Prescriptive Human Resource Analytics and Employee Efficiency of Multinational Oil and Gas Companies in Nigeria

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Abstract: This study examined the relationship between prescriptive human resource analytics and employee efficiency in multinational oil and gas companies in Nigeria. The study adopted the cross-sectional research survey design. Primary data was generated through structured questionnaire. The population for this study was 10,238 employees of five multinational oil and gas companies in Nigeria. The sample of 385 was determined using the Taro Yamen's 1970 formula. 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. Findings revealed that there is a significant relationship between prescriptive human resource analytics and employee efficiency in multinational oil and gas companies in Nigeria. Therefore, the study concludes that prescriptive human resource analytics (HRA) positively enhance employee efficiency in multinational oil and gas companies in Nigeria. Thus, the study recommends that Management of multinational companies should ensure that the organization has robust systems in place to collect, store, and analyse HR-related data effectively. This may involve investing in modern HRIS (Human Resource Information System) platforms capable of integrating data from various sources such as performance reviews, training records, and employee surveys.

Keywords: Prescriptive Human Resource Analytics, Employee Efficiency, Timeliness of Work, Target Achievement, Employee Innovativeness

INTRODUCTION

Employee efficiency is an employee characteristic, which relates to the speed and accuracy of an employee at the job task. The concept relates to employee productivity, which provides that the more efficient an employee is, the more productive they will be if well-managed (Fandom, 2017). Invariably, employee efficiency is a complex measurable parameter which characterizes an output produced by efforts and by achievements of an employee (Task Management Guide, 2018). Akerele (1991) has blamed the productivity of Nigerian workers on a number of factors among which are the failure of employers to provide adequate compensation for employees based on their diligence, and the indiscipline of the

privileged class that arrogantly displays their wealth, which is very demoralizing to the working class to such an extent that it reduces their productivity. Through the analysis of key performance metrics and workforce trends, HR professionals can identify opportunities to enhance employee efficiency, optimize resource allocation, and address potential challenges proactively.

Human resource analytics and employee efficiency are intricately linked facets of modern workforce management. Human resource analytics involves the systematic gathering and analysis of HR data to derive actionable insights for strategic decision-making. By employing analytics techniques, organizations can identify patterns, trends, and correlations

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within their workforce data, enabling them to make informed decisions regarding recruitment, retention, training, and performance management. Employee efficiency, on the other hand, focuses on the productivity and effectiveness of individual employees in completing tasks and achieving goals. By leveraging human resource analytics, organizations can identify factors influencing employee efficiency, such as skills gaps, workload distribution, and workplace environment, allowing them to implement targeted interventions to improve overall workforce performance. Thus, by integrating human resource analytics with a focus on employee efficiency, organizations can optimize their HR strategies, enhance productivity, and drive organizational success.

The purpose of the study therefore was to examine the relationship between prescriptive human resource analytics and timeliness of work in Multinational Oil and Gas Companies in Nigeria.

This study was guided by the following research question:

