



Virtual Communication and Organizational Responsiveness of Indigenous Oil and Gas Companies in Rivers State

Dr. E. A. Bestman and Iniye Alfred

Department of Office and Information Management, Faculty of Management Sciences, Rivers State University, P.M.B. 5080, Port Harcourt

Abstract: *This study 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. Primary data was sourced using structured questionnaire. The population of this study consists of the thirty three (33) registered and functional indigenous oil and gas companies in Rivers State. A census sampling technique was adopted, hence, all the 33 indigenous oil and gas companies in Rivers State was studied because the population was small. However, six (6) managerial staff in each of the indigenous oil and gas companies in Rivers State made up the respondents of the study giving a total of 198 respondents in the 33 indigenous oil and gas companies in Rivers State. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70 selected. The hypotheses will be 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 concludes that the adoption of virtual organization in indigenous oil and gas companies in Rivers State positively enhances organizational responsiveness. The study recommends that virtual platform should be encourage among employees or team member working upon a particular project for better performance, to enhance the each employee's agility and to creative a better team spirit among staffs from varying department within the same organization.*

Keywords: *Virtual Communication, Organizational Responsiveness, Adaptability, Proactiveness*

INTRODUCTION

In recent times, the complexities and frequent changes experienced within the environment have necessitated managers to continuously strive for improvement in their product or service offerings. Such changes essentially call for renewal of operations and sustainable market positioning of goods and services. Incidentally, the changes could emanate from threats or shocks within the environment which may lead to organizational failures if not well managed. It is therefore expedient for organisational actors to understand and deal with the changes as they occur (Coleman & Adim, 2019).

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 office (Colbert, Yee & George, 2016). Scholars of leadership and management refer to members of the virtual working environment as the digital workforce. Within the context of the digital workforce the younger generation of individuals are referred to as “digital natives” whereas older generation of individuals as digital immigrants (ibid). This distinction of digital workers refers to the habits and usage of technology in society. Colbert *et al.* (2016:731) argue that digital natives cannot remember the first time they accessed the Internet. They are completely at home in the world of digital devices and rely heavily on technology for learning, communicating, and entertainment while the digital immigrants are seen as individuals who have rapidly adopted technology as it has become available - are increasingly comfortable with and reliant on technology (ibid: 731). Digital fluency is referred to as the abilities, competencies and qualities one develops using and interacting with technology „' those who are digitally fluent have achieved a level of proficiency that allows them to manipulate information, construct ideas, and use technology to achieve strategic goals (ibid, 2016:732).

Information and communication technology (ICT) revolution has continued to drive the wide use of computers and other info-tech infrastructure which accelerate data processing and transmission in compliant organizations. Paradoxically, digital resources are as vital as the conventional/traditional corporate compliments comprising men, money, materials, and machines (the 4Ms). Sensitive investors therefore endeavour to commit funds towards the provision of functional management information system (MIS), coordinated by state-of-the art digital work stations. The emphasis in recent times is on accentuating top-quality preparation, preservation and presentation of information relating to the organizations. On account of this, information managers monitor operational processes, ensuring that inefficient modes are identified and substituted by more cost effective modes that would optimize info-tech investments (ITIs) (Agundu & Bestman, 2014). One of such revolution in the work place is the emergence of virtual organizations.

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 geographical locations, 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 Kenyan 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).

Many organizations are now benefiting from harnessing virtual work to increase productivity, efficiency, quality, and reduction in reliance on “labor 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). A company’s workforce has always been its most valuable asset and normally its biggest expense. Attracting and retaining the right talent continues to be a

foremost concern for managers. Today, however, 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. The need for companies adopting virtual work has been heightened by the outbreak of the novel coronavirus termed COVID-19.

Despite the benefits experienced from the use of virtual offices, the challenges experienced have also been immense. E-leaders are facing a new set of challenges compared to the traditional managers (Lilian, 2014). The ability of the team to coordinate their work from different locations is a challenge as the ability to build trust from teams that may be miles apart with different languages, and cultural affiliations are difficult. It translates to a situation where the team lack synergy and the effectiveness of work become low (Orta-Castañon, 2018). People in different countries have different manners of doing things meaning that they all have different manners of handling different situations.

Security is a major challenge for organization venturing into the use of virtual communication (Lipińska, 2015). There is immense sharing of confidential information when people are working virtually meaning that organizations need to understand how to manage the risk to avoid litigations that would arise if data was leaked to outside sources. Among the named principles of success when working with virtual teams is ensuring security (Duarte & Snyder, 2006). Volker Rieger, a director of SAP, created a platform where the entire workforce of the organization was incorporated and could communicate virtually through a secure platform. The system has eliminated the complexities of online meetings by allowing it to be only one click away for every employee. It is through this virtual platform that it's over 60,000 employees are able to connect and work together (SAP, 2018).

Overcoming the challenges presented in a virtual working environment requires the teams to stay in constant communication on the tasks they are handling, the challenges they are experiencing and the progress they are making (Lacerenza, Reyes, Marlow, Joseph & Salas, 2017). It calls for having regular video meetings that is scheduled in a manner to incorporate every member of the team. Video meetings are considered a better mode of communication as they enable the members to read into the team, the moods, and create an environment for discussion and additionally contribute to trust (Ferrazzi, 2014). Therefore, the purpose of the study was to examine the relationship between virtual communication and organizational responsiveness of indigenous oil and gas companies in Rivers State.

