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

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Abstract: This study examined the relationship between Human Resource Database Management 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 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 Statistics. The tests were carried out at a 0.05 significance level. The findings revealed that there is a significant relationship between human resource database management and employee productivity in telecommunication companies in South-South, Nigeria. Therefore, based on the findings, this study concludes that human resource database management enhance in a positive way the productivity of employees in telecommunication firms in Nigeria. Hence, the study recommends that HR managers in telecommunication companies should improve upon the current quality of their HR database information to improve employee productivity. This could be achieved by investing more in making better record keeping, completing paperwork and managing data of employee to equip managers make better strategic decision- making data.

Keyword: Human Resource Database Quality Management, Employee Productivity, Timeliness, Achievement, Employee Innovativeness

INTRODUCTION
The modern business landscape is increasingly competitive, compelling firms to enhance their competencies and expand their capabilities to achieve greater cost-effectiveness, innovation, and competitiveness (Awan & Tahir, 2015). Success in this environment depends heavily on a company's financial strength, tangible and intangible resources, technical expertise, and workforce. Among these, employees are the most strategic asset,

serving as the cornerstone of business support and growth (Alarcon et al., 2021). They play a critical role in managing production processes and utilizing resources effectively to meet daily objectives and broader organizational goals. As industries shift towards prioritizing intellectual capabilities over physical inputs, the reliance on skilled employees becomes even more significant (Alamdar et al., 2012).

Research indicates that high productivity levels are unattainable without a sufficient number of competent employees. A firm's productivity is influenced by its workforce, equipment, and operational procedures. Regardless of business size, employee productivity is essential for profitability and competitiveness. Organizations increasingly recognize this and are adopting strategies such as advanced technology, flexible work arrangements, competitive compensation, and opportunities for growth to boost productivity (Shane, 2017). However, sustainable productivity requires more than individual effort; it necessitates a supportive work culture and environment that motivates employees to excel.

Moreover, human resource database management plays a vital role in shaping organizational culture, fostering collaboration, and addressing evolving informational needs. Effective database management not only supports decision-making but also enhances the overall success of an organization by ensuring timely and relevant use of data (Augustinaitis & Macevičiūtė, 2016). In today's information-driven economy, no corporation can function effectively without leveraging modern database technologies. These systems facilitate the acquisition, generation, and renewal of information, which are critical for maintaining a competitive edge. The purpose of this paper therefore was to examine the relationship between human resource database quality management and employee productivity in telecommunication companies in South-South, Nigeria. The specific objectives of the study included:

i. What is the relationship between human resource database quality management and timeliness of work in telecommunication companies in South-South, Nigeria?

ii. What is the relationship between human resource database quality management and achievements of targets in telecommunication companies in South-South, Nigeria?

iii. What is the relationship between human resource database quality management and employee innovativeness in telecommunication companies in South-South, Nigeria?
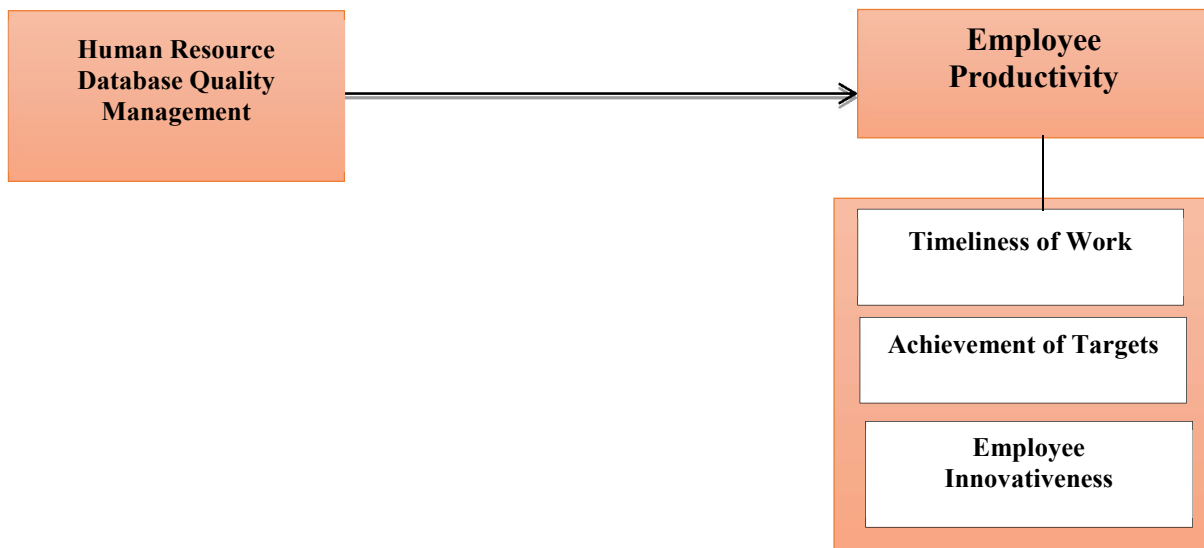
Figure 1: conceptual model for the relationship between human resource database quality management and employee productivity.
Source: Desk Research (2024)
LITERATURE REVIEW
Theoretical Foundation
Human Capital Theory (Becker 1962 and Rosen 1976)