i. What is the relationship between prescriptive human resource analytics and timeliness of work in Multinational Oil and Gas Companies in Nigeria?
ii. What is the relationship between prescriptive human resource analytics and target achievement in Multinational Oil and Gas Companies in Nigeria?
iii. What is the relationship between prescriptive human resource analytics and employee innovativeness in Multinational Oil and Gas Companies in Nigeria?
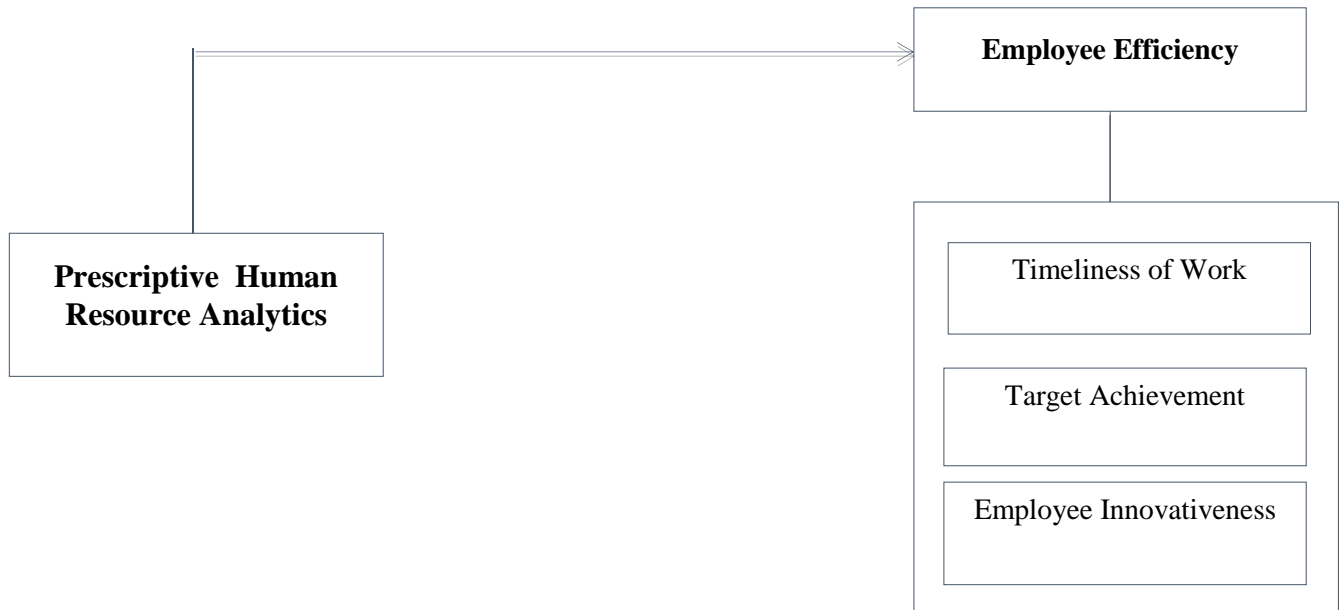

Fig.1 *Conceptual framework for the relationship between prescriptive human resource analytics and employee efficiency*
Source: *Author's Desk Research, 2024*

LITERATURE REVIEW

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 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.

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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 justification for using the Adaptive Structuration Theory (AST) is because it is a highly relevant theoretical framework for studying human resource analytics (HRA) and employee efficiency (EE) due to its emphasis on the mutual influence of structure and human agency in shaping organizational practices. In human resource analytics, Adaptive Structuration Theory offers insight into how organizational structures (such as HR policies and practices) shape the implementation and use of analytics tools, while also considering how these tools, in turn, influence organizational structures through feedback loops. For employee efficiency Adaptive Structuration Theory provides a lens through which to examine how management practices and technologies (e.g., performance monitoring systems) are embedded within organizational structures and how employees, in turn, adapt these structures to fit their needs and preferences, influencing efficiency.

Prescriptive Analytics

The third and highest level of HR Analytics is prescriptive analysis. It focuses more on complex data that is used to make improved decisions. This form of analysis examines data and is able to answer the question "what should be done?" or "how can we make it happen?" The prescriptive analysis enables organisations to make accurate predictions about their workforce such as a possible employee resignation (Jensen-Eriksen, 2016). Mathematical programming and simulation are some examples of prescriptive analysis. It is worth emphasizing that, prescriptive analytics go beyond predictions as it uses high-quality statistics to make an influence on businesses.

A more advanced form of predictive analytics that combines optimization techniques with statistical analysis to provide for uncertainty in the data (Kapoor & Kabra, 2014). Ranjan and

Basak (2013) opines that this type of analytics comes into play when predictive analytics is done. It focuses on the prescription of actions that are needed to be implemented for the predicted future events. "How can we make it happen?" is the question that is being tried to be answered by this type of analytics. This analytic utilises advance technologies and tools which makes it sophisticated to manage and implement.

Concept of Employee Efficiency

Employee efficiency 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 efficiency 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. Employee efficiency 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), employee efficiency 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.

Measures of Employee Efficiency

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 (Adeojo, 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).

Timeliness of work also deals with the promptness with regards to service delivery. Davidow (2003), further highlighted that

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promptness has a significant relationship with customer's satisfaction and service delivery especially in most service oriented, organization. Johnston and Fem (1999) cited in (Ekiz & Arasli, 2007) observed that customers that usually visits organizations to lay complaints most often expects such organizations to consistently resolve their problems instantaneously or swiftly. Scholars has advanced that prompt reaction to customers' needs have a positive influence on customers satisfaction (Congniz *et al*, 2007) cited in (Ekiz & Arasli, 2007).

Targets Achievement

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.

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). 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, Slattery & Sardessai 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).

