moment Correlations at 0.05 level of significance to determine level of relationship among variables. Statistical Package for Social

Sciences, Version 23.0 (SPSS Ver. 23) was used for the analysis

Decision Rule

The hypotheses were tested using Pearson Product Moment correlation via SPSS. Therefore, the alternate hypotheses were accepted when P-value is less than 0.05, and rejected when it is greater than 0.05.

II. DATA PRESENTATION AND ANALYSIS

Data Presentation

This chapter presents the analysis of data collected for the study. The data collected for the study were presented using descriptive statistics while the test of hypotheses was carried out using correlations analysis.

Table 3 : Questionnaire Distribution/Return Rate

Questionnaire	Number	Percentage %
Retrieved and correctly filled	374	94.68
Retrieved but wrongly filled	6	1.52
Not retrieved	15	3.80
Total Distributed	395	100

Source: Field Survey, 2022

Table 3 shows the number of questionnaires distributed, number retrieved and not retrieved. The table shows that the number of questionnaires not returned was 15 which were 3.80 per cent. A total of 380 copies were retrieved, out this number, 6 was wrongly filled (1.52%), while 374 copies were correctly filled and therefore used for the analysis, and this was 94.68 per cent of the questionnaire distributed.

Demographic information of respondents (N=374)

The result showed that most of the respondents were members of NUPENG (56.15%),

while 43.85% of the respondents were members of PENGASSAN. Response on gender indicated that 70.86% of the respondents were male while 29.14% of the respondents were female. Response on workers' age indicates that 64.43% of the respondents were within the ages of 21 - 40 years while 35.56% were above 40 years

Hypothesis 1

HA1 : There is a positive relationship between smart phone and productivity of oil and gas companies in South-South, Nigeria

Table4: Correlations Collective smart phone and productivity

Organizations		Smart phone	Productivity
Smart phone	Pearson	1	.238**
	Sig. (2-tailed)		.000
	N	374	374
Email & Interment	Pearson Correlation	.238**	1
	Sig. (2-tailed)	.000	
	N	374	374

Source: SPSS ver 23.0, Correlation is significant at the 0.05 level (2-tailed).

The analysis result presented in Table 4 showed the relationship between smart phone and productivity. From the Table, significant positive relationship between smart phone and productivity was established ($P < 0.001$, $r = 0.238$).

This shows that increase in the use of Smart phone communication between the employees and management will increase productivity of oil and gas companies. We therefore, accept the alternate

hypothesis which states that there is a positive relationship between smart phone and productivity in oil and gas companies in South-South, Nigeria and rejected the null hypothesis.

Hypothesis 2

HA2: There is a positive relationship between Smart phone and profitability in oil and gas companies in South-South, Nigeria

Table5 : Correlations Collective smart phone and profitability

Organizations		Smart phone	Profitability
Smart phone	Pearson	1	.646**
	Sig. (2-tailed)		.005
	N	374	374
Profitability	Pearson Correlation	.646**	1
	Sig. (2-tailed)	.005	
	N	374	374

Source: SPSS ver 23.0, Correlation is significant at the 0.05 level (2-tailed).

Table 5 highlighted the relationship between smart phone and profitability of oil and gas companies in South-South Nigeria. From the table, a statistical positive relationship was observed between Smart phone and profitability ($P < 0.006$, $r = 0.646$). This shows that the use of smart phone communication will increase profitability in the industry.

From the analysis, the use of smart phone in these selected organizations will likely affect positively the profit of these companies in the

industry. We therefore accept the alternate hypothesis which states that there is a positive relationship between Smart phone and profitability in oil and gas companies in South-South, Nigeria and rejected the null.

Hypothesis 3

HA: There is a positive relationship between Email & internet and productivity in of oil and gas companies in South-South, Nigeria

Table6: Correlations Email & internet and productivity

Organizations		Email & internet	Productivity
Email Internet	Pearson	1	.555**
	Sig. (2-tailed)		.005
	N	374	374
Productivity	Pearson Correlation	.555**	1
	Sig. (2-tailed)	.005	
	N	374	374

Source: SPSS ver 23.0, Correlation is significant at the 0.05 level (2-tailed).

The information on Table 6 above shows the relationship between Email & internet and productivity in of oil and gas companies in South-South, Nigeria. The result shows a small positive relationship ($r = 0.555$) but statistically insignificant ($P > 0.05$).

