Predictive Human Resource Analytics and Organizational Sustainability of Deposit Money Banks in South-South, Nigeria

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Abstract
This study investigated the relationship between Predictive Human Resource Analytics (HRA) and Organizational Sustainability of Deposit Money Banks in South-South, Nigeria. The study adopted the cross-sectional survey in its investigation of the variables. Primary source of data was generated through structured questionnaire. The population of this study was the 22 Deposit Money Banks in Nigeria since the entire population of 22 deposit money banks was adopted as a census. However, the respondents/ participants in the study were sixty six (66) Regional Managers of the 22 deposit money banks. The research instrument was validated by supervisor's vetting and approval while the reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70 from a pilot survey of twelve (12) respondents. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient. The tests were carried out at a 0.05 significance level. Findings from the study revealed that there is a significant relationship between Predictive Human Resource Analytics and organizational sustainability of deposit money banks in South-South, Nigeria. The study recommends that management of deposit money banks and HR practitioners need to incorporate the use of Predictive HRA in their HRM practice functions to get better results. Enhanced and effective HRM practice outcomes can be accomplished with the increased use of PHRA by practitioners.

Keywords: *Predictive Human Resource Analytics, Organizational Sustainability, Deposit Money Banks*

Introduction

Strategic decisions made on a daily basis to help sustain businesses and keep them afloat are on the rise. Organizations that seem to be proactive in this light have appeared to be reaping significantly from the benefits of having sustainable policies and practices. In the light of this, the concept of sustainability seem to have become prominent in management, environment, and socio-political issues, especially in press release, the political space, management meetings, and the milieu of academics. This may be one of the reasons Mohrman and Worley (2010) noted that debates and conversations about what it truly is, how essential it is, how to go about it, what should be done about it, and how rapidly and aptly society should respond to it are everywhere and on an upward trajectory. Organizations are in recent times bedeviled with the challenges arising from globalization, talent wars, recessionary economies, advances in technology, knowledge-based environment and changes in workforce demography (Etukudo, 2019). Being teleological in nature, that is, goal oriented and purpose-driven, organizations are naturally expected to carry out their operations into the foreseeable future since most of their goals have long-term focus. And in this regard, the need for sustainable actions becomes imperative if these goals are to be achieved. However, the current adverse trends has led to stiff market competition which has threatened sustainability of organizations especially the ones under pressure to demonstrate that they are adopting ethical and sustainable business practices. Nevertheless, there is little evidence in the academic literature to confirm the existence of a relationship between human resource analytics (HRA) and organizational sustainability, particularly in the emerging field of research. With the present dynamic and turbulent world economic realities, it has become imperative for corporate organizations to adopt human resource analytics (HRA) in its quest to attain sustainability goals.

Company leaders make significant investments in their HR; however, most HR leaders are unable to prove the value and return on such investments in employees. Human capital influences company performance the most (Momin, 2015), and human resource (HR) managers risk making wrong or inefficient decisions without detailed investigation of people related issues. Many HR leaders still use past trends, intuition, copying best practices, and benchmarks as the basis for decisions (Reddy & Lakshmikeerthi, 2017). While some HR leaders use metrics based on past data, the failure to integrate data from other sources limits the usefulness of metrics alone for HR managers to use to deliver performance-enhancing observations. HR related costs are among the highest costs for most companies and the inability to use HRA to understand the critical components and drivers of workforce costs may lead to unprofitable investment decisions (Jones & Sturtevant, 2016). In the current competitive environment, company leaders and HR managers should adopt HRA to maximize the potential of their HR.

Scholars and practitioners classify analytics into three levels; descriptive, predictive, and prescriptive (Narula, 2015; Sant, 2016; Talukdar, 2016). This paper focuses its attention on predictive human resource analytics. Predictive analytics involve using advanced statistical methods to analyze data on past trends and relationships to predict the future. Leaders may use predictive analytics to identify employees likely to quit their job or in recruiting to predict which candidates will best fit the position. The purpose of this study was to examine the relationship between human resource analytics and organizational sustainability of deposit money banks in South-South, Nigeria.