The specific objectives of the study included:

- i. To examine the relationship between virtual communication and adaptability of indigenous oil and gas companies in Rivers State.

- ii. To examine the relationship between virtual communication and proactiveness of indigenous oil and gas companies in Rivers State.



Figure 1: Conceptual model for the relationship between virtual communication and organizational responsiveness.

Source: Desk Research (2021)

LITERATURE REVIEW

Theoretical Foundation

Affective Event Theory

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, Dick, Fisher, West and Dawson (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 operationalised as events that need to be

invested in the organisation so as to attain project performance. It is believed that if members of virtual team perceived that the organisation is interested in improving their wellbeing and capacities, they may be likely to be motivated and assumed positive behaviour and this may lead to project performance.

Virtual Communication

Havey (2014) defines communication as the exchange of information between a person to a person or accompany to a company. According to Kirkman, et al., (2016), communication differs according to the level of information richness. The Media Richness Theory (MRT), proposed by Hoopes et al., (2014), is used to define the ability of different communication media to transfer information (Zaccaro and Bader, 2014). The communications medium with the highest level of richness is face-to-face communication, followed by video conferencing, phone, and chat respectively. The lowest richness level is represented by e-mail, text messaging and written documents (Cascio, 2014). The basic infrastructure that any organization conducting global projects must be equipped with consists of the computer-mediated communication systems (Majchrzak et al., 2012).

In Malhotra and Majchrzak (2015) view, computer-mediated communication systems are those that use computers to structure and process information and use telecommunications networks to facilitate its exchange. These systems include e-mail, voice messaging, computer conferencing, etc. The rapid development of technologies that support communication and facilitate the exchange of data and information, including the internet, telephony, broadcast media, and all kinds of audio and video transmission technologies, improves the team work undertaken within geographically distributed project teams.

Virtual Communication is the key in getting things done in an organization whether that's through computer-mediated communication or face-to-face because it provides a vehicle enabling employees to make decisions, collaborates, and achieve results as established by the firm (Zbar, 2002). Computer-mediated communication technology allows employees to connect and this connectivity has also enabled employees to communicate in real time wherever they are located across the globe, at minimal cost (Berry, 2011). And, as many firms have become global, the way in which employees are communicating with one another and working together has inevitably changed. Friedman's "Work Flow Software" flattener discusses how people have not just been connecting with other people, but have been working and collaborating with each other. Everyone's applications are now connected with everyone else's applications and so 'workflow' (design, create, buy and sell) can be performed here, there and everywhere across the globe (Friedman, 2005).

Technological developments such as information communication technologies (ICTs), a global talent pool, and a dynamic business environment enable organizations to operate across further distances; and the advent of virtual firm caused a reorientation of business communication from the shift in communication platforms including the incorporation of

computer-mediated communication (Caya, Mortensen, and Pinsonneault, 2013). Managers of virtual employees need the skill of communication to engage their employees by using varied communication mediums (Chen, 2012).

Communication skills are obviously among the most important competences for virtual team managers (e.g. Joshi and Lazarova, 2005). Virtual team managers must be able to facilitate communication and need to have excellent communication skills, particularly regarding asynchronous communication. Leaders have to rely on infrequent and technology-mediated communication to motivate team members to achieve team goals (Fiol and O'Connor, 2005, Malhotra et al., 2007). The lack of physical proximity, fewer possibilities for face-to-face interaction with team members, and competing local demands (Fiol and O'Connor, 2005; Kiesler and Cummings, 2002) cause a need for additional communication skills. Managers should also enhance a psychologically safe communication climate by being consistently accessible, asking frequently for input from members, and encouraging team members to discuss (e.g. Gibson et al., 2014).

Concept of Organizational Responsiveness

Organizational responsiveness refers to the extent to which firms react rapidly to changes in a business environment to seize potential opportunities (Bernardes & Hanna, 2009). This responsiveness reflects “the efficiency and effectiveness with which firms sense, interpret, and act on market stimuli (Garrett, Covin & Slevin, 2009), and has been treated as a competitive advantage. For example, Wei and Wang (2011) proposed that this responsiveness represents a competitive marketing advantage by deploying resources to satisfy customer needs. Inman Sale, Green, Jr and Whitten (2011) noted that a firm with a high level of responsiveness outperforms its competitors in terms of operations. Inman *et al.* (2011) noted that a firm with a high level of responsiveness outperforms its competitors in terms of operations.

Responsiveness agility in terms of change-enabling capabilities, which are embedded in organizational processes. Responsiveness refers to ability of recognizing changes and quickly taking advantage and benefiting from them. Responsiveness is the ability of a firm to respond to customers' needs in terms of quality, speed and flexibility and it is characterized by combined goals such as time, quality and flexibility (Asree, Zain & Razalli, 2010). An organization's performance is often determined by its ability to respond quickly to changes in the business environment. Responsiveness enables organizations to detect market changes quickly, reconfigure their processes to meet new market requirements, share information across organizational units, take maximum advantage of information processing systems, and adopt new product and process technologies ahead of competitors (Hoyt, Huq & Kreiser, 2007). The level of uncertainty in the operating environment of firms supports the assertion that responsiveness is a key determinant of competitiveness. It is an essential condition that allows firms to develop competitive advantage. Furthermore, organizational responsiveness includes employee response, response time, response speed, information integration and procedural

response. Employee response: service personnel must have sufficient responsibility, flexibility and willingness to help customers.