Human capital theory, originally developed by Becker (1962) and Rosen (1983), emphasizes that workers possess a set of skills and abilities that can be enhanced through education and training. This paper is grounded in the principles of human capital theory. The concept of human capital can be traced back to Schultz (1962), who initially defined it as the "knowledge, skills, and abilities of individuals employed in an organization." While this definition captured its essence, Schultz later revised it to include the idea of value and investment, describing human capital as "all human abilities, either innate or acquired, that are valuable and can be augmented through appropriate investment" (Schultz, 1981).

The theory underscores the significance of investing in employees to increase their value to the organization and their earning potential. Alnachef and Alhaijar (2015) highlighted three primary objectives for such investments: enhancing the value of human capital to the organization, improving its revenue-generating capacity, and aligning it with the organization's goals. These principles shape the dynamics of employer-employee relationships and organizational exchanges. Horokhivska (2019) emphasized the importance of structured learning and development programs tailored to the organizational environment, asserting that transformation through education and self-improvement is a collective responsibility.

In the context of small-scale business owners, human capital theory associates the founder's knowledge and experiences with improved business survival rates (Bruederl et

al., 1992). It conceptualizes human capital as a resource, suggesting that skills and knowledge derived from experience can positively impact performance. However, while managerial experience or education often correlates with success, these factors may not always serve as strong predictors in specific contexts (Bruederl et al., 1992; Rauch & Frese, 2006). Despite this, human capital remains a critical component in understanding the relationship between individual development and organizational success.

Adaptive Structuration Theory (AST)

Adaptive Structuration Theory (AST), introduced by Gerardine DeSanctis and Marshall Scott Poole in 1994, explores the interplay between information systems and organizational structures. The theory posits that information systems and organizations are deeply interconnected. AST is particularly relevant in contemporary settings due to the pervasive influence of advancing technologies, especially in the context of human-computer interaction and its application in areas like socio-biologically inspired structuration for security software.

AST offers a framework for understanding how interactions between emerging technologies, social structures, and human behavior shape organizational dynamics. It emphasizes the social structures, rules, and resources embedded in information technologies as the foundation for human activity. According to the theory, organizations function as systems of communication, where groups form through dialogue. Initially, individuals express their expectations and establish rules that define the group's structure. Over time, as the group navigates decision-making processes, members identify limitations in the existing structure and adapt the rules to address evolving needs.

The theory also highlights that organizational stability depends on adaptability. As members encounter new challenges, utilize different resources, or experience environmental shifts, they adjust the group's structure to maintain equilibrium. This iterative process of communication and adaptation ensures that organizational systems remain flexible and responsive to change. AST thus provides a valuable lens for analyzing how technology and social interaction influence organizational practices and decision-making.