This study was guided by the following research questions:
i. What is the relationship between predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria?
ii. What is the relationship between predictive HR analytics and economic sustainability of deposit money banks in South-South, Nigeria?
iii. What is the relationship between predictive HR analytics and social sustainability of deposit money banks in South-South, Nigeria?
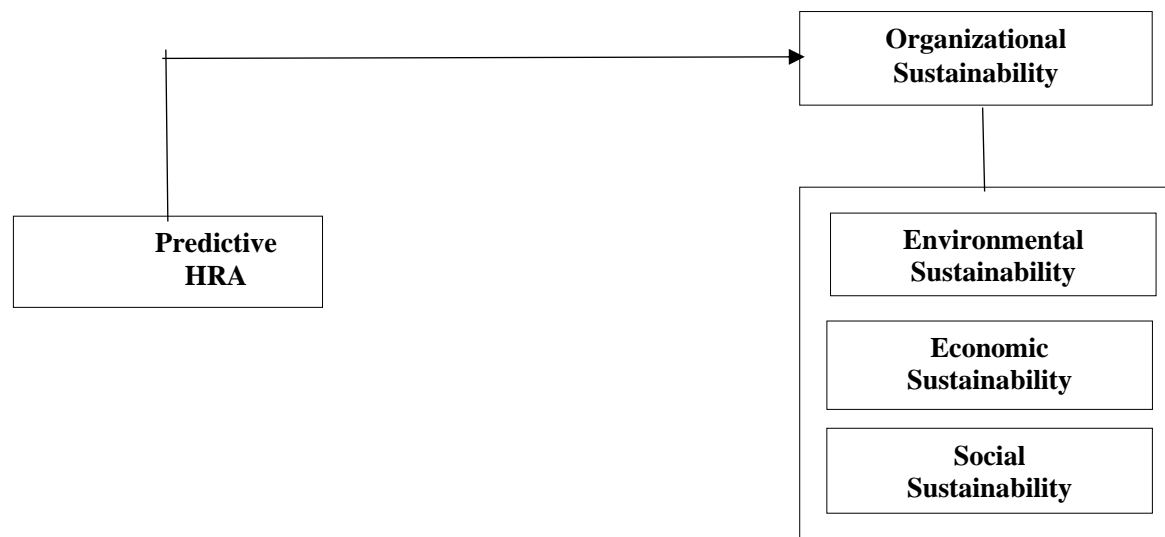
Conceptual Framework

Figure 1: Conceptual framework of predictive HRA and organizational sustainability
Source: Researchers (2021)

Theoretical Foundation
Adaptive Structuration Theory (AST)
Adaptive Structuration Theory (AST) was propounded by Gerardine DeSanctis and Marshall Scott Poole in 1994. It assumes that information systems and organizations are interrelated. Adaptive Structuration Theory (AST) is relevant to today's organizations due to the expanding influence that advancing technologies have had with regard to the human-computer interaction aspect of AST and its implications on socio-biologically inspired structuration in security software

applications. AST provides the model whereby the interaction between advancing information technologies, social structures, and human interaction is described, and which focuses on the social structures, rules, and resources provided by information technologies as the basis for human activity. Adaptive Structuration Theory views organizations as systems of communication. When individuals desire to create a group, they begin by communicating. The individuals express their expectations for the group, and soon a set of rules, or structure, begins to emerge. The individuals establish the group by accepting the rules. As group members continue to communicate in the course of making decisions, weaknesses or limitations in the structure become apparent. Group members then modify the rules to better suit their needs. As members change, draw upon new resources to solve problems or experience shifts in environment, the group attempts to maintain stability by altering its structure.

In this way, AST shows how communication allows groups to evolve while remaining stable. Indeed, without communication, organizations would cease to exist. This theory is formulated as the production and reproduction of the social systems through members' use of rules and resources in interaction. DeSanctis and Poole (1994) adapted Giddens theory to study the interaction of groups and organizations with information technology, and called it Adaptive Structuration Theory. AST criticizes the techno centric view of technology use and emphasizes the social aspects. Groups and organizations using Information Technology for their work dynamically create perceptions about the role and utility of the technology, and how it can be applied to their activities. These perceptions can vary widely across groups. These perceptions influence the way human resource management information system is used and hence mediate its effect on organization performance.