Parasuraman, Zeithaml and Berry (1988) indicated that, employee service behavior can enhance and maintain service quality, which is important in implementing organizational service strategy. Response time has to do with ability of the organization to meet the needs of their customers on time. Organizations set specific rules regarding response time, provide what the customer wants and handle their requirement instantly. Response speed refers to the ability of an organization's systems to respond to heterogeneous customers' needs instantly and in real-time. Katz and Kahn (1978) argued that, organizations must control internal resources to rapidly respond to threats and environmental changes. Information integration represents the degree to which the organization offers excellent service information system to receive, analyze, record and track customers' needs. Reid, Lxtan and Mavondo (2005) indicated that, the basis for enhancing organizational responsiveness is to design an integration marketing communication model from outside to inside (Duncan & Moriarty, 1998). Further, procedural response indicates a standard operational procedure to connect, deliver and record and a different process to cope with varying needs.

Scholars have conducted numerous studies to explore how organizational responsiveness can be enhanced (Wei & Wang, 2011). According to Bernardes and Hanna (2009) central to this concept of organizational responsiveness seems to be the capability to learn fast in an environment where changes are fast-paced and difficult to foresee. Accordingly, scholars have increasingly realized that to develop and maintain responsiveness, a firm must constantly learn from partners with rich experiences in terms of responding to market changes (Yu, Jacobs, Salisbury & Enns, 2013).

From the perspective of dynamic capabilities, organizational responsiveness assumes the role of adaptive capacity, which is reflected in the company's ability to reconfigure its resources and coordinate processes according to the fast-changing environment. Although some recent research has been carried out into the responsiveness of firms from the perspective of dynamic capabilities (Thongsodsang & Ussahawanitchakit, 2011), these investigations are still in their early stages and require more consistent results. What can be observed is that the perspective of dynamic capabilities is a versatile integrated theoretical approach both to the broader theories of management, such as RBV, and the more specific approaches to marketing, as in the case of market orientation (Morgan, 2012).

In dynamic and complex environments, organizational responsiveness presents itself as the adaptive capability of the company. Organizations can anticipate unexpected changes and uncertainties more rapidly when this pattern fits their strategic direction. Zhou and Li (2010) underline this point when point to strategic orientation as an important driver of the adaptive capacity of a company. According to the authors, strategic orientation influences the way.

Market responsiveness is a market-driven behavior of the firm and its units. Responsiveness requires some market maturity, as customers, competitors, and other relevant market actors need to be distinguished. The firm would then be able to specify a suitable degree of responsive action, such as product customization and building customer relationships (Pehrsson, 2014).

Measures of Organizational Responsiveness

Adaptability

Adaptability is an aspect of resilience that reflects, learning, flexibility to experiment and adopt novel solutions, and the development of generalized responses to broad classes of challenges (Walter, et al., (2006). According to Bowden (1946) researching the past world war, adaptive capability is the ability or inclination of individuals or group to maintain an experimental attitude towards new situations as they occur and to act in terms of changing circumstances. Adaptability is addressed in this context through two approaches; socio environmental and organizational (Mc Manus, et al., 2008).

An organization's ability to adapt is at the heart of their ability to display resilient characteristics. Starr, et al., (2003) discusses the importance of adaptation and notes that the aim is to create advantages over less adaptive competitors. This suggests that adaptability is also linked to competitiveness. Dalziell and Mc Manus (2004) define adaptability as the engagement and involvement of organizational staff so that they are responsible, accountable and occupied with developing the organization's resilience through their work because they understand the links between the organization's resilience and its long term success. It is the ability of the system to respond to the changes in its external environment and to recover from damage of internal structures with the system that affect its ability to achieve its purpose.

Organizational adaptation is a process of adjustment to the change and environmental uncertainty, of maintaining an effective alignment with the environment while internal interdependencies are efficiently managed (Miles & Snow, 2003). The process is considered a dynamic process, with adaptation being the strategic aspect needed to achieve competitive advantage in a long term perspective. The process of adaptation is not seen as phenomenon, but rather as a result of complex interactions that consider the changes in the external environment on one side, and on the other side the internal environment. Further, the process of adaptation is affected by previous decisions on strategic positioning according to this stream of research. While organizational characteristics enable firms to design and implement certain strategies, routines that take a firm to learn, adapt, change and renew itself constantly can be considered dynamic routines (Teece, Pisano & Shuen, 1997).

Eunni, Post and Berger (2005) well-defined adaptation strategy as a firm's ability to obtain the correct alignment of strategy, structure and culture (internal alignment) in order to position it competitively in the market, and alignment with its environment in order to successfully face changes in its environment (external alignment). They further proposed some internal

alignment measures (corporate leadership, strategic planning and approach to workers) and external alignment measures (technological and innovation capacity, corporate social responsibility, market and customer focus and strategic partnerships).