Prescriptive HR Analytics and Employee Efficiency

Samtani (2022) examined the advantages of using prescriptive analytics in recruitment and performance management processes by HR professionals based in Ireland. This research has utilised an application of qualitative semi-structured interviews that is valid in the current research as it is based on analysing the effectiveness of prescriptive analytics in HR. In-depth semi-structured interviews based on personal experiences can be used to examine the efficacy of prescriptive analytics. Since the current study is exploratory in character, semi-structured interviews with ten HR experts are employed. In this research, thematic analysis was used. The results of the interviews revealed that most of the interview participants showed a great interest in HR Analytics. This is due to the great significance of HR Analytics in human resource management activities. Most of the HR-based participants in the project revealed that the use of prescriptive analytics is not itself challenging as it includes the past records of the employees and their performance, the criticality lies with the presence of sorted and defined data. The study's findings suggest that businesses should use the organisational data produced by HR analytics and factor it into their decision-making.

Boudreau and Lawler III (2009) averred the advent of analytics has increased the scope of making the HR function as a strategic partner This is as a result of the HR departments using prescriptive analytics being able to combine the humungous data on employees extracted to improve on the bottom line (Soumyasanto, 2016) and to achieve competitive advantage (Davenport, *et al.,* 2010) and enabled the HR function to add value to businesses (Boudreau, Lawler III & Levenson, 2004). The resultant effect has been increased organisational outcomes measured as customer, financial, learning and growth, and internal operations as established against short-term and long-term goals (Kaplan & Norton, 2007). HR professionals and managers are now better able to provide HR solutions and services to employees that are in line with the organisation's set goals and objectives using prescriptive analytics. Also, Naasz and Nadel (2015) in their study argued that HR analytics has improved hiring decisions in terms of speed and quality of hire. This has become expedient because if the subjective estimates or judgments HR experts make in determining how a candidate skills and competencies influence employee performance (Naasz & Nadel, 2015). Some initial codes that emanated from the field data to support the positive impact of analytics on employee acquisition are to search for the best talents who will add value to the organisation.

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With the positive impact of analytics in acquiring the right talent to add value and increase competitive advantage among firms, CEOs are pressuring their HR departments according to a report by Deloitte (2016) to adopt the use of analytics. A study by Ejo-Orusa and Okwakpam (2018) has confirmed the positive relationship analytics has on recruitment and selection of employees in some selected banks in Nigeria. From the study, increased productivity, better employee acquisition, increased profit and employee retention has been recorded as the benefits of analytics on employee acquisition. It is important to critically assess and improve on the acquisition or recruitment and selection of employees if an organisation wants value both to the HR function and the firm as a whole. Effective and efficient organisation always outsmart and perform better than ones that are not. In effect, there is increased profitability for the sustenance of the business and increased employee retention.

The positive outcomes of employing analytics in how talents are recruited into an organisation is enormous and so HR professionals and managers need to invest heavily in this area. This will make the HR function more evidence based. Secondly, the value will be added to the business where the employee's outcomes in the form of performance are increased because the right talents will be in the right jobs. These findings echo in the argument raised by Davenport, et al. (2010) that, organisations that are investing in analytics to match the right employee capabilities to the right job is increasing their productivity as well as retaining their top talent.

Waxer (2013) found that prescriptive analytics has enabled HR professionals and managers to contribute to the strategic plans of the business. They have been able to identify the strong leadership qualities of their employees through the analysis of their performance appraisal systems. Management through these analyses has devised strategies to avoid the performance of employees from deteriorating (SHRM, 2018). Further to this is the anticipation of this performance of their employees to increase the firm's revenue and improvements in employee engagement (SHRM, 2018). This assertion is consistent with the findings of Ruohenen (2015) who observed that, HR analytics enhance organisational performance and reduces costs, and these are areas valuable to organisations.

Sharma and Sharma (2017) drew a causal link between HR analytics and performance using appraisal systems. It was purported that, there is increased objectivity and accuracy in the appraisal process. This robust data analysis tools utilised are reducing the subjective bias that comes with traditional performance systems that existed. More objectivity, fairness and not feel they have been treated unfairly because discussions on performance will be based on performance management data. Grillo and Hackett (2015) found out that organisations have improved on how to retain their talents or top performers

because HR practitioners and managers are able to determine the rate and probability of an employee leaving the organisation within a specific period of time. This has become possible through the attrition scores generated from the analytics run within the HR function. Firms have been able to design equitable reward systems after analysing employee's performance ratings with the resultant effect of increased employee retention. Considerable attention has been paid to employee turnover and how to retain key talents because of what the organisation loses in terms of skills and competence shortage within a particular period. Organisation that analyses their attrition data are better able to gather information about why people leave the firm and find ways of dealing with the issues to retain other top performers from turning over.