The Concept Predictive HR Analytics (PHRA)
The second level or type of HR Analytics is predictive analysis. At this level of analysis, the meaning is given to the data to make projections into the future. According to Fitz-enz (2009), with practice, there is the likelihood that, future occurrences to some degree can be made through the analysis of historical data. That is, the predictive analysis is more focused on probabilities and potential impact (Fitz-enz & Mattox, 2014) and answers the question, "Why did it happen?" According to Watson (2014), predictive analysis can be used to identify attributes that are required to increase job performance and is able to screen suitable applicants for the job. Simulation models can be used to evaluate job demand and supply using for example, "Java Developers" and as work conditions change, the models are rerun to update both hiring and retention plans (Narula, 2015). Some forms of predictive analysis are genetic algorithms, neural networks, decision trees (Watson, 2014; Narula, 2015). According to Bersin (2013) as cited in Narula 2015), only 4% of companies have been able to reach the level of performing predictive analytics on their workforce. According to Mishra, Lama, and Pal (2016), predictive analytics has been able to provide organisations with insights into data to enhance future predictions. This level of analysis goes beyond mere data presentations on reports, tables or metrics but rather a proactive strategy to improve people-related decisions (Mishra, Lama & Pal, 2016). Techniques such as data mining have become popular in this area as it seeks patterns from large organisational data set. It is able to answer the questions of "where will it happen again and in what magnitude".

The Concept of Organizational Sustainability
The concept of organizational sustainability have gained and attracted lots of attention in recent time, as companies or organisation with its stakeholders are turning their attention towards this critical issues of sustainability, that encompasses the economic, environmental and social dimension of sustainability. This concept according to Bhatia and Tuli (2016) is based on the Brundtland Report Published in 1987. Thus, it emphasized the need or importance of making progress towards economic development that could be sustained without diminishing natural resources or damaging and destroying the environment (Gallo & Christensen, 2014). Lopatta, Buchholz and Kaspereit (2017) and Zahid and Ghazali (2015) assert that sustainable development is a concept of organizational sustainability practices that assures and ensure long-term survival and financial success of a firm or corporation. Thus as the balanced utilization of resources for ensuring better living and working at present by incorporating existing economic, social and environmental necessities without compromising with the needs of future generations (Ongisoh, The & Ng, 2016). Wilson (2003) posit that a review of literature suggests that organizational sustainability concept borrowed elements from four more established concepts, namely sustainable development, corporate social responsibility, stakeholders theory and corporate accountability theory.

Environmental Sustainability: This deals with topics such as preservation of biodiversity; resource regeneration capacity, re-usage and recycling; constraining non-renewable resources and waste generation. Companies aligned with environmental sustainability (Dyllick & Hockerts, 2002) only consume natural resources at

a rate below its natural regeneration capacity, or below the production rate of substitutable resources. These companies also do not cause emissions that accumulate in the environment at rates above the systems natural capacity to absorb and assimilate these emissions. The greatest challenge pointed out by most studies is that for the many services provided by the environment, there is either no known substitute or it is available at prohibitive prices (Azapagic, 2003; Dyllick & Hockerts, 2002). Environmental sustainability encompasses the prevention of the impacts created by the organization on the natural system, composed of living and non-living beings. It goes beyond certifying the conformity to governmental regulations and initiatives, like recycling or efficient energy usage, since it does not exempt a comprehensive approach over the organizational operations, which are ruled by the evaluation of the impacts generated by the company's products, processes and daily services, by the elimination of unnecessary costs and of high emissions, besides minimizing practices that may affect the access of future generations to critical natural resources (Dyllick & Hockerts, 2002).

Economic Sustainability: Economic sustainability is at the core of this sustainability (Azapagic, 2003), since it generates profit and jobs e so contributes to the general social welfare. Even in an ambient of sustainability development, there is the need to recognize the traditional accounting vision (Dyllick & Hockerts, 2002), because without the economic capital the company ceases to exist. Therefore, the authors suggest that the economic sustainability must guarantee sufficient liquidity cash flow by producing above average return for its stockholders (Dyllick &Hockerts, 2002; Dias, 2013; Munck, Munck & Souza, 2011). It also includes topics such as competivity, job offer, insertion into new markets and long-term profit. In short, to achieve economic sustainability means that the organization conducts its activities in a responsible and recognized manner, with social and economic return for those involved (Munck *et al.*, 2011). Economic sustainability is the business's ability to make profit in order to survive and benefit the economic systems at the local and national level' (Roberts and Tribe, 2008). Sustainable businesses consider their economic impact on the community, such as job creation, local wages, and their contribution to local economic growth. Also, suppliers and an engagement across the supply chain to ensure similar values and practices are issues of economic sustainability. At the same time businesses need to maintain corporate profitability and internal financial stability (Landrum & Edwards, 2009). Economic sustainability concerns the relationship between modern organizations or corporations both social and environmental matters (Gray, 2010). Thus, that capitalism and its destructive tendencies manifest through its greatest creation the corporation. Bork, AiideSonza, Olivera Gomes, Canhete, De Barba (2016) argued that the terrestrial glob, is undergoing changes that show environmental imbalance, resulting from human activities in terms of consumption and production, such as deforestation, endangered plant and animal species', air, water pollution, greenhouse effect among others.