Adaptability - Practically, resilient people are those who are usually aware of and sensitive to the changes and happenings in their environment. In Koontz and Weihrich (1999) they succinctly put that organization does not completely isolate itself from its operating environment, thus, there is a mutual reliance. However, this mutual reliance presents the organization with opportunities and adversity of variable degrees. Hence, adversity is associated with strains and pressures; it requires a progressive adaptive capacity from the organization and its employees to synchronize such changes. This is because; adaptation is a major driver of a sustained resilient behaviour. Specifically, studies indicate that resilient individuals are better equipped to cope with constantly changing workplace (Tugade & Fredrickson, 2004), therefore the employees must be influenced to act in the favour of the organization's objectives. Denison (2007) define adaptability as translating the demand of business environment into action.

To survive and make profit, organizations and their employees need to continuously adapt to the different levels of environment uncertainty (Amah & Baridam, 2012) and Daft, (1998) puts it that environmental complexity is a vital contingency for organizational structure and internal policies. Leaning on these postulates, it therefore, means that organization must have internal behaviours or policies imbedded in its core culture that encourages adaptive behaviour in the event of any adversity emanating from the environment.

Proactiveness

Proactive behavior refers to anticipatory action that employees take to impact themselves and/or their environments. Existing research provides extensive evidence of the different ways in which employees express proactive behavior, including seeking feedback (Ashford, Blatt, & Vande Walle, 2003; Ashford & Cummings, 1983, 1985), taking initiative in pursuing personal and organizational goals (Frese & Fay, 2001), actively adapting to new environments (Kim, Cable, & Kim, 2005; Wanberg & Kammeyer-Mueller, 2000). Proactiveness means acting in advance to deal with things that might cause problems in the future, but also to identify future opportunities and to act upon this. To be one step ahead. For the entrepreneurial dimension it means that one is active in creating new opportunities and anticipating possible threats. Many scholars since Schumpeter have pointed out the importance of initiative in the entrepreneurial process. In some literature, proactiveness and competitive aggressiveness are used interchangeably. This can be explained by the pervasiveness of Covin and Slevin's theory (1991); competitive aggressiveness was later introduced to the orientation dimensions by Lumpkin and Dess in 1996. It is indeed closely related to competitive aggressiveness; the distinction is that proactiveness pertains to how an organization relates to new market opportunities. By showing initiative and acting with opportune influence on trends, demand

can be created. Competitive aggressiveness pertains to how organizations relate to competitors and how they respond to trends and demand that are already on the market.

Pro-activeness is related to initiative and first-mover advantages and to taking initiative by anticipating and pursuing new opportunities (Lumpkin & Dess, 1996). The Oxford dictionary defines pro-activeness as acting in anticipation of future problems, needs, or changes. Lumpkin and Dess (1996) argued that pro-activeness may be crucial to an Entrepreneurial Orientation because it suggests a forward-looking perspective that is accompanied by innovative and entrepreneurial activity. Pro-activeness relates to market opportunity in entrepreneurship by seizing initiative and acting opportunistically in order to shape the environment, that is, to affect trends and, perhaps, even to create demand. The characteristics of a Proactive enterprise involve aggressiveness and unconventional tactics towards rival enterprises in the same market segment, such enterprises shape their environments by actively seeking and exploiting opportunities. Proactive firms introduce new products, technologies, administrative techniques to shape their environment and not react to it (Callaghan, 2009).

Virtual Communication and Organizational Responsiveness

The impact of technology in the virtual work environment are best mirrored in the work performance of workers or employees. In general, the performance of workers in a virtual dais can be easily supervised and appraised as put side by side to the efficiency of work in the regular offices where appraisals are undertaken by proximate supervisor. Virtual work procedures have a direct impact on work performance and this also impacts on the overall organizational performance. Pfano & Beharry (2016), accentuated that having cutting-edge office technologies upsurges the work performance of both managers, and employees because technologies make works a lot stretchier. To effect increased performance, technology has to be germane and fitting, this means that the accessibility of many unconventional technologies alone by organization does not correlate to enhance performance but the effective use, application and suitability of the technology to the jobs in the workplace. Pfano and Beharry (2016), further reported in his study outcome that there is strong relationship between the appropriate utilization of office technologies and positive change in organizational performance. These technologies, in particular, are computers and telephones which are useful in making communication within offices smooth and effective. On his part, Davenport (2013) pointed out that information and communication technology (ICT), when utilized effectually, can guarantee unremitting collaboration between managers and their subordinates. It is vivacious that in offices, managers and subordinates create clear lines of communication and it is in this respect that ICT comes in hand to be very useful.

Virtual communication is a team process that is consistently identified as enhancing team performance, as it facilitates the development of integral team processes and outcomes in a fashion distinct from other pertinent team variables, that instigates timely response to customers' expectations or changes in the business environment (Kozlowski & Bell, 2003; Kozlowski & Ilgen, 2006). Consequently, the relationship between virtual communication and

performance outcomes such as responsiveness has not been frequently assessed within the literature. Through transferring timely information and knowledge, firms can make decision quickly and effectively (Eisenhardt 1989). The literature suggests that organizational responsive can be improved by firm's effective communication or knowledge sharing, this vital in expanding its innovation actions in the form of new products, services, or business and making rapid responses to changes (Chakravarty et al. 2013; Tallon & Pinsonneault 2011). Specifically, operational communication can improve firm responsiveness by aiding fast execution or implementation, which focuses on flexible and rapid responding operations (Lu & Ramamurthy 2011).