Human Resource Database Management

The Human Resource Database Management System (HRDBMS) has experienced substantial growth and transformation since its emergence in the 1960s (Lederer, 1984). Initially, these systems focused on basic record-keeping tasks and had limited functionality, as noted by Anitha and Aruna (2015). Early iterations involved digitizing manual records, with personnel staff primarily responsible for maintaining them, often without engaging in strategic or core business functions (Lippers & Swiercz, 2015; Kavanagh & Johnson, 2017). Over time, HRDBMS evolved into advanced systems capable of complex analytical tasks, significantly altering HR activities and their impact on employees, managers, and executives (Flynn et al., 2015). This shift reflects HR's transition from an administrative role to a more strategic position within organizations, driving the need for better integration and understanding of HR functions in contemporary settings.

Planning in HR includes forecasting labor needs, identifying skill requirements, and developing workforce strategies. Recruitment encompasses attracting, selecting, and aligning candidates with organizational needs. Development focuses on training, team-building, and skill enhancement, while deployment ensures appropriate role assignments and scheduling. Retention emphasizes employee satisfaction, motivation, compensation, and engagement, while assessment involves performance measurement and evaluation (Taniser, 2016).

DeSanctis (2016) describes HRDBMS as specialized systems that support HR planning, administration, and decision-making. However, Kavanagh and Johnson (2017) critique this definition for narrowing the system's scope, emphasizing its role in broader organizational adoption and process integration. Midiwo (2016) expands the definition further, arguing that HRDBMS involves more than just technology. It includes the people, policies, procedures, and data essential for effective HR management.

Database Quality Management

Database quality refers to the effectiveness and reliability of a system's outputs or products, characterized by several key features. According to Venkatesh and Davis (2006), output quality is the user's perception of how well the system supports their tasks. Information quality, as described by DeLone and McLean (2002), encompasses attributes such as accuracy, relevance, timeliness, reliability, conciseness, completeness, and format. These attributes are echoed by Seddon and Kiew (2015) and Venkatesh and Davis (2000), who emphasize the importance of providing timely, accurate, and relevant information in an appropriate format.

Human Resource Database Management Systems (HRDBMS) are expected to produce outputs that are accurate, consistent, relevant, and timely (Petter, DeLone, & McLean, 2008). Information quality is critical in HR systems due to the sensitive and confidential nature of HR data, which underpins important management decisions. A failure to ensure reliable information can have serious repercussions (Obeidat, Al-Dalahmeh, & Masa'deh, 2015).

Shibly (2011) highlights that the primary purpose of HRDBMS is to provide high-quality information to assist managers in decision-making. This requires data that is current, relevant, and presented in an accessible format to enhance user satisfaction (Wixom & Todd, 2015). Zaied (2012) adds that information quality can be evaluated through attributes such as completeness, understandability, security, availability, and accuracy. For instance, HRDBMS may generate reports on employee performance or salary details, which are used by line managers for critical decision-making.

DeLone and McLean (2003) underline that the success of HRDBMS, and technology systems in general, hinges on the quality of information they provide. Key characteristics of high-quality information include accuracy, precision, timeliness, reliability, completeness, and relevance (Obeidat, 2015). These elements are fundamental for accomplishing tasks, supporting decision-making processes, and ensuring overall business success. Thus, in the context of HR technology, information quality is a vital metric for evaluating system performance and utility.

Concept of Employee Productivity

Employee productivity, often referred to as labor productivity, measures how effectively organizations and their workforce generate value from available resources (Cheese, 2015). Joshi and Balyan (2012) describe it as the output generated by each individual or system, while Samnani and Singh (2014) define it as the ratio of outputs to inputs, representing the amount of output produced for a given set of resources. Increased productivity indicates enhanced efficiency, making it a crucial performance metric for organizations.

Productivity benefits organizations in various ways. Chen et al. (2015) argue that higher productivity leads to increased real income, enabling businesses to fulfill obligations to stakeholders, including customers, employees, shareholders, and governments, while maintaining or enhancing their competitiveness. Similarly, Onyije (2015) emphasizes that higher productivity reduces unit costs and supports organizational success, fostering a workplace where both employers and employees thrive.

Historically, labor productivity was studied concerning the output of laborers rather than managers or professionals (Scarth, 2002). Mathis and John (2003) define productivity as the balance between the quantity and quality of work done and the cost of resources used. A more productive organization enjoys a competitive advantage as lower production costs improve market positioning. This does not always involve producing more but may entail achieving the same output with fewer resources.