Social Sustainability: This encompasses the management of the impact that the organizations cause on the social systems by its operational activities. The expectations of the different social groups relate to the organization are genuinely considered. In summary, it incorporates questions related to human development (education, training, occupational health, workplace safety and competence development), to equality (fair salaries and benefits, equal opportunities and absence of workplace discrimination) and to ethical considerations (human rights, cultural values, intergeneration and intra-generation justice). The social sustainability covers the following characteristics (Azapagic, 2003): fair pay, equal opportunities, good health and safety conditions, gratification system, securing ideas for the improvement of the Triple Bottom Line, competence development and training, career plans and ethical organizational behaviour.

Negative socio-cultural impacts are mainly concerned with banking services in developing countries where overcrowding, 'demonstration' effect, 'etc. are phenomena possibly leading to a certain irritation of the host community and socio-cultural problems (Mason, 2003). Nevertheless, also in developed countries the banking industry might have impacts on the socio-cultural conduct and behaviour of people. The question of authenticity in banking experiences arises when cultural traditions get modified and altered based on the changes and development originating from these financial institutions. Commoditization can lead to pseudo-events that are planned to be convenient for clients which might lead to a falsification of the traditional meaning of service (Mason, 2003). Consequently, cultural promotion through banking support and initiatives to promote and enhance appreciation for cultural and historic heritage are indicators and actions outlined by Roberts and Tribe (2008).

Predictive HR Analytics and Organizational Sustainability of Deposit Money Banks in South-South, Nigeria
Ejo-Orusa and Okwakpam (2018) carried out a study on predictive HR analytics and human resource management amongst human resource management practitioners in Port Harcourt, Nigeria. A cross sectional study with the use of questionnaire survey was adopted, and the questionnaires were distributed through

self-administered procedure. Data was generated from 159 respondents comprising of all levels of HR practitioners in Port Harcourt. The generated data was analysed with a version 20, SPSS statistical tool. Mean scores and standard deviation were calculated from these data to assess the performances of PHRA, recruitment & selection, performance management and succession planning processes amongst the studied HR practitioners. A correlation analysis was done to determine the nature of relationship that existed between PHRA and the HRM practice. Also to predict the significance of the relationship between PHRA and the outcomes HRM practices (recruitment & selection, performance management and succession planning). The outcome from the correlation analyses showed that there is a significant positive relationship between PHRA and the HRM practices used for the study. Based on the findings, it can be concluded that PHRA is an important factor in enhancing the HRM practice outcomes.

Ruohonen (2015) examined the need to leverage predictive analytics in the human resource management domain. Using a qualitative approach to data collection where semi-structured interviews backed up by a questionnaire and multiple case studies were utilised, interesting findings were observed. Although the findings were company specific, general implications for businesses can be deduced. The benefits were enhanced individual and organisational performance, increased employee engagement and satisfaction, customer satisfaction, increased profitability and sales, and cost reductions. These benefits were identified in areas valuable to these organisations within the Human Resource domain. The findings of the study reveal the need to leverage predictive analytics if the organisation wants to be strategic partners in the business. Although the findings are relevant, using firms that are matured in the use of predictive analytics could have elicited quite different evaluations other than young ones as was the case in this study. A bigger sample could have also increased the definitive trends as well as credibility to some of the questions posed compared to the smaller sample of five.

Based on the foregoing, the study thus hypothesized that:

Ho₄: There is no significant relationship between predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria.

Ho₅: There is no significant relationship between predictive HR analytics and economic sustainability of deposit money banks in South-South, Nigeria.