The effectiveness of virtual employees depends on effective communication and a supportive environment inside the firm and the larger organization (Berry, 2011; Daniel, 2010). Clarity in communication and knowledge transfer between virtual employees can reduce frustration and time required to complete a project and knowledge creation is one of the most important attributes for modern organizations because knowledge is a critical foundation of competitive advantage (Wang, Su, and Yang, 2011). Creating and retaining knowledge allows organizations to compete with other companies in modern business environment.

From the foregoing discourse, the study hypothesized thus:

- Ho₁:** There is no significant relationship between virtual communication and adaptability of indigenous oil and gas companies in Rivers State.
- Ho₃:** There is no significant relationship between virtual communication and proactiveness of indigenous oil and gas companies in Rivers State.

METHODOLOGY

. The study utilized a cross-sectional research survey design. Primary data was sourced using structured questionnaire. The population of this study consists of the thirty three (33) registered and functional indigenous oil and gas companies in Rivers State. A census sampling technique was adopted, hence, all the 33 indigenous oil and gas companies in Rivers State was studied because the population was small. However, six (6) managerial staff in each of the indigenous oil and gas companies in Rivers State made up the respondents of the study giving a total of 198 respondents in the 33 indigenous oil and gas companies in Rivers State. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70 selected. The hypotheses will be tested using the Spearman's Rank Order Correlation Statistics.

DATA ANALYSIS AND RESULTS

Table 1: Correlations Matrix between Virtual Communication and Adaptability

			Virtual Communication	Adaptability
Spearman's rho	Virtual Communication	Correlation Coefficient	1.000	.736*
		Sig. (2-tailed)	.	.000
		N	167	167
	Adaptability	Correlation Coefficient	.736*	1.000
		Sig. (2-tailed)	.000	.
		N	167	167

*. Correlation is significant at the 0.05 level (2-tailed).

Source: SPSS Output

Ho₁: There is no significant relationship between virtual communication and adaptability of indigenous oil and gas companies in Rivers State.

The result of correlation matrix obtained between virtual communication and adaptability was shown in Table 1. The correlation coefficient of 0.736 confirms the direction and strength of this relationship. The correlation coefficient reveals that there is a strong relationship between virtual communication and adaptability. The test of significance shows that this relationship is significant at $p < 0.000 < 0.05$. Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between virtual communication and adaptability of indigenous oil and gas companies in Rivers State.

Table 2: Correlations Matrix between Virtual Communication and Proactiveness

			Virtual Communication	Proactiveness
Spearman's rho	Virtual Communication	Correlation Coefficient	1.000	.738**
		Sig. (2-tailed)	.	.000
		N	167	167
	Proactiveness	Correlation Coefficient	.738**	1.000
		Sig. (2-tailed)	.000	.
		N	167	167

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

Source: SPSS Output

Ho₂: There is no significant relationship between virtual communication and proactiveness of indigenous oil and gas companies in Rivers State.

The result of correlation matrix obtained between integrity and innovativeness was shown in Table 2. The correlation coefficient of 0.738 confirms the direction and strength of this relationship. The coefficient represents a positive correlation between the variables. The test of significance shows that this relationship is significant at $p < 0.000 < 0.01$. Therefore, based on observed findings the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between virtual communication and proactiveness of indigenous oil and gas companies in Rivers State.

DISCUSSION OF FINDINGS

The finding of the study reveals that there is a strong positive relationship between virtual communication and organization responsiveness which corroborates with the study on virtual collaboration and organizational responsiveness, according to Gergle, Kraut and Fussell (2012), who proved that virtual collaboration is widely used in corporate businesses for its efficiency, innovation, and ability to gain or keep competitive advantages in the market. Firms commonly use virtual collaboration technology to facilitate problem-solving between employees within the firm, and also to collaborate with another firm. Virtual collaboration improves profit margins by increasing operational efficiency and productivity within the company, either by means of innovating solutions or through the increased sharing of knowledge through virtual means. IBM's use of virtual collaborative spaces, such as 3-D meeting rooms and use of avatars, the virtual universe community provides employees with a way to collaborate which has resulted in more production (Cherbakov & Luba, 2009).

The finding of this study is aligns to an earlier study by Bestman and Kenebara (201) on executive information system and productivity of manufacturing companies in Rivers State, Nigeria and in in which they found that there is a significant relationship between accounting information system effectiveness and productivity of manufacturing companies in Rivers State, Nigeria.

According to Furst *et al.* (2012) explains, that when a team of employees are linked together, they are likely to frequently communicate and exchange information leading to improved performance. When communication and collaboration in a project are only effectuated on-line, usually through the support of a collaboration platform, then we refer to virtual project teams. In line with other authors (Bellarby and Orange, 2013) project teams are structures of independently managed individuals, often distributed, that possess complementary capabilities and who cooperate temporarily to meet predefined objectives within predetermined deadlines through a non-repetitious string of complex activities. According to Wernerfelt (2014), virtual

platform improves projects performance since people in different localities can work as a team through networking.