Malisetty, Archana and Kumari (2017) found that, attrition can be reduced using analytics by analysing an organisation employee data as well as attrition records. It was expounded that, monitoring and controlling attrition is one of the key areas the human resource function can add value. Organisation in curtailing employee attrition are running employee surveys once in a year or twice a year to solicit for employees view on how the firm's culture is impacting their performance. The analysed data has revealed insights on the salary, development opportunities such as learning and growth, and job ethics and values which is used to improve on the job environment and to make the employee more engaged. This indirectly motivates them to stay. As employee retention and engagement has become a topmost priority in organisations today has called for deep analytics in these areas to study employee experience trends for optimization and to continuously retain the best talent (Mukundan, 2017; Ruohenen, 2015). Fitz-enz and Mattox (2014) have also reported similar findings to say that, if attrition is kept at bay or eradicated, firms are sure to save millions of dollars averagely.

HR professionals and managers have the sole responsibility of ensuring that, top talents are not turning over by consistently checking and analysing the attrition data and employee data to gain insights on the rates and who is likely to leave the organisation. As employee's leave their organisation for another, they leave with their skills and knowledge which would have contributed to the firm's productivity (Shaw, 2011). Such insights are then translated into actionable strategies to keep these top talents who contribute immensely towards the organisation's return on investment and overall organisational performance.

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Based on the foregoing, the study thus hypothesized that:

Ho$_1$: There is no significant relationship between prescriptive HR analytics and timeliness of work of Multinational Oil and Gas Companies in Nigeria

Ho$_2$: There is no significant relationship between prescriptive HR analytics and target achievement of Multinational Oil and Gas Companies in Nigeria

Ho$_3$: There is no significant relationship between prescriptive HR analytics and employee innovativeness of Multinational Oil and Gas Companies in Nigeria

METHODOLOGY

The population for this study was 10,238 employees of five multinational oil and gas companies in Nigeria. The sample of 385 was determined using the Taro Yamen's 1970 formula. 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 while the partial correlation was used to test the moderating effect. The tests were carried out at a 0.05 significance level.

UNIVARIATE ANALYSIS

Table 1 : Descriptive Statistics for Prescriptive HRA					
	N	Minimum	Maximum	Mean	Std. Deviation
HR data is analyzed to recommend specific interventions to address workforce challenges and opportunities.	316	4.00	5.00	4.13169	.35417
Prescriptive models are used to optimize employee scheduling and workload distribution.	316	2.00	5.00	4.3095	.81114
The organization leverages prescriptive analytics to tailor training and development programs to individual employee needs.	316	1.00	5.00	3.8095	1.17366
HR data analysis guides decision-making on organizational restructuring and talent reallocation to maximize efficiency and effectiveness.	316	2.00	5.00	3.4762	.89000
Prescriptive analytics support strategic workforce planning by recommending optimal staffing levels and skill sets.	316	3.00	4.00	3.7857	.41530
Valid N (listwise)	316				

Source: SPSS Output

The data Table 1. illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of prescriptive HRA which is a dimension of human resource analytics. The construct examined the context and manifestations of prescriptive HRA within the target organizations with indicators aimed at examining respondents' perception of human resource analytics through its indicators. The results affirm to all five indicators of prescriptive HRA within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents of prescriptive HRA of multinational oil and gas companies in Nigeria, are strongly of the opinion that human resource analytics is an observed

phenomenon in their organizations and hence are largely on the agreement range of the scale

Criterion Variable – Employee Efficiency

In generating the data on the operationalized variables, the study used a 5-point Likert scale instrument. Therefore, in interpreting the mean values, the study is relying on Asawo's (2016) categorization of responses with mean (x) thus: $1 < x \leq 2.5$ = low; $2.5 < x \leq 3.5$ = moderate; $3.5 < x \leq 4.5$ = high and $4.5 \geq x$ = very high. In order to ascertain the responses on employee efficiency, the measures, namely; timeliness, target achievement and employee innovativeness were measured on a set of multi-item instruments, all scaled on a five points Likert scale and are as presented.