McNamara (2003) adds that productivity is typically measured by evaluating the specific outputs an employee generates, often expressed in terms of products or services for customers or other stakeholders. Measuring productivity involves analyzing how time is spent on production activities and identifying inefficiencies, such as delays caused by material shortages or equipment issues. This evaluation helps organizations optimize processes and better control aspects of the job that impact production time.

Measures of Employee Productivity

Timeliness of Work

The timeliness of work is a significant metric for assessing employee productivity. It evaluates whether a task was completed accurately and within the required timeframe, as time is a critical resource for achieving organizational objectives (Ugwulashi, 2011). Adeojo (2012) emphasizes that time is indispensable for managers in fulfilling organizational goals, defining it as the span between the start and finish of an activity. As a non-renewable and finite resource, time is inherently scarce and dynamic. Once expended, it cannot be recovered, stored, or reused (Kalu, 2012). Effective time management optimizes resource utilization, enabling the achievement of goals with minimal waste.

Time's value stems from its irrecoverable, limited, and ever-changing nature. Each day is constrained to 24 hours, requiring careful allocation to avoid lost productivity (Adeojo, 2012). Mullins (1999) underscores the importance of maximizing this finite resource for organizational success, noting that failure to treat time as scarce often results in unmet objectives and diminished productivity.

In industrial and academic contexts, timeliness is crucial for maintaining quality and avoiding operational conflicts. Maduagwu and Nwogu (2006) highlight that predefined timeframes guide task completion, while effective time processes foster clear objectives, proactive planning, and efficient delegation. Hisrich and Peters (2002) describe time as an irreplaceable asset—one that cannot be stored, rented, or purchased—making it essential for every endeavor.

Effective time management involves prioritizing activities to achieve optimal outcomes. This requires discerning between critical and non-critical tasks and adhering to a purposeful sequence of actions. Success in time management hinges on aligning efforts with key objectives, ensuring that every invested moment contributes meaningfully to desired results.

Achievement of Targets

Task accomplishment serves as a key indicator of employee productivity, reflecting their contributions to organizational effectiveness. It refers to actions that align with the formal reward systems and the prescribed role expectations detailed in job descriptions (Williams and Karau, 1991). It measures the degree to which an employee achieves assigned targets, directly translating organizational policies, missions, and resources into tangible and intangible outputs critical for operational efficiency (Motowidlo et al., 1997).

Task accomplishment represents the fulfillment of agreed-upon responsibilities between employees and their organizations. Borman and Motowidlo (1993) define it as the effectiveness and efficiency with which individuals perform activities contributing to the organization's core functions and psychological environment. They highlight two dimensions essential to task accomplishment: interpersonal facilitation and job dedication. Interpersonal facilitation involves cooperative and supportive actions that enhance team effectiveness, while job dedication reflects an employee's self-discipline and motivation to advance organizational goals (Van Scotter and Motowidlo, 1996).

Employee Innovativeness

Employee innovativeness refers to their inclination to introduce and adopt novel approaches within their work environment. This is characterized by employees' willingness to experiment with new methods, adopt fresh ideas, and implement innovative strategies in their operations (Miller & Friesen, 1982; Khandwalla, 1987). Innovativeness captures an employee's readiness to support creativity, experimentation, and the pursuit of new ideas that may lead to advancements like new products, technological processes, or services, potentially driving organizational success (Lumpkin & Dess, 1996; Swiezczek & Ha, 2003). It also encompasses the search for unique, imaginative, or unconventional solutions to organizational challenges (Schumpeter, 1934).

Schumpeter (1934) conceptualized employees as innovative agents, with innovation involving new combinations in areas such as labor, resources, technological methods, and organizational structure. According to him, innovation can focus on the introduction of new products, new markets, new production methods, or new forms of organizational structures. Employee innovativeness can be described as active engagement in

behaviors linked to the innovation process, such as idea generation, promotion, and realization, aimed at creating organizational innovations (Ramamoorthy et al., 2005).