Ho₆: There is no significant relationship between predictive HR analytics and social sustainability of deposit money banks in South-South, Nigeria.

Methodology

The study adopted the cross-sectional survey in its investigation of the variables. Primary source of data was generated through structured questionnaire. The population of this study was the 22 Deposit Money Banks in Nigeria since the entire population of 22 deposit money banks was adopted as a census. However, the respondents/ participants in the study were sixty six (66) Regional Managers of the 22 deposit money banks. The reliability of the instrument was achieved by the use of the Cronbach Alpha coefficient with all the items scoring above 0.70 from a pilot survey of twelve (12) respondents. The hypotheses were tested using the Spearman's Rank Order Correlation Coefficient. The tests were carried out at a 0.05 significance level.

Data Analysis and Results

The 0.05 level of significance was adopted as a criterion for the probability of accepting the null hypothesis in (p> 0.05) or rejecting the null hypothesis in (p <0.05).

Table 1: Correlations for Predictive HR Analytics and Organizational Sustainability Measures

			Predictive HR Analytics	Environmental Sustainability	Economic Sustainability	Social Sustainability
Spearman 's rho	Predictive HR Analytics	Correlation Coefficient	1.000	.764**	.590**	.876**
		Sig. (2-tailed)	.	.000	.000	.000
		N	54	54	54	54
	Environment al Sustainability	Correlation Coefficient	.764**	1.000	.822**	.896**
		Sig. (2-tailed)	.000	.	.000	.000
		N	54	54	54	54
	Economic Sustainability	Correlation Coefficient	.590**	.822**	1.000	.769**
		Sig. (2-tailed)	.000	.000	.	.000
		N	54	54	54	54
	Social Sustainability	Correlation Coefficient	.876**	.896**	.769**	1.000
		Sig. (2-tailed)	.000	.000	.000	.
		N	54	54	54	54

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

Source: SPSS Output version 23.0

RQ1: What is the relationship between predictive HR analytics and organizational sustainability of deposit money banks in South-South, Nigeria?

The correlation coefficient (rho) result in table 1 was used to answer research question 1. Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.764 on the relationship between predictive HR analytics and environmental sustainability. 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 environmental sustainability was as a result of the adoption of predictive HR analytics. Therefore, in answer to research question 1, the relationship indicates that there is a strong positive correlation between predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria. Similarly, with regards to research question 2, Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.590 on the relationship between predictive HR analytics and economic sustainability. 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 economic sustainability was as a result of the adoption of predictive HR analytics. Therefore, also in answer to research question 2, the relationship indicates that there is a moderate positive correlation between predictive HR analytics and economic sustainability of deposit money banks in South-South, Nigeria.

Furthermore, with regards to research question 3, Table 1 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.876 on the relationship between predictive HR analytics and social sustainability. This value implies that a moderate relationship exists between the variables. The direction of the relationship

indicates that the correlation is positive; implying that an increase in social sustainability was as a result of the adoption of predictive HR analytics. Therefore, also in answer to research question 3, the relationship indicates that there is a moderate positive correlation between predictive HR analytics and social sustainability of deposit money banks in South-South, Nigeria.

Therefore, to enable us accept or reject hypotheses 1, 2, and 3 as well as generalize our findings to the study population the p- value was used as shown below:
H_{o1}:There is no significant relationship between predictive HR analytics and environmental sustainability of deposit money banks 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 predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria.

H_{o2}:There is no significant relationship between predictive HR analytics and economic sustainability of deposit money banks 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 predictive HR analytics and economic sustainability of deposit money banks in South-South, Nigeria.

H_{o3}:There is no significant relationship between predictive HR analytics and social sustainability of deposit money banks 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 predictive HR analytics and social sustainability of deposit money banks in South-South, Nigeria. Therefore, the results for the first set of hypotheses with regards to the relationship predictive HR analytics and organizational sustainability measures are stated as follows:
   i.   There is a strong positive significant relationship between predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria.
   ii. There is a moderate positive significant relationship between predictive HR analytics and economic sustainability of deposit money banks in South-South, Nigeria.
   iii. There is a very strong positive significant relationship between predictive HR analytics and social sustainability of deposit money banks in South-South, Nigeria.