Cohen and Mankin (2015) claims also proved that when individuals are engaged in non-routine tasks, even partial IT support may facilitate the whole context of collaboration. The creation of a functional collaboration when collaboration intensity is high, since such cases are prone to a high degree of misunderstandings. The intensity of collaboration in a project teamwork context is highly related to the nature of the work tasks carried out by team members and especially the degree of “routineness” of these tasks.

CONCLUSION AND RECOMMENDATIONS

The study thus concludes that the adoption of virtual organization in indigenous oil and gas companies in Rivers State positively enhances organizational responsiveness.

Similarly, the study recommends that virtual platform should be encourage among employees or team member working upon a particular project for better performance, to enhance the each employee’s agility and to creative a better team spirit among staffs from varying department within the same organization.

REFERENCES

- Agundu, U.C., & Bestman, A.E. (2014). Digitization, optimization and sustainable info-tech investments in Nigerian Organizations. *Journal of Information Engineering and Applications*, 4 (7), 15-21.
- Amah, E., & Baridam, D. (2012). Adaptability and organizational effectiveness: A study of the Nigerian banking industry. *International Journal of Business and Management Tomorrow*, 2 (3), 122-131.
- Ashford, S. J., & Cummings, L. L. (1983). Feedback as an individual resource: Personal strategies of creating information. *Organizational Behavior and Human Performance*, 32, 370–398.
- Ashford, S. J., & Cummings, L. L. (1985). Proactive feedback seeking: The instrumental use of the information environment. *Journal of Occupational Psychology*, 58, 67–79.
- Ashford, S. J., Blatt, R., & VandeWalle, D. (2003). Reflections on the looking glass: A review of research on feedback-seeking behavior in organizations. *Journal of Management*, 29, 769–799.
- Asree, S., Zain, M., & Razalli, M. R. (2010). Influence of leadership competency and organizational culture on responsiveness and performance of firms. *International Journal of Contemporary Hospitality Management*, 22(4), 500- 516
- Bernardes, E. S., & Hanna, M. D. (2009). A theoretical review of flexibility, agility and responsiveness in the operations management literature: Towards a conceptual

- Berry, R. G. (2011). Enhancing effectiveness on virtual teams: Understanding why traditional team skills are in sufficient, *Journal of Business Communication*, 2(48), 186–206
- Bestman, A.E., & Kenebara, F.A. (2019). Executive information system and organizational productivity of manufacturing companies in Rivers State, Nigeria. *American Journal of Humanities and Social Sciences Research (AJHSSR)*, 5(4), 173-180.
- Bowden, G. T (1946). The adaptive capacity of workers. *Harvard Business Review*
- Callaghan, C.W. (2009). Entrepreneurial orientation and entrepreneurial performance of Central Johannesburg Informal Sector Street Traders.
- Cascio, W. F. (2014). Managing virtual workspace; *Academy of Management Executive*, 14(3), 81-90.
- Caya, O., Mortensen, M., & Pinsonneault, A. (2013). Virtual teams demystified: An integrative framework for understanding virtual teams. *International Journal of e Collaboration*, 9(2), 1-33.
- Chakravarty, A., Grewal, R., Sambamurthy, V., (2013). Information technology competencies, organizational agility, and firm performance: Enabling and facilitating roles. *Information Systems Research* 24 (4), 976-997
- Chen, C. A. (2012). Explaining the difference of work attitudes between public and nonprofit managers: The views of rule constraints and motivation styles. *The American Review of Public Administration*, 42, 437-460.
- Cherbakov, L. (2009). Virtual Spaces: Enabling Immersive Collaborative Enterprise, Part 1: Introduction to the Opportunities and Technologies. IBM, 30 June
- Cohen, S., & Mankin, D. (2015). Collaboration in the virtual organization: Trends in Organizational Behavior, 6, 105 - 120.
- Colbert, A., Yee, N., & George, G. (2016). The digital workforce and the workplace of the future. *Academy of Management Journal*, 59, 731-739.
- Coleman, R. O., & Adim, C. V. (2019). Entrepreneurial proactiveness and organizational resilience in mobile telecommunication firms in Rivers State, Nigeria. *The Strategic Journal of Business & Change Management*, 6 (3), 454 – 465.
- Daft, R. L. (1998). *Organizational theory and design (6th ed.)*. Ohio: South-Western College Publishing.
- Dalziell, E., & McManus, S. (2004). Resilience, vulnerability and adaptive capacity: Implications for system performance. Paper presented at the International Forum for Engineering Decision Making.

