



Human Resource Database Security and Employee Productivity in Telecommunication Companies in South-South, Nigeria

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Abstract: *This study examined the relationship between human resource database security and employee productivity in telecommunication companies in South-South, Nigeria. The study adopted the cross-sectional research survey design. Primary data was generated through structured questionnaire. The population of this study was made up of 162 employees, managers and supervisors of the four telecommunication companies in South-South, Nigeria. Since the entire population of 162 employees of the four (4) telecommunication companies in South-South, Nigeria was small, the entire population was adopted as a census. The research instrument was validated by experts while the reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient. The tests were carried out at a 0.05 significance level. The findings revealed that there is a significant relationship between human resource database security and employee productivity in telecommunication companies in South-South, Nigeria. Therefore, based on the findings, this study concludes that human resource database security enhances in a positive way the productivity of employees in telecommunication firms in Nigeria. Hence the study recommends that telecommunication companies should look out for a more secure human resource database management system that will ensure utmost confidentiality of stored employee data that will not be easily compromised or breached*

Keywords: *Human Resource Database Security, Employee Productivity, Timeliness, Achievement, Employee Innovativeness.*

INTRODUCTION

The business environment is progressively more competitive and firms are forced to advance their level of competencies and enlarge their capabilities so as to be more cost effective, creative and more competitive in the industry (Awan & Tahir, 2015). Firms' ability to compete depends on their financial strength, resources; tangible (facilities) and intangible resources (patents), technical knowhow and their employees. The most tactical of these resources is the employee. Employees are mainly considered as the main support for a business and most instrumental in its development (Mosammod & Kabir, 2011). They are the most important tool and essential part of an industry through which productions are managed (Alamdard, Muhammad, & Wasim, 2012). They are trusted with the optimal usage of the industry's supply in achieving daily tasks and the

broad aims and purpose of the firm. Besides, there is greater reliance on employees' intellectual capabilities in industries rather than on physical inputs.

Alamdar et al. (2012) discovered that over the years, no industry is known to have reached and maintained a soaring rate of productivity without a rational number of good employees. The combination of competent employees, equipment and set of procedures adopted and involved in a firm will determine their level of productivity. In spite of a business size, higher employee productivity is very crucial in its profits enhancement and competitive stability in the industry. Industries have begun to realize the significance of employee productivity and are discovering new means of attaining productivity by the adoption of new and better technology, offering conducive work environments, flexible timing, good pay and benefits, organisational commitment, supervision, promotion and advancement opportunities among others (Shane, 2017). Productivity sustainability should not only depend on employees alone; the firm should create an accommodating work culture and environment. Industries can keep their productivity high by encouraging their employees to achieve more.

According to Garlēja and Skvorcova (2015), the social status of a person depends on regular information streams. Information connections with outer world create opportunities for people's activities – especially socially important information. In this case the quality, quantity and content of the information is important. Shortage of information can lead to person's abnormal development and psychological changes. So called information hunger" is felt in certain circumstances and it can be dangerous for person's development Information is one of the important corporation back-ups. In the last thirty years the information quantity was growing (Zeleny, 2020), and because of the technology development it became possible to receive the information from different sources and very quickly (Hicks, 2016). According to Herms (2014), information became a modern capital. The purpose of this paper therefore was to examine the relationship between human resource database security and employee productivity in telecommunication companies in South-South, Nigeria. The specific objectives of the study included to:

- i. Examine the relationship between human resource security management and timeliness of work in telecommunication companies in South-South, Nigeria?
- ii. Determine the relationship between human resource security management and achievements of targets in telecommunication companies in South-South, Nigeria?
- iii. Access the relationship between human resource security management and employee innovativeness in telecommunication companies in South-South, Nigeria?