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Table 2: Descriptive Statistics for Timeliness of Work					
	N	Minimum	Maximum	Mean	Std. Deviation
I consistently meet deadlines for my assigned tasks.	316	3.00	5.00	4.1667	.72974
I prioritize my work to ensure timely completion.	316	3.00	5.00	4.13169	.60773
I communicate effectively with colleagues to coordinate deadlines and expectations.	316	4.00	5.00	4.3571	.48497
I proactively manage my workload to avoid delays.	316	4.00	4.00	4.0000	.00000
I take initiative to anticipate potential delays and address them proactively.	316	4.00	5.00	4.3571	.48497
Valid N (listwise)	316				

Source: SPSS Output

The data Table 2. illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of timeliness which is a measure of employee efficiency. The construct examined the context and manifestations of timeliness within the target organizations with indicators aimed at examining respondents' perception of timeliness through its indicators. The results affirm to all five indicators of timeliness within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents of oil and gas companies in Nigeria are strongly of the opinion that timeliness is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 3: Descriptive Statistics for Target Achievement					
	N	Minimum	Maximum	Mean	Std. Deviation
I consistently meet or exceed the targets set for my role.	316	1.00	5.00	3.3571	1.07797
I actively work towards achieving my performance goals and objectives.	316	2.00	5.00	3.9524	.49151
I am able to effectively prioritize tasks to ensure target achievement.	316	2.00	5.00	4.0238	.56258
I seek out opportunities to improve my performance and exceed targets.	316	2.00	5.00	4.0238	.78050
I regularly review my progress towards targets and adjust my approach as needed.	316	2.00	5.00	3.9524	.82499
Valid N (listwise)	316				

Source: SPSS Output

The data in Table 3. Illustrates that there is a high level of affirmation (where x > 2.50) regards the indicators of target achievement which is a measure of employee efficiency. The construct examined the context and manifestations of target achievement within the target organizations with indicators aimed at examining respondents' perception of target achievement through its indicators. The results affirm to all five indicators of target achievement within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents of oil and gas companies in Nigeria are strongly of the opinion that target achievement is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Table 4: Descriptive Statistics for Employee Innovativeness					
	N	Minimum	Maximum	Mean	Std. Deviation
I actively seek out new ways to improve processes or procedures in my work.	316	2.00	5.00	4.1190	.50376
I am willing to take risks and try new ideas or approaches in my role.	316	2.00	5.00	4.0238	.41249
I frequently contribute innovative ideas or solutions to problems within my team or organization.	316	2.00	5.00	4.0238	.78050
I am open to feedback and suggestions from others to enhance my innovative contributions.	316	1.00	5.00	4.4762	1.06469
I enjoy exploring new technologies or methods that could benefit my work.	316	1.00	5.00	3.6667	1.07446
Valid N (listwise)	316				

Source: SPSS Output

The data Table 4 illustrates that there is a high level of affirmation (where x > 2.50) as regards the indicators of employee innovativeness which is a measure of employee efficiency. The construct examined the context and manifestations of employee innovativeness within the target organizations with indicators aimed at examining respondents' perception of employee innovativeness through its indicators. The results affirm to all five indicators of employee innovativeness within the target organizations as also supported by the low disparity in response (SD <2.00). The implication of these responses is that the respondents of oil and gas companies in Nigeria are strongly of the opinion that employee innovativeness is an observed phenomenon in their organizations and hence are largely on the agreement range of the scale.

Bivariate Analysis

The level of significance 0.05 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 5: Correlations for Prescriptive HRA and Employee Efficiency Measures			Prescriptive HRA	Timeliness	Target Achievement	Employee innovativeness
Spearman's rho	Prescriptive HRA	Correlation Coefficient	1.000	.819**	.457**	.516**
		Sig. (2-tailed)	.	.000	.002	.000
		N	316	316	316	316
	Timeliness	Correlation Coefficient	.819**	1.000	.269	.663**
		Sig. (2-tailed)	.000	.	.085	.000
		N	316	316	316	316
	Target Achievement	Correlation Coefficient	.457**	.269	1.000	.069
		Sig. (2-tailed)	.002	.085	.	.664
		N	316	316	316	316
	Employee innovativeness	Correlation Coefficient	.516**	.663**	.069	1.000
		Sig. (2-tailed)	.000	.000	.664	.
		N	316	316	316	316
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: SPSS Output version 23.0

H$_{o1}$: There is no significant relationship between prescriptive human resource analytics and timeliness of work of Multinational Oil and Gas Companies in Nigeria.