- Davenport, T. H. (2013). *Process innovation: reengineering work through information technology*. Harvard Business Press
- Davenport, T. H., & Pearlson, K. (1998). Summer). Two cheers for the Virtual Office. *Sloan Management Review*, 39(4), 51.
- Denison, D. (2007). *Denison Consulting Model*. An Arbor Zurich Shanghai.
- Duncan, T., & Moriarty, S. E. (1998). A communication-based marketing model for managing relationships. *Journal of Marketing*, 62(2), 1-13.
- Eisenhardt, K. M. (1989). Making fast strategic decisions in high-velocity environments. *Academy of Management Journal*, 12, 543-576.
- Eunni, R.V., Post, J.E. & Berger, P.D. (2005). Adapt or adapt: Lessons for strategy from the US telecoms industry. *Journal of General Management*, 83-105.
- Ferrazzi, K. (2014, October 24). How successful virtual teams collaborate. Harvard Business Review, pp. [Online] Available at: <https://hbr.org/2012/10/how-to-collaborate-in-avirtua>.
- Fiol, M. C., & O'Connor, E. J. (2005). Identification in Face-to-Face, Hybrid, and Pure Virtual Teams: Untangling the Contradictions. *Organization Science*. 16(1), 19-32.
- Frese, M., & Fay, D. (2001). Personal initiative: An active performance concept for work in the 21st century. In Staw, B. M., & Sutton, R. I. Eds. *Research in Organizational behavior*, 23, 133–187)
- Friedman, T. L. (2005). *The world is flat: A brief history of the twenty-first century*. New York, NY: Farrar, Straus and Giroux
- Furst, R. Teece, D. Pisano, G. & Shuen, A. (2012). On the role of subjectivity in establishing, using, operating and evaluating information retrieval systems: Treatise II on retrieval system theory. *Information Storage and Retrieval*, 9(7), 353-372
- Garrett, R.P., Covin, J.G., & Slevin, D.P. (2009). Market responsiveness, top management risk taking, and the role of strategic learning as determinants of market pioneering. *Journal of Business Research*, 62(8), 782-788.
- Gergle, D., Kraut, R. E. & Fussell, S. R. (2012). "Using visual information for grounding and awareness in collaborative tasks. *Professional Communication, IEEE Transactions on*. 45(4), 219-230
- Gibson, C.B., Huang, L., Kirkman, B. L. & Shapiro, D. L. (2014). Where global and virtual meet: The value of examining the intersection of these elements in twenty-first-century

- teams. *Annual Review of Organizational Psychology and Organizational Behavior*, 1(1), 217-244.
- Havey, C. S. (Eds.). (2014). *Virtual teams that work: creating conditions for virtual team effectiveness*. San Francisco, CA: Jossey-Bass.
- Hoopes, D., G., Madsen, T., L., & Walker, G., (2014). Guest Editors' Introduction to the Special Issue: Why is There a Resource-Based View? Toward a Theory of Competitive Heterogeneity, *Strategic Management Journal*, 24, 889–902.
- Hoyt, J., Huq, F. & Kreiser, P. (2007). Measuring organizational responsiveness: The development of a validated survey instrument. *Management Decisions*, 45(10), 1573-1594.
- Inman, R.A., Sale, R.S., Green, K.W. Jr & Whitten, D. (2011). Agile manufacturing: Relation to JIT, operational performance and firm performance. *Journal of Operations Management*, 29(4), 343-355.
- Joshi, A. & Lazarova, M. (2005). Do Global Teams Need Global Leaders? Identifying Leadership Competences in Multinational Teams. In Shapiro DL (ed.) *Managing Multinational Teams: Global Perspectives*. Amsterdam: Elsevier, 281-301.
- Katz, D., & Kahn, R. L. (1978). *The Social Psychology of Organization*. NY: John Wiley and Sons.
- Kiesler, S., J. Cummings. 2002. What do we know about proximity and distance in work groups? A legacy of research. P. Hinds, S. Kiesler, eds. *Distributed Work*. MIT Press, Cambridge, 55–81
- Kim, T., Cable, D. M., & Kim, S. (2005). Socialization tactics, employee proactivity, and person-organization fit. *Journal of Applied Psychology*, 90, 232–241
- Kirkman, B. L. Rosen, B. Gibson, C. B. Tesluk, P. E. & McPherson, S. (2016). Five challenges to virtual team success. *Academy of Management Executive*, 16(3), 67-79.
- Koontz, H. O'Donnell, C. & Weihrich, H. (1990). *Management*. 5th Edition. Tokyo: McGraw-Hill Book Company
- Kozlowski, S. W. J., & Bell, B. S. (2003). Work groups and teams in organizations. In W. C. Borman, D. R. Ilgen, & R. J. Klimoski (Eds.), *Handbook of psychology: Industrial and organizational psychology*, 12: 333-375. London: Wiley
- Kozlowski, S. W. J., & Ilgen, D. R. (2006). Enhancing the effectiveness of work groups and teams. *Psychological Science in the Public Interest*, 7: 77-124.