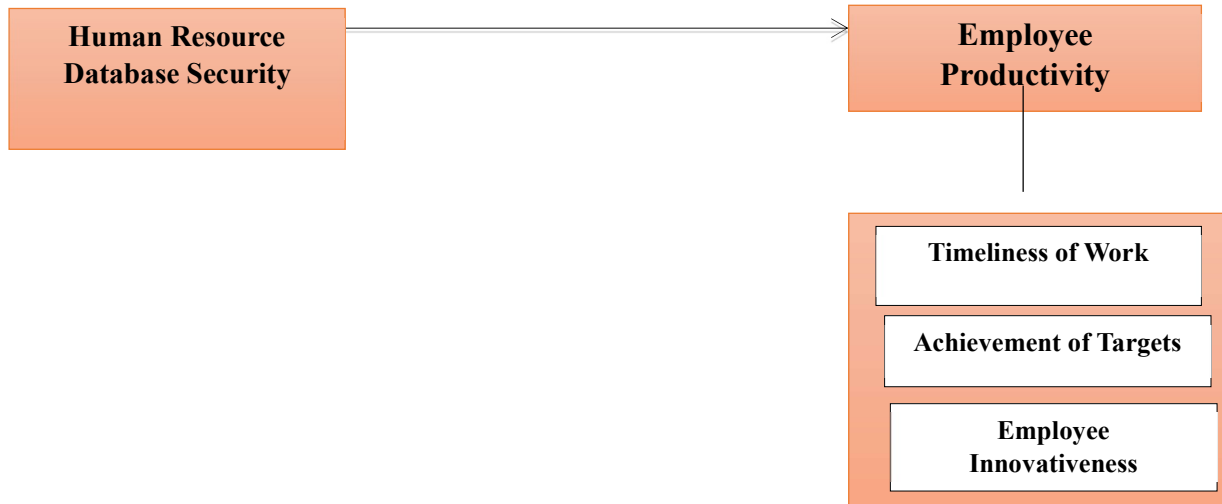


Figure 1: conceptual model for the relationship between human resource data security and employee productivity.

Source: Desk Research (2022)

LITERATURE REVIEW

Theoretical Foundation:

Technology Acceptance Model (TAM)

Technology Acceptance Model (TAM) was proposed by Davis (1989). Although, it was extended to TAM2 (Venkatesh & Davis, 2000) to explain perceived usefulness and usage intentions including social and cognitive influence. Subsequently, it was stretched to create a new version aka TAM3 (Venkatesh & Bala, 2008) to incorporate anchors and adjustments factors to perceived ease of use. However, Bernadette (1996) reports that the original TAM is more appropriate as compared with the later extensions. It is one of the models which provide the foundation for unveiling the influence of external variables on the adoption decisions based on the economic, usability and behavioral grounds.

The original TAM states that perceived usefulness is a major determinant of people's intention to use technological innovation (Davis, 1989). It further proposes that the degree to which an IT system will be accepted is related to perceived usefulness (PU) and perceived ease of use (PEOU). PU can be defined as the user's perception in terms of the likelihood that the innovation will increase their job performance within an organizational context. While PEOU is defined as the degree of the user's expectation that innovation or system to be adopted can be free of effort (Davis, 1989). But unfortunately, it is being criticized for focusing more on technological aspect and not considering the effects of organizational and human factors viz-a-viz., the influence of external variables (Shih, Shih, Li, Chen, Chen & Chen, 2011; Wayne, 2016; Wu, Li, & Fu, 2011; Yarbrough & Smith, 2007). Notwithstanding, researchers have advocated the inclusion of customized variables and advocates for considering beyond the technical perspective (Marc, 2011; Shabir & Padma, 2017). Park (2009) reported that variables related to the actual use of information technology could be grouped into four categories: human context, technology context, social context, and organizational context. Here the social context means social influence

on personal acceptance of technology usage and organizational context emphasizes the organization's influence or support related to information technology use.