Discussion of Findings
The findings as presented in table 1 revealed the test of second set hypotheses 1-3 which indicated for hypothesis four that there is a strong positive significant relationship between predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria. Hypothesis five revealed that there is a moderate positive significant relationship between predictive HR analytics and economic sustainability of deposit money banks in South-South, Nigeria. The test for the sixth hypothesis revealed that there is a very strong positive significant relationship between predictive HR analytics and environmental sustainability of deposit money banks in South-South, Nigeria. These findings corroborate with Ejo-Orusa and Okwakpam (2018) who carried out a study on predictive HR analytics and human resource management amongst human resource management practitioners in Port Harcourt, Nigeria and their finding revealed that there is a significant

positive relationship between PHRA and the HRM practices used for the study. Based on the findings, it can be concluded that PHRA is an important factor in enhancing the HRM practice outcomes.

Similarly, the finding also concurs with Ruohonen (2015) who that, there is a need to leverage predictive analytics in the human resource management domain to identify the possible benefits. Using a qualitative approach to data collection where semi-structured interviews backed up by a questionnaire and multiple case studies were utilised, interesting findings were observed. Although the findings were company specific, general implications for businesses can be deduced. The benefits were enhanced individual and organisational performance, increased employee engagement and satisfaction, customer satisfaction, increased profitability and sales, and cost reductions. These benefits were identified in areas valuable to these organisations within the Human Resource domain. The findings of the study reveal the need to leverage predictive analytics if the organisation wants to be strategic partners in the business. Although the findings are relevant, using firms that are matured in the use of predictive analytics could have elicited quite different evaluations other than young ones as was the case in this study. A bigger sample could have also increased the definitive trends as well as credibility to some of the questions posed compared to the smaller sample of five. In the same vein the study finding empirically support the conceptual arguments of Frioux (2016) who stated that with a few basic changes spurred by data analytics, bench depth analysis can help managers discern precisely the area that may experience the most significant staffing threat and risk. In continuation, he said that data analytics practice can look at all the possible combinations of job role, skill, position, geographical location and point out portions of the organization with the highest employee tenure, and help figure out where to focus training and recruiting expense (Frioux, 2013). Similarly, PHRA is more concerned with why people leave than who is leaving, considering key indicators that show the employee attributes such as those related to resignations (on one hand) and those related to retention (on the other hand). It has been proven in many ways that this sort of prediction is more important than naming individuals because it offers the practitioners the opportunity to develop thoughtful, refined, long-term programs that will help to reduce attrition rates by targeting root causes (Weisbeck, 2015). PHRA can equally be used to understand how talent move in and out of the organization, the explicit alterations in management practices and market conditions that affect these movements and the steps required to address workforce planning gaps (Grillo & Hackett, 2015). Organizations have generated statistical models to predict turnover, helping managers to quickly alter work conditions to prevent top performers' from leaving (Grillo & Hackett, 2015).

Furthermore, this study's finding resonates with the collaborative study carried out on Black Hills Corporation by Collins (2013) who established that to prevent a massive turnover disaster, the company used PHRA to work out how many employees would retire each year, the types of workers needed for their replacement, and the sources the new hires would be pulled from. This resulted to having a workforce planning summit that categorized and prioritized 89 action plans designed to address the potential talent dearth. Again, the study finding agreed with Nair (2014) who affirmed that some forward-looking firms have developed analytic initiatives that use data to assess employee productivity and improve employee hiring and retention. In India, over 55 per cent of organizations feel that PHRA predictions help to secure quality hires (Press Trust of India, 2015). Similarly, Biogen (an American global biotechnology company based in Cambridge) has an established employee strategy and analytics team that makes use of predictive methodology to understand the patterns of attrition and recruitment of its employees. Stone (2002) points out that as changes take place, errors can be made by decision makers in selecting the right people for the right jobs. These errors as pointed out by Stone (2002) can only be minimized or eliminated when appropriate analytics is adopted in the recruitment process.

Conclusion and Recommendations

This study concludes that predictive HRA significantly and positively predict organizational sustainability of deposit money banks in South-South, Nigeria. Implying that predictive HRA provides data for prediction that is more important than naming individuals because it offers the practitioners the opportunity to develop thoughtful, refined, long-term programs that will help to reduce attrition rates by targeting root causes and enhancing environmental, economic and social sustainability. The study recommends that management of deposit money banks and HR practitioners need to incorporate the use of Predictive HRA in their HRM practice functions to get better results. Enhanced and effective HRM practice outcomes can be accomplished with the increased use of PHRA by practitioners.