- Lacerenza, C. N., Reyes, D. L., Marlow, S. L., Joseph, D. L., & Salas, E. (2017). Leadership training design, delivery, and implementation: A meta-analysis. *Journal of Applied Psychology*, 102(12), 1686-1718.
- Larson, B., Leung, O., & Mullane, K. (2017). Tools for teaching virtual teams: a comparative resource review. *Management Teaching Review*, 2(4), 337-347.
- Lilian, S. C. (2014). Virtual teams: Opportunities and challenges for e-leaders. *Procedia Social and Behavioral Sciences*, 110, 1251-1261.
- Lipińska, A. (2015). Knowledge management in a virtual organization. *Jagiellonian Journal of Management*, 1, 65–76.
- Lu, Y. & Ramamurthy, K. (2011). Understanding the link between information technology capability and organizational agility: An empirical examination. *MIS Quarterly*, 35 (4), 931-954.
- Lumpkin, G.T. & Dess, G.G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review*, 21, 135–172.
- Majchrzak, A. Malhotra, A. Stamps, J. & Lipnack, J. (2012). Can absence make a team grow stronger? *Harvard Business Review*, May, 137-144
- Malhotra, A. & Majchrzak, A. (2015). Virtual workspace technologies: Enabling virtual teams. *Sloan Management Review*, 46(2), 11-14.
- McManus, S., Seville, E., Vargo, J., & Brunsdon, D. (2008). Facilitated Process for improving Organizational Resilience. *Journal National Hazards Review*, 9, 81-90.
- Miles, R. E., & Snow, C. C. (2003). *Organizational Strategy, Structure, and Process*. New York: McGraw-Hill.
- Morgan, N. A. (2012). Marketing and business performance. *Journal of the Academy of Marketing Science*, 40, 102-119.
- Mostafa, A. M. S. (2017). High-performance HR practices, positive affect and employee outcomes. *Journal of Managerial Psychology*, 32(2), 163–176.
- Mwaniki, M. F. (2014). *Virtual Workforce in the Kenya's Higher Education and Research service Sector* (Masters Thesis). Nairobi: University of Naitobi.
- Orta-Castañon, P. U.-C.-G.-d.-M.-M. (2018, 12 1). Social collaboration software for virtual teams: case studies. *International Journal on Interactive Design and Manufacturing (IJIDeM)*, 12(1), pp. 15-24.15-24.

- Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1988). SERVQUAL: a multiple item scale for measuring consumer perceptions of service quality, *Journal of Retailing*, 64(5), 21- 40
- Pehrsson, A. (2014). Firms' customer responsiveness and performance: The moderating roles of dyadic competition and firm's age. *Journal of Business Industrial Marketing*, 29(1), 34-44.
- Pfano, M. & Beharry, A. (2016). The effect of modern office technology on management performance: Durban Westville. *Problems and Perspectives in Management*, 14(2-2)..
- Reid, M., Lxton, S., & Mavondo, F. (2005). The relationship between integrated marketing communication, market orientation, and brand orientation. *Journal of Advertisement*, 34(4), 11-23.
- SAP. (2018, February 7). SAP Success Story: Using Virtual Meetings to Connect Global Workers Simply and Securely | PGI. Web Conferencing, Audio Conferencing & Collaboration Solutions. From <https://www.pgi.com/resources/case-studies/sapsuccess-story-using-virtual-meetings-connect-global-workers-simply-securely/>.
- Starr, R., Newfrock, J. & Delurey, M. (2003b). Enterprise resilience: Managing risk in the networked economy. *Strategy and Business*, 3 (30), 2-10
- Tallon, P.P. & Pinsonneault, A., 2011. Competing perspectives on the link between strategic information technology alignment and organizational agility: Insights from a mediation model. *MIS Quarterly*, 35 (2), 463-486.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18(7), 509-533.
- Thongsodsang, C., & Ussahawanitchakit, P. (2011). Dynamic marketing capability, marketing outcomes and marketing growth: evidence from foods and beverages businesses in Thailand. *International Journal of Business Strategy*, 11, 49-66.
- Tugade, M. M. & Fredrickson, B. L (2004). Resilience Individual use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86(2), 320-333.
- Wanberg, C. R., & Kammeyer-Mueller, J. D. (2000). Predictors and outcomes of proactivity in the socialization process. *Journal of Applied Psychology*, 85, 373–385
- Wang, D., Su, Z. & Yang, D. (2011). Organizational culture and knowledge creation capability. *Journal of Knowledge Management*, 15(3), 363–373.
- Wegge, J., Van Dick, R., Fisher, G. K., West, M. A. & Dawson, J. F. (2006). A test of basic assumptions of Affective Events Theory (AET) In Call Centre Work". *British Journal of Management*, 17, 237-254.

- Wei, Y., & Wang, Q. (2011). Making sense of market information system for superior performance: The roles of organizational responsiveness and innovation strategy. *Industrial Marketing Management*, 40, 267-277.
- Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behaviour: An annual series of analytical essays and critical reviews*, 18, 1-74. US: Elsevier Science/JAI Press.
- Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews*, Vol. 18, pp. 1–74). Elsevier Science/JAI Press.
- Yu, W., Jacobs, M.A., Salisbury, W.D., Enns, H. (2013). *The effects of supply chain integration on customer satisfaction and financial performance: An organizational learning perspective. International Journal of Production Economics*, 146 (1), 346-358.
- Zaccaro, S. & Bader, P. (2014). E-Leadership and the Challenges of Leading ETeams: Minimizing the bad and maximizing the Good: *Organizational Dynamics*, 31, 377–387.
- Zbar, J. (2002). Teleworking & Telecommuting. Deerfield Beach, FL: Made E-Z Products Inc.
- Zhou, K. Z., & Li, C. B. (2010). How strategic orientations influence the building of dynamic capability in emerging economies. *Journal of Business Research*, 63, 224-231.