HR Database Security

Information assets such as data, information and software have become important assets to an organisation, and improper protection, as noted by Von Solms and Von Solms (2005:1) "could have profound business and legal implications". Von Solms and Von Solms further contend that, "the scope of information security is much wider than just (directly) protecting the data, information and software of a business" (Von Solms and Von Solms, 2005:1). It is therefore arguable that information security is the responsibility of executive management, while executive management sees it as the duty of the security officer in the organisation. To better understand information security management in a university of technology, it was vital to understand what information security entails, and therefore the following areas – information security policy and regulation, human resource systems and infrastructure, and users were reviewed.

Herath and Rao (2009: 1) argue that, "although most organizations have long been using information security technologies, it is well known that technology tools alone are not sufficient". Thus, the area of end-user security attitude in organizations has drawn an attention of information security vulnerabilities that this research also intends to validate. Herath and Rao (2009:1) further argue that, observing end-user security behaviours is challenging. However, one should be mindful of Viljoen's (2008:13) argument that, "information security is not the sole responsibility of security experts with technical confidence". Viljoen further argues that every member of the organisation plays a role and shares responsibility for the organisation's information security. If every member of an organisation is to share responsibility for information security, it should be possible for an organisation to manage its information security (Viljoen, 2008).

Database security involves deploying tools and technologies that enhance the organization's visibility into where its critical data resides and how it is used. It is also defined as the process of protecting the database from unauthorized access, modification or destruction. Thus, a complete solution to data security must meet the following three requirements: 1) secrecy or confidentiality refers to the protection of data against unauthorized disclosure, 2) integrity refers to the prevention of unauthorized and improper data modification, and 3) availability refers to the prevention and recovery from hardware and software errors and from malicious data access denials making the database system unavailable.

According to Herath and Rao (2009:2), "the objective of any organizational policy is to influence and determine employees' course of action. While the defined policies may be crystal clear and detailed, the result may not turn out to be as desired, especially with regard to information security". Information security governance is and continues to be the responsibility of executive management and each stakeholder within the organisation. The question remains whether this responsibility is exercised, as it should be. As highlighted by Armoni (2002:1), "every organization should be concerned about protecting data against intruders, for the organization's ability to survive depends on the availability, comprehensiveness and reliability of its financial and

organizational data". Failure to acknowledge the danger of losing valuable information assets in today's business environment causes an organisation to fall prey to unauthorised access to the organisational network systems.

Concept of Employee Productivity

Employee productivity can be thought of as how effectively organizations and the people working in them produce value from available inputs, Cheese (2015). According to Joshi and Balyan (2011), Employee Productivity also known as labour productivity is known as the output per person or system. Samnani and Singh, (2014) define productivity as the ratio of outputs to inputs. It refers to the volume of output produced from a given volume of inputs or resources. If the firm becomes more productive, then it has become more efficient, since productivity is an efficiency measure. Productivity in itself has so many benefits to the organization, Chen, et al (2015) believe that it translates to real income and that means that the firm can meet its duties to customers, suppliers, employees, shareholders and government (taxes and regulation) and still remain competitive or improve its competitiveness in the market place. Onyije (2015) looks at productivity not so differently from other researchers, according to him high productivity levels translate into lower unit costs and it is one of the drivers of success in the organization. It is growing the business in a way where the employees and the employer are satisfied.

Employee productivity is referred to as labour productivity because it was originally studied only with respect to the work of labourers as opposed to managers or professionals (Scarth, 2002). According to Mathis and John (2003), productivity is a measure of the quantity and quality of work done, considering the cost of the resources used. The more productive an organization, the better its competitive advantage, because the costs to produce its goods and services are lower. Better productivity does not necessarily mean more is produced; perhaps fewer people (or less money or time) was used to produce the same amount. McNamara (2003) further states that, results are usually the final and specific outputs desired from the employee. Results are often expressed as products or services for an internal or external customer, but not always. They may be in terms of financial accomplishments, impact on a community; and so whose results are expressed in terms of cost, quality, quantity or time. He further notes that measuring productivity involves determining the length of time that an average worker needs to generate a given level of production. You can also observe the amount of time that a group of employees spends on certain activities such as production, travel, or idle time spent waiting for materials or replacing broken equipment. The method can determine whether the employees are spending too much time away from production on other aspects of the job that can be controlled by the business.