Innovations may be technological—related to products, services, or processes—or administrative, which pertain to changes in structures, social processes, or organizational activities. They can also range from radical innovations with transformative effects to incremental ones with minor, gradual changes, depending on their impact (Damanpour, 1991). Employee innovativeness spans all stages of the innovation process, from the initial idea generation stage through development, product launch, or the integration of new processes into the organization (Vincent, Decker & Mumford, 2002).

From the foregoing discourse, the study hypothesized thus:

Ho$_1$: There is no significant relationship between human resource database quality management and timeliness of work in telecommunication companies in South-South, Nigeria.

Ho$_2$: There is no significant relationship between human resource database quality management and achievement of targets in telecommunication companies in South-South, Nigeria.

Ho$_3$: There is no significant relationship between human resource database quality management 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 HR database quality management 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 Quality Management and Measures of Employee Productivity

			HR Database Quality Management	Timeliness of Work	Achievement of Targets	Employee Innovativeness
Spearman's rho	HR Database Quality Management	Correlation Coefficient	1.000	.790**	.807**	.833**
		Sig. (2-tailed)	.	.000	.000	.000
		N	143	143	143	143
	Timeliness of Work	Correlation Coefficient	.790**	1.000	.890**	.846**
		Sig. (2-tailed)	.000	.	.000	.000
		N	143	143	143	143
	Achievement of Targets	Correlation Coefficient	.807**	.890**	1.000	.790**
		Sig. (2-tailed)	.000	.000	.	.000
		N	143	143	143	143
	Employee Innovativenes s	Correlation Coefficient	.833**	.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

H_{o1}: There is no significant relationship between human resource database quality management   and timeliness of work of telecommunication companies in Nigeria.

Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.790 on the relationship between human resource database quality management 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 of work was as a result of the adoption of HR database quality management. Therefore, there is a strong positive correlation between HR database quality management 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 quality management   and timeliness of work of telecommunication companies in Nigeria.

H_{o2}: There is no significant relationship between human resource database quality management   and achievement of target of telecommunication companies in Nigeria.

Similarly, Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.807 on the relationship between human resource database quality management and achievement of targets. This value implies that a very 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 quality management. Therefore, there is a very strong positive correlation between human resource database quality management 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 quality management   and achievement of targets of telecommunication companies in Nigeria.

H$_{o3}$ There is no significant relationship between human resource database quality management and employee innovativeness of telecommunication companies in Nigeria. Furthermore, Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.833 on the relationship between human resource database quality management and employee innovativeness. This value implies that a very 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 quality management. Therefore, there is a strong positive correlation between human resource database quality management and employee innovativeness. 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 quality management   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 quality management and employee productivity in telecommunication firms in Nigeria. This finding agrees with the study of Odira (2021) examined the effect of management information system on organizational performance in manufacturing firms. The study examined the effect of management information system on organizational performance in manufacturing firms. From the analyses tested, the study found out that Decision support system has significant effect on performance effectiveness in manufacturing firm, Process control system has significant effect on performance employee productivity in manufacturing firm, Artificial intelligence has significant effect on performance efficiency in manufacturing firm.

Also, in agreement with the findings of this study is Munirat (2014) examined the effect of management information system on organizational performance: applied study on Jordanian telecommunication Companies. This study looks at various challenges and prospect of MIS in Nigeria. The study was conducted in Federal Capital Territory, Abuja, North-Central Nigeria. The study recommends that business organization should introduce flexibility in the nature or pattern and structure of MIS, attention should also be paid to communication through the media agencies as a way of promoting company's control of the market as well acquiring appropriate and suitable computer software and program to meet MIS ever growing growth and expansion in the global business market environment.

CONCLUSION AND RECOMMENDATION

The study concludes that HR database quality management is important in enhancing the productivity of employees in telecommunication firms in Nigeria. Implying that it leads to increases in efficiency when it comes to making decisions in HR and such decisions would also increase in quality and as a result in the productivity of both employees and managers.

Therefore, the study recommends that HR managers in telecommunication companies should improve upon the current quality of their HR database information to improve employee productivity. This could be achieved by investing more in making better record keeping, completing paperwork and managing data of employee to equip managers make better strategic decision- making data. The HR database should focus on improving on training, include recruitment function on HR information system, and align the employee data or work to both personal and organization strategy.

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