REFERENCES

Azapagic, A. (2003). Systems approach to corporate sustainability: A general management framework. Trans IChemE, 81.

Bersin, J. (2013). Big data in analytics: the world of haves and haves nots. Retrieved from https://www.humanresourcesblog.in.

Callon, M. (1986). The sociology of an actor-network: The case of the electric vehicle'. Mapping the dynamics of science and technology. Callon, M., Law, J. and Rip, A. (Eds).Macmillan Press, London: 19-34

Cameron, K. S. & Quinn, R. E. (1999). *Diagnosing and changing organizational culture: based on competing values framework.* Reading, MA, Addison-Wesley.

Colantonio, A. (2009). Social Sustainability: A Review and Critique of Traditional versus Emerging Themes and Assessment Methods. In: H. Malcolm, et al., eds. *Second International Conference on Whole Life Urban Sustainability and Its Assessment*, Loubhborough: Loubhborough Univesity, 865–885.

Colantonio, A., & Dixon, T. (2011). *Urban regeneration and social sustainability: best practice from European cities*. Chichester: Wiley-Blackwell. Datta, P. (2011). A preliminary study of ecommerce adoption in developing countries. *Information Systems Journal,* 21 (1), 3-32

Cuthill, M. (2009). Strengthening the 'social' in sustainable development: Developing a conceptual framework for social sustainability in a Rapid Urban Growth Region in Australia. *Sustainable Development*, 18 (6), 362–373.Dempsey, N., Bramley, G., Power, S., & Brown, C. (2011). The social dimension of sustainable development: Defining urban social sustainability. *Sustainable Development, 19*(5), 289-300.

DeSanctis, G., & Poole, M. S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organisation Science*, *5*(2), 121-147.

Dias, B. G. (2013). A análise da validade da sustentabilidade ambiental enquanto uma competência organizacional. Master's degree dissertation, Post Graduate Program in Business Administration, State University of Londrina, Londrina, Brasil.Dolwick, J. S. (2009). The social and beyond: Introducing actor-network theory, *Journal of Maritime Archaeology* 4(1), 21-49.

Dillard, J., Dujon, V., & King, M. C. (2009). *Understanding the social dimension of sustainability.* New York: Routledge.

Dyllick, T. & Hockerts, K. (2002). Beyond the business case for corporate sustainability, *Business strategy and the environment,* 11(2), 130-141.

Ejo-Orusa, H., & Okwakpam, J. A. (2018). Predictive HR Analytics and Human Resource Management amongst Human Resource Practitioners in Port Harcourt, Nigeria. *Global Scientific Journal*, 6(7), 254 – 275

Etukudo, R. U. (2019). Strategies for using analytics to improve human resource management. Walden Dissertations and Doctoral Studies Retrieved from: https://scholarworks.waldenu.edu/dissertations/6557. Accessed: 15th, June, 2021

Fitz-Enz, J., & Mattox, J. (2014). Predictive analytics for human resources. Hoboken, NJ: John Wiley.

Fitz-enz, J. (2009). *The ROI of human capital: Measuring the economic value of employee performance.* New York, NY: AMACOM-–Division of American Management Association

Fitz-enz, J. (2010). *The new HR Analytics: Predicting the economic value of your company's human capital investments*, New York: AMACOM.

Frioux, R. (2013). How data analytics can support succession planning. Dataclear Publication

Gray, R. (2010). Is accounting for sustainability actually accounting for sustainability and how would we know? An exploration of narratives of organisations and the planet. *Accounting, Organizations and Society*, 35(1), 47-62.

Grillo, M., & Hackett, A. (2015). What types of predictive analytics are being used in talent management organizations? Retrieved May 15th, 2018 from Cornell University, ILR School site: http://digitalcommons.ilr.cornell.edu/student/74. Accessed: 25th, June, 2021

Hallstedt, S., Ny, H., Robert, K. H., & Broman, G. (2010). An approach to assessing sustainability integration in strategic decision systems for product development. *J. Clean. Prod.* 18, 703e712

Hobson, K. & Essex, S. (2001). Sustainable tourism: A view from accommodation businesses. *The Service Industries Journal*, 21(4), 133-146.