Measures of Employee Productivity

Timeliness of Work

Timeliness of work is a measure of employee productivity. Timeliness measures whether a unit of work was done correctly and on time, given that time is the most crucial resource to be considered in the performance of any activity. Time determines the imperativeness of any other resources in accomplishing organizational set out objectives and goals (Ugwulashi, 2011). It is an essential resource every manager needs to achieve the goals and objectives of an organization

(Adejo, 2012). Time, according to Nwaiwu (2000), is the interval between the beginning and the end of an operation. It is so delicate that it cannot be saved but can only be spent and once misused it can never be regained. Time is an immaterial resource, inelastic, scarce and erodes fast and once spent, cannot be won back, stored or recalled for use (Kalu, 2012). It is an essential resource; it's irrecoverable, limited and dynamic. Irrecoverable because every minute spent is gone forever, limited because only 24 hours exist in a day and dynamic because it is never static (Adejo, 2012). Managing time appropriately leads to achieving results easily with limited resources. Consequently, any productive system, whatever its structure, human, technology or financial support requires efficient and effective time management procedure. Consequently, Mullins (1999) refers time as one of the most valuable, but limited resources and it is important that administrators utilize time to the maximum advantage. For not realizing time as a scarce resource most employees run out of time before expected result is achieved and this negatively affects their productivity level.

Maduagwu and Nwogu (2006) notes that, every activity is allocated some frames within which an activity is to be accomplished within factory floor. Timeliness is also important for effective inspection and supervision in the academic workplace in bringing the much needed quality. Effective time process ensures unambiguous objectives, proactive planning, well defined priorities and actions; participatory and successful delegation of activities. Nevertheless, time is continuum and all activities or roles performance depend on it whether voluntary or involuntary in avoiding conflicts. According to Hisrich and Peters (2002), time is a unique quantity an entrepreneur (manager) cannot store it, rent it, and buy it. Everything requires it and it passes at the same rate for everyone. Time management involves investing time to determine what one wants out of his activities. Effective time management is the investment of time in such a way that optimal result is gotten from activities consuming a specific time quantity. Time management hinges on the principle that it is more important to do the right things than to do things right. The ability to choose between the important and the unimportant and be persistent on the correctly chosen sequence is the key determinant of effectiveness in time management.

Achievement of Targets

Task accomplishment is a measure of an employee's productivity and involves their contribution to overall organizational productivity and effectiveness, it refers to actions that are part of the formal reward system and addresses the prescription as indicated in the descriptions of the role (Williams and Karau, 1991). It shows the level or the extent an employee achieves a given target. In general, task accomplishment comprises of activities that translates the organizations policies, missions and resources into tangible and intangible goods produced by the organization and to enable efficient operation of the organization (Motowidlo et al., 1997). Thus, task accomplishment covers the fulfilment of the requirements that are part of the agreement between the employee and the organisation. Borman and Motowidlo (1993) pointed out that task accomplishment is the effectiveness and efficiency with which job incumbents perform activities that contribute to the organization's technical core and assist in moulding the psychological state of the organization (Borman and Motowidlo, 1993). They further suggested that in accomplishing a given task there are two aspects to it, which are interpersonal facilitation

and job dedication. Interpersonal facilitation includes cooperative and helpful acts that help the effectiveness of co-employee. While job dedication includes self-disciplined and motivation to support organizational objectives and goals (Van Scotter and Motowidlo, 1996).