Table 5 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.819 on the relationship between prescriptive HRA 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 prescriptive HRA. Therefore, based on this findings there is a strong positive correlation between prescriptive HRA and timeliness of work of Multinational Oil and Gas Companies in Nigeria. Hence, the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between prescriptive human resource analytics and timeliness of Multinational Oil and Gas Companies in Nigeria.

H$_{o2}$: There is no significant relationship between prescriptive human resource analytics and target achievement of Multinational Oil and Gas Companies in Nigeria.

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Table 5 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.457 on the relationship between prescriptive HRA and target achievement. 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 target achievement was as a result of the adoption of prescriptive HRA. Based on this finding, there is a strong positive correlation between prescriptive HRA and target achievement of Multinational Oil and Gas Companies in Nigeria. Hence, the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between prescriptive human resource analytics and target achievement of Multinational Oil and Gas Companies in Nigeria.

H$_{o3}$: There is no significant relationship between prescriptive human resource analytics and employee innovativeness of Multinational Oil and Gas Companies in Nigeria.

Table 5 shows a Spearman Rank Order Correlation Coefficient (rho) of 0.516 on the relationship between prescriptive HRA and employee innovativeness. 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 employee innovativeness was as a result of the adoption of prescriptive HRA. Therefore, there is a strong positive correlation between prescriptive HRA and employee innovativeness of Multinational Oil and Gas Companies in Nigeria. Hence, the null hypothesis earlier stated is hereby rejected and the alternate upheld. Thus, there is a significant relationship between prescriptive human resource analytics and employee innovativeness of Multinational Oil and Gas Companies in Nigeria.

DISCUSSION OF FINDINGS

The findings revealed that there is a strong positive significant relationship between prescriptive HR analytics and employee efficiency in multinational oil and gas companies in Nigeria. These findings corroborate with Boudreau and Lawler III (2009) who averred the advent of analytics has increased the scope of making the HR function as a strategic partner This is as a result of the HR departments using prescriptive analytics being able to combine the humungous data on employees extracted to improve on the bottom line (Soumyasanto, 2016) and to achieve competitive advantage (Davenport, *et al.,* 2010) and enabled the HR function to add value to businesses (Boudreau, Lawler III & Levenson, 2004). The resultant effect has been increased organisational outcomes measured as customer, financial, learning and growth, and internal operations as established against short-term and long-term goals (Kaplan & Norton, 2007). HR professionals and managers are now better able to provide HR solutions and services to employees that are in line with the organisation's set goals and objectives using prescriptive analytics. Similarly, the current finding provides concurrence with Naasz and Nadel (2015) who in their study argued that HR analytics has improved hiring decisions in terms of speed and quality of hire. This has become expedient because if the subjective estimates or judgments HR experts make in determining how a candidate skills and competencies influence employee performance (Naasz & Nadel, 2015). Some initial codes that emanated from the field data to support the positive impact of analytics on employee acquisition are to search for the best talents who will add value to the organisation.

With the positive impact of analytics in acquiring the right talent to add value and increase competitive advantage among firms, CEOs are pressuring their HR departments according to a report by Deloitte (2016) to adopt the use of analytics. A study by Ejo-Orusa and Okwakpam (2018) has confirmed the positive relationship analytics has on recruitment and selection of employees in some selected banks in Nigeria. From the study, increased productivity, better employee acquisition, increased profit and employee retention has been recorded as the benefits of analytics on employee acquisition. It is important to critically assess and improve on the acquisition or recruitment and selection of employees if an organisation wants value both to the HR function and the firm as a whole. Effective and efficient organisation always outsmart and perform better than ones that are not. In effect, there is increased profitability for the

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sustenance of the business and increased employee retention. The positive outcomes of employing analytics in how talents are recruited into an organisation is enormous and so HR professionals and managers need to invest heavily in this area. This will make the HR function more evidence-based. Secondly, the value will be added to the business where the employee's outcomes in the form of performance are increased because the right talents will be in the right jobs. These findings echo in the argument raised by Davenport, et al. (2010) that, organisations that are investing in analytics to match the right employee capabilities to the right job is increasing their productivity as well as retaining their top talent.