The result shows that there is significant relationship between Email & internet and productivity in the industry. We therefore accept the alternate hypothesis which states that there is a positive relationship between Email & internet and

productivity oil and gas companies in South-South, Nigeria. This means that the use of Email and Internet facilitates communication in the oil and gas which will in turn increase productivity. This is because it will stop employee moving from one location to other for instruction or deliver message.

Hypothesis 4

HA: There is a positive relationship between Email & internet and profitability of oil and gas companies in South-South, Nigeria

Table7: Correlations between Email & internet and profitability
Correlations Email & internet and profitability

Organizations		Email & internet	Profitability
Email &Internet	Pearson	1	.866**
	Sig. (2-tailed)		.000
	N	374	374
Profitability	Pearson Correlation	.866**	1
	Sig. (2-tailed)	.000	
	N	374	374

Source: SPSS ver 23.0, Correlation is significant at the 0.05 level (2-tailed).

The correlation between Email & internet and profitability of oil and gas companies is presented. The result of the analysis shows that there is a statistically significant positive relationship between Email & internet and profitability ($P < 0.001$, $r = 0.866$). The result of the analysis shows that increase in the Email & internet of agreement will likely lead to increase in profitability in the industry. From the analysis, we accept the alternate hypothesis which states that there is a positive relationship between Email & internet and profitability of oil and gas companies in South-South, Nigeria and rejected the null hypothesis.

III. DISCUSSION OF FINDINGS

The study carried out explored the relationship between Modern communication technology and performance of Oil and Gas Companies in South-South Nigeria. It was a survey research and 395 employees were drawn from a population of 33,101 using Taro Yameni's formula. The study adopted descriptive survey design. Data was generated via close ended questionnaire designed to generate responses from the targeted respondents.

To ensure the appropriateness of the instrument, it was validated through factor analysis where three (3) items were excluded from the items for analysis. The reliability of the instrument was also tested and alpha coefficient of 0.713 was obtained for the entire instrument. Data generated was presented in chapter four using descriptive statistics and test of hypotheses were carried out using correlations analysis. Further discussions on the findings are presented under different subheadings subsequently.

Discussion on Demographic Data

Presentation from demographic data shows that 265 respondents or 70.86% of those who responded in the questionnaire were male while 109 persons or 29.14% were female. This

shows that the industry dominated by male gender. The age ranges of respondents show that the age ranges are between 31-40 has the highest percentage of 43.31, followed by ages above 40 with 35.56%. While age 21-30 is 21.12% the analysis shows that the respondents are truly of age. Since the study made use of people in the employee of the same industry, it is also a pointer that the right people responded to the questionnaire.

From the analysis, it was observed that 43.85% of the respondents are management staff while 56.15% is non-management staff thus, alluding to the fact that the right mix of employees provided the right answers to the questionnaire items. It also shows that employees with experience of 0-5 years representing 23.79% responded while those above 5 years of experience representing a total of 76.21%. The number of years put in by the respondents is expected to impact positively on the accuracy of responses they provide in the questionnaire. Fortunately, majority of the respondents have spent above 5 years which seem enough to have understood the industry and its workings

Discussion on Test of Hypotheses

The hypotheses formulated to guide the study were restated for easy reference.

HA1: There is significant relationship between smart phone affect and productivity

HA2: There is significant relationship between email and internet and profitability

Extent of Relationship that Exists Between Smart phone and Productivity in Oil and Gas Companies in South-South, Nigeria

The summary of the items that measure Smart Phone in the industry, the result shows that 42.16% of the respondents agree to a very high extent and 46.93% agree to high extent that Smart Phone communication is practiced in the industry. 7.75%, 2.76% and 0.31% of the respondents agree

to a moderate extent, low extent and very low extent.

Looking at the statistics, it shows that 89.53% of the respondents agree to a high extent that Smart Phone is practiced in the industry.

Similarly, the responses to items measuring productivity, from the table, 51.52% agree to a high extent, and 41.27% agree to a very high extent that there is relative productivity in the industry. 5.44%, of the respondents agree to moderate extent, 1.38% agrees to a low extent while 0.4% agrees to a very low extent. Thus, 92.79% of the respondents agree to a high extent that there is high productivity in the industry.

The descriptive statistics shows high practice of Smart Phone (89.53%) and high level of productivity (92.79%). The result suggests a linear relationship between the two variables.