Employee Innovativeness

Innovativeness of employees is measured by the propensity by which they innovate in their work (Miller and Friesen 1982); their willingness to try new ways which are different from the existing; the enthusiasm to adopt new ideas or new methods to their work operation; and the eagerness to implement the innovation strategy in their work (Khandwalla 1987). Innovativeness reflects a employee's tendency to engage in and support new ideas, novelty, experimentation and creative processes (Lumpkin and Dess, 1996) that may result in new products, services, or technological processes and which may take the organization to a new paradigm of success (Swieczczek and Ha, 2003). It also implies seeking creative, extraordinary or strange solutions to problems and needs. Schumpeter (1934) considered employees to be essentially a creative activity and entrepreneur as an innovator who carries out new combinations in the field of men, money, material, machine and management. According to him, an entrepreneur is an economic man who tries to maximize his profits by making innovations in any one of the following fields: (1) new products; (2) new production methods; (3) new markets; or (4) new forms of organization.

Employee innovativeness can be defined as an engagement in innovative behaviours, which includes behaviours related to the innovation process, i.e. idea generation, idea promotion and idea realization with the aim of producing innovations (Ramamoorthy, Flood, Slaterry & Sardesai 2005). Innovations which have to do with the implementation or adoption of novel ideas can in turn be categorized as either technological (changes in products, services, production processes) or administrative (changes in activities, social processes, structures), and as either radical or incremental, depending on the extent of their influence for existing products or processes (Damanpour 1991). Employee innovativeness can thus be examined throughout the innovation process, from the initial idea generation to product development and eventually to product commercialization, or to the adoption of new processes or structures in the organization (Vincent, Decker & Mumford, 2002).

From the foregoing discourse, the study hypothesized thus:

Ho₁: There is no significant relationship between human resource database security and timeliness of work in telecommunication companies in South-South, Nigeria.

Ho₂: There is no significant relationship between human resource database security and achievement of targets in telecommunication companies in South-South, Nigeria.

Ho₃: There is no significant relationship between human resource database security and employee innovativeness in telecommunication companies in South-South, Nigeria.

METHODOLOGY

The study adopted a cross sectional survey research design. The population of this study was made up of 162 employees, managers and supervisors of the four telecommunication companies in South-South, Nigeria. Since the entire population of 162 employees of the four (4) telecommunication companies in South-South, Nigeria was small, the entire population was

adopted as a census. Primary data was collected using a 5-point Likert scaled questionnaire. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient with the aid of Statistical Package for Social Sciences version 23.0 as shown below:

DATA ANALYSIS AND RESULTS

Table 1 shows the result of correlation matrix obtained for human resource database security and measures of employee productivity. Also displayed in the table is the statistical test of significance (p - value), which makes us able to answer our research question and generalize our findings to the study population.

Table 1 Correlations Matrix for HR Database Security and Measures of Employee Productivity

			HR Database Security	Timelines s of Work	Achievement of Targets	Employee Innovativenes s
Spearman's rho	HR Database Security	Correlation Coefficient	1.000	.741**	.684**	.892**
		Sig. (2-tailed)	.	.000	.000	.000
		N	143	143	143	143
	Timeliness of Work	Correlation Coefficient	.741**	1.000	.890**	.846**
		Sig. (2-tailed)	.000	.	.000	.000
		N	143	143	143	143
	Achievement of Targets	Correlation Coefficient	.684**	.890**	1.000	.790**
		Sig. (2-tailed)	.000	.000	.	.000
		N	143	143	143	143
	Employee Innovativeness	Correlation Coefficient	.892**	.846**	.790**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	143	143	143	143

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

Source: SPSS Output version 23.0

H₀₁: There is no significant relationship between human resource database security and timeliness of work of telecommunication companies in Nigeria.

Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.741 on the relationship between human resource database security and timeliness of work. This value implies that a strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive; implying that an increase in timeliness was as a result of the adoption of HR database security. Therefore, there is a strong positive correlation between HR database security and timeliness of work of telecommunication firms in South-South, Nigeria. Similarly displayed in the table 1 is the statistical test of significance (p-value) which makes possible the generalization of our findings to the study population. From the result obtained from table 1, the

sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between human resource database security and timeliness of work of telecommunication companies in Nigeria.

H₀₂: There is no significant relationship between human resource database security and achievement of targets of telecommunication companies in Nigeria.