The finding corroborates with Waxer (2013) that prescriptive analytics has enabled HR professionals and managers to contribute to the strategic plans of the business. They have been able to identify the strong leadership qualities of their employees through the analysis of their performance appraisal systems. Management through these analyses has devised strategies to avoid the performance of employees from deteriorating (SHRM, 2018). Further to this is the anticipation of this performance of their employees to increase the firm's revenue and improvements in employee engagement (SHRM, 2018). This assertion is consistent with the findings of Ruohenen (2015) who observed that, HR analytics enhance organisational performance and reduces costs, and these are areas valuable to organisations.

This current finding comes to confirm the study by Sharma and Sharma (2017) to draw a causal link between HR analytics and performance using appraisal systems. It was purported that, there is increased objectivity and accuracy in the appraisal process. This robust data analysis tools utilised are reducing the subjective bias that comes with traditional performance systems that existed. More objectivity, fairness and not feel they have been treated unfairly because discussions on performance will be based on performance management data.

Furthermore, the finding also supports the finding of Grillo and Hackett (2015) who found out that organisations have improved on how to retain their talents or top performers because HR practitioners and managers are able to determine the rate and probability of an employee leaving the organisation within a specific period of time. This has become possible through the attrition scores generated from the analytics run within the HR function. Firms have been able to design equitable reward systems after analysing employee's performance ratings with the resultant effect of increased employee retention. Considerable attention has been paid to employee turnover and how to retain key talents because of what the organisation loses in terms of skills and competence shortage within a particular period. Organisation that analyses their attrition data are better

able to gather information about why people leave the firm and find ways of dealing with the issues to retain other top performers from turning over.

The finding is in line with the study conducted by Malisetty, Archana and Kumari (2017) who found that, attrition can be reduced using analytics by analysing an organisation employee data as well as attrition records. It was expounded that, monitoring and controlling attrition is one of the key areas the human resource function can add value. Organisation in curtailing employee attrition are running employee surveys once in a year or twice a year to solicit for employees view on how the firm's culture is impacting their performance. The analysed data has revealed insights on the salary, development opportunities such as learning and growth, and job ethics and values which is used to improve on the job environment and to make the employee more engaged. This indirectly motivates them to stay. As employee retention and engagement has become a topmost priority in organisations today has called for deep analytics in these areas to study employee experience trends for optimization and to continuously retain the best talent (Mukundan, 2017; Waxer, 2013; Ruohenen, 2015). Fitz-enz and Mattox (2014) have also reported similar findings to say that, if attrition is kept at bay or eradicated, firms are sure to save millions of dollars averagely.

HR professionals and managers have the sole responsibility of ensuring that, top talents are not turning over by consistently checking and analysing the attrition data and employee data to gain insights on the rates and who is likely to leave the organisation. As employee's leave their organisation for another, they leave with their skills and knowledge which would have contributed to the firm's productivity (Shaw, 2011). Such insights are then translated into actionable strategies to keep these top talents who contribute immensely towards the organisation's return on investment and overall organisational performance.

The findings of this study aligns with the baseline theory of the Technology Acceptance Model (TAM). TAM emphasizes perceived usefulness as a key determinant of people's intention to adopt technological innovations. According to TAM, the acceptance of an IT system is linked to both perceived usefulness and perceived ease of use, which are critical in predicting and explaining end-user adoption and acceptance of information technology and systems. This theoretical framework is further supported by the Theory of Reasoned Action (TRA) proposed by Fishbein and Ajzen, which also explores various determinants of technology use. The positive relationship found in this study indicates that employees perceive prescriptive HR analytics as useful and easy to use, leading to enhanced efficiency.

CONCLUSION AND RECOMMENDATION

The study concludes that prescriptive human resource analytics positively enhance employee efficiency in multinational oil and gas companies in Nigeria. This implies that by utilizing prescriptive analytics, which not only predicts future outcomes but also suggests actions to achieve desired results, these companies can optimize their human capital management practices. Based on this, it was recommended that management of multinational companies should utilize prescriptive analytics to optimize workforce deployment by matching the right employees with the right roles based on their skills, experience, and preferences. By analysing employee profiles, project requirements, and performance data, HR can identify optimal staffing configurations that maximize productivity and efficiency.

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