Huselid, M. A. (1995). The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38, 635-672.

Knowles, T., Macmillan, S., Palmer, J., Grabowski, P., & Hashimoto, A. (1999). The development of environmental initiatives in Tourism: Responses from the London Hotel Sector, *International Journal of Tourism Research*, 1(11), 255-265.

Landrum, N. E., & Edwards, S. (2009). *Sustainable business: An executive's primer*. New York: Business Expert Press.

Lawler, E. E., Levenson, A., & Boudreau, J. (2004). HR Metrics and Analytics Uses and Impacts. CEO Publication - Working Paper. Retrieved February 23, 2012 from http://classic.marshall.usc.edu/ assets/048/9984.pdf

Littig, B., & Griessler, E. (2005). Social Sustainability: A Catchword between Political Pragmatism and Social Theory. *International Journal of Sustainable Development*, 8 (1/2), 65–79

Mason, P. (2003). *Tourism impacts, planning and management.* Oxford: Butterworth-Heinemann

McNamara, C. (2015). Basic definition of organization, available at: https://managementhelp.org/ organizations/definition.htm (accessed June 24, 2021).

Mishra, S. N., Lama, D. R., & Pal, Y. (2016). Human resource predictive analytics (HRPA) for HR management in organizations. *International Journal of Scientific and Technology Research*, 5(5), 33-35.

Mohrman, S. A., & Worley, C. G. (2010). The organizational sustainability journey: Introduction to the special issue. *Organizational Dynamics*, *39*(4), 289-294.

Momin, W. Y. M. (2015). HR analytics transforming human resource management. *International Journal of Applied Research*, *1,* 688-692.

Munck, L., Munck, M. M. G., & Souza, R. B. (2011). Sustentabilidade Organizacional: A Proposição de uma Framework Representativa do Agir Competente para seu Acontecimento. *Gerais - Revista Interinstitucional de Psicologia*, 4(2), 147-158.

Narula, S. (2015). HR analytics: Its use, techniques and impact. *International Journal of Research in Commerce & Management*, 6(8), 47-52.

Pape, T. (2016). Prioritising data items for business analytics: Framework and application to human resources. *European Journal of Operational Research*, 252, 687-698.

Reddy, P. R., & Lakshmikeerthi, P. (2017). HR analytics-An effective evidence based HRM tool. *International Journal of Business and Management Invention*, 6(7), 23-34

Roberts, S. & Tribe, J. (2008). Sustainability Indicators for Small Tourism Enterprises – An Exploratory Perspective. *Journal of Sustainable Tourism*, 16(5), 575-594.

Ruohonen, S. (2015). *Business Benefits of leveraging predictive analytics in HR*. Thesis: Aalto University School of Business.

Sant, S. S. (2016). A study on the HR analytics competitive advantage for organization as a HR strategy. *Journal of Advances in Business Management*, *2,* 9-11.

Saya, S., Pee, L. G., & Kankanhalli, A. (2010). The impact of institutional influences on perceived technological characteristics and real options in cloud computing adoption. Paper presented at the ICIS 2010 Proceedings, St. Louis

Stone, R. J. (2002). *Human resource management. (4th ed).* Milton QLD: John Wiley and Sons.

Swarbrooke, J. (1999). Sustainable tourism management, Wallingford: CABI

Talukdar, G. (2016). Human resources analytics: An approach towards business intelligence. *International Journal of Computer Sciences and Engineering*, 4(7), 125-129.

Vallance, S., Perkins, H. C., & Dixon, J. E. (2011). What is social sustainability? A clarification of concepts. *Geoforum, 42*(3), 342-348.

Veleva, V., & Ellenbecker, M. A. (2001). Proposal for measuring business sustainability: Addressing shortcomings in existing frameworks (forthcoming).

Watson, H. J. (2014). Tutorial: Big data analytics: Concepts, technologies, and applications. *Communications of the Association for Information Systems*, 34.

Weingaertner, C., & Moberg, Å. (2014). Exploring Social Sustainability: Learning from Perspectives on Urban Development and Companies and Products. *Sustainable Development*, 22(2), 122–133.

Weisbeck, D. (2015). Fact or hype: Do predictive workforce analytics actually work? Visier Publication, September Edition.