Similarly, Table 1 shows a Spearman Rank Order Correlation Coefficient (ρ) of 0.684 on the relationship between human resource database security and achievement of targets. This value implies that a strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive; implying that an increase in achievement of targets was as a result of the adoption of HR database security. Therefore, there is a strong positive correlation between human resource database security and achievement of targets of telecommunication firms in South-South, Nigeria. Also displayed in the table 1 is the statistical test of significance (p -value) which makes possible the generalization of our findings to the study population. From the result obtained from table 1, the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between human resource database security and achievement of targets of telecommunication companies in Nigeria.

H₀₃: There is no significant relationship between human resource database security and employee innovativeness of telecommunication companies in Nigeria.

Furthermore, Table 1 shows a Spearman Rank Order Correlation Coefficient (ρ) of 0.892 on the relationship between human resource database security and employee innovativeness. This value implies that a strong relationship exists between the variables. The direction of the relationship indicates that the correlation is positive; implying that an increase in employee innovativeness was as a result of the adoption of HR database security. Therefore, there is a very strong positive correlation between human resource database security and employee innovativeness of telecommunication firms in South-South, Nigeria. Also displayed in the table 1 is the statistical test of significance (p -value) which makes possible the generalization of our findings to the study population. From the result obtained from table 1, the sig- calculated is less than significant level ($p = 0.000 < 0.05$). Therefore, based on this finding the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between human resource database security and employee innovativeness of telecommunication companies in Nigeria.

DISCUSSION OF FINDINGS

The findings revealed that there is a positive significant relationship between human resource database security and employee productivity in telecommunication firms in Nigeria. This finding agrees with the empirical study of Lemchi, Oparanma and Ejo-Orusa (2018) conducted a similar study on management information system and organizational performance of Seven-Up Bottling company in Aba and Port Harcourt. The study findings reveal that there is a positive significant

relationship between management information system and organizational performance of Seven Up bottling company in Aba and Port Harcourt. The study concludes that management information system bears a positive and significant influence on organizational performance.

This study is also supported by the works of Oyibo, Tamunomiebi, Gabriel and Asawo (2021) investigated strategic human resources information system and workers' adaptive performance of deposit money banks in south-south Nigeria. The purpose of this paper was to ascertain the nature of the relationship between strategic human resources information system and workers' adaptive performance of deposit money banks in South-South Nigeria. Findings show that strategic human resources information system contributes significantly towards adaptive learning, creativity and worker flexibility. It was therefore concluded that organizational actions and decisions that anchor on and utilize strategic human resources information system drives and enhances outcomes of adaptive learning, creativity and worker flexibility, thus leading to workers' adaptive performance within deposit money banks in the South-South of Nigeria. To further support this, Eze, Agboola, & Aremu (2021) conducted a related study on Management information system and firms' performance in a developing economy: Evidence from the manufacturing sector in Nigeria. This study examined the effect of MIS on manufacturing firms' performance in Nigeria, by using two elements of MIS, namely the decision support system (DSS) and the executive information system (EIS). The findings revealed that the two elements of MIS employed for this study (DSS and EIS) have an individual significant positive effect on manufacturing firms' performance. It concluded that MIS elements (DSS and EIS) are important determinants of manufacturing firms' performance.

CONCLUSION AND RECOMMENDATIONS

The study therefore concludes that HR database security positively enhance the productivity of employees in telecommunication firms in Nigeria. Implying that when HR records are maintained with accuracy, timeliness and confidentiality it improves employee productivity. The positive relationship between human resource database security and employee productivity emphasizes the importance of safeguarding sensitive human resource information. In an era where data breaches and unauthorized access pose substantial risks, ensuring the security of HR databases becomes a critical factor in maintaining employee trust and protecting confidential information.

Hence the study recommends that telecommunication companies should look out for a more secure HR database management system that will ensure utmost confidentiality of stored employee data that will not be easily compromised or breached. This is grounded in the understanding that enhancing the security of HR databases is imperative for safeguarding the confidentiality of stored employee data, mitigating the risks of compromise or breach.

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