The test of hypothesis 1; supports the result obtained in the descriptive statistics. The result showed a significant positive relationship between Smart Phone and Productivity ($P < 0.001$ $r = 0.238$). We therefore accepted the alternate hypothesis which states that there is a significant relationship between Smart Phone and Productivity in Oil and Gas Companies in South-South, Nigeria. From the result, increase in Smart Phone communication between management of the companies and the employees will likely lead to higher Productivity.

Extent of Relationship that Exists Between Email & Internet and Profitability in Oil and Gas Companies in South-South, Nigeria

The summary of the responses in respect to items measuring Email & Internet, the result shows that 80.46% of the respondents agree to a very high extent, while 79.42% agree to a high extent that Email & Internet communication in Oil and Gas companies are implemented. The items such as the use of Email & Internet enhance employee and management performance received overwhelming support from the respondents. Those that agree to moderate extent, low extent and very low extent are 8.01%, 1.43% and 0.67% respectively.

The summary of responses measuring Profitability was also presented; the responses, 87.22% and 62.67% of the respondents agree to a very high extent and high extent that good implementation of the use of Email & Internet, connecting staff offices with internet, implementation communications facility are some of the factors that leads to profitability in the industry. 8.66%, 1.07% and 0.37% of the respondents agree to a moderate extent, to a low

extent and to very low extent. From the result, we conclude that majority of the respondents belong to high extent category on issues that lead to higher profitability in the industry.

Comparatively, 89.89% of the respondents agree to a high extent that Email & Internet is implemented, 89.91% also agree to items that lead to higher profitability. One of the items points to the fact that poor implementation of Email & Internet communication could lead to poor profit in the system.

The test of hypothesis Two supports to an extent the descriptive statistics result shows a significant positive relationship was observed between Email & Internet implementation and high profit in the industry ($P < 0.006$, $r = 0.646$). Thus hypothesis two which states that there is a positive relationship between Email & Internet and profitability in oil and gas companies in South-South, Nigeria was accepted.

The results suggest that Email & Internet communication implementation is part of factors that leads to profitability. However, proper examination of coefficient of determination ($r^2 = 0.021$ Or 2.13%) shows that percentage contribution of Email & Internet implementation to productivity in the industry is relatively small. This also may not be unconnected to the fact that from the responses, majority of the respondents seems satisfied with the Email & Internet communication implementation.

IV. SUMMARY, CONCLUSION AND RECOMMENDATIONS

The main purpose of this study was to determine the relationship that exists between Modern communication technology and performance of oil and gas companies in South-South, Nigeria. The study focused on determining the relationship between Smart Phone and productivity; Email & Internet and profitability, the relationship between union integrity and employees in selected oil and gas companies in South-South Nigeria.

We look at the background of the study, statement of the problem, objectives of the study, research questions and hypotheses. Oil and Gas industry is the mainstay of Nigerian economy. Proper management of this all-important sector is necessary for the growth of both the industry and the country at large. Unfortunately, this can be hardly achieved in absence of effective modern communication facilities since human being that are involved in the operations of the industry and remain the most valuable assets.

The problem that led to this study is the movement of employees from one location to another in the industry for information in the industry which hitherto seem to have adverse effects on their productivities.

The research methodology was presented, survey research design was adopted, and hence structured questionnaire was used to elicit responses from respondents. The instrument was validated using factor analysis and reliability was assessed using Cronbach alpha which showed satisfactory coefficient as they were all above 0.5. Data generated was presented, analyzed; hypotheses were tested using Pearson Product Moment Correlations.

Conclusion

Modern communication technology has been good for organization and employees general. E-mail as a technological means to improve the lives of individuals and employees has proved beneficial in many areas, providing better use of time, and fluidity in correspondence. In a society that is constantly speeding up, communication technology has provided excellent means for achieving competition-driven goals. But as the benefit may be superb as it affects employees, it also has some side-effects such as stress and distress. It is based on this the researcher investigate to ascertain the benefit of this modern communication technology on organizational performance.

The results of this study suggest that modern communication technology can improve productivity and profitability. The study concludes that there is a significant positive relationship between Modern communication technology and performance of oil and gas companies in South-South Nigeria. Since performance was seen in terms of the level of productivity and profitability the implications of the study therefore, is that oil firms will likely produce more and makes more profit.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Oil and Gas Companies in South-South Nigeria should sincerely make sure all the employees exposed to use Smart Phone ease communication problems in the industries.
2. Email & Internet should be connected or implemented in the offices of all the employees and management to stop movement of employees from one place to another. And this will enhance productivity and profitability.

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