Evaluating employee engagement drivers in Nigeria's downstream electricity sub-sector

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ABSTRACT

This paper focuses on employee engagement in a sector that transitioned from a fully government-owned to a privatized entity while retaining the majority of the legacy staff and bringing in new employees. The electricity sector has always piqued the interest of investors due to its strategic importance to the growth and development of other sectors, particularly in developing countries. This paper investigates some of the factors that influence employee engagement in the Nigerian power and electricity subsector. The study includes 824 employees from Nigeria's downstream electricity sector. Descriptive and ordinal regression analyses were used to determine the relationships between the variables. The study reveals that parameters such as office ambiance, clear communication, tool availability, health, and safety have relationships with or impact employee engagement. As a result, organizations' management must pay attention to and improve on them in order to retain their employees and provide their best discretionary effort. This research expands on theories of engagement in the post-privatization era and investigates the influence of key drivers on employee engagement in Nigeria's downstream power sector.

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Introduction

Employee engagement remains a condition in which employees are intellectually and psychologically attached to the development of an organization. It is an inclusive or earned gradual emotional involvement of individuals in their respective works (Nel et al., 2015). The connective cord that makes every employee experience greater enthusiasm when attending to their jobs and performs optimally depends on employee engagement. Considering the level of competition that keeps increasing in every business world, it becomes sacrosanct that organizations deliver on employee engagement to retain loyal and competent employees committed to their jobs (Nwinyokpugi, 2015). Employee engagement strategically promotes employee performance and productivity even in a very challenging environment. Furthermore, viable organizations are well aware that employee engagement can be either harmful or beneficial to their overall results and performances as organizations. Employee engagement results in committed, satisfied, and enthusiastic employees who are productive and always willing to give their all. Poor employee engagement, on the other hand, results in a group of defensive or complaining employees.

Employee engagement provides more advantages to any organization, either on the short-run or on the long-run. Retaining employees save cost as most engaged employees are unwilling to exit in as much as they are satisfied and keep growing professionally. Also, it enhances productivity because the organization's goals are already embedded in their emotions psychologically. For these and other reasons, engaging employees profitably has become a top priority of human resources, affecting every human resource manager and business manager due to its impact on productivity and overall cost reduction (Chandan et al., 2016; Eero, 2020). Enhancing and sustaining employee engagement is on the front burner of management concerns in many organizations (Eero, 2020). It is established that equipping employees with the skills and competencies to deliver top performance is not sufficient, and employees must be
engaged to be motivated to act in a professional and timely way to achieve organizational goals (Olafsen et al., 2020). This is a daunting challenge in a difficult sub-sector like the downstream electricity sector, where factors like brand acceptance and company image are key drivers of employee engagement. An engaged, resourceful, and competent workforce can help businesses transition from any business challenges caused by market conditions or competition to a stable business that can withstand all of these challenges and continue to grow (Parent and Lovelace, 2018).

This study focuses on employee engagement in a sector that transitioned from a fully government-owned entity to a privatized entity while retaining the majority of the legacy staff and hiring new employees. The electricity sector has always piqued the interest of investors due to its strategic importance to the growth and development of other industries, particularly in developing countries. Working in the downstream electricity sub-sector is particularly difficult in most developing countries like Nigeria. This is due to a lack of electricity supply, and consumers and customers alike take their rage out on employees in the electricity sector. Employees in the electricity sector are subject to verbal and sometimes physical abuse, which can have a negative impact on their performance and commitment; this unusual environment places stress on the employees.

Despite extensive research on employee satisfaction and involvement, no research has been conducted on factors that will optimally engage employees in the downstream sector who face verbal abuse on a regular basis, particularly in Nigeria. Furthermore, Nigeria is known as the largest in Africa, with electricity serving as the foundation for all technological development and economic growth in the country. In order to have innovative, flexible, competent, and loyal employees in this sector, it becomes critical to investigate cogent factors that will enhance employee engagement in this type of sector that is so important to technological progress and economic development. As a result, this paper seeks to add to knowledge by investigating a sector that has transitioned from a government-owned to a privately controlled sector, which has received little attention. This is consistent with calls for more research in underserved areas (Bakker and Albrecht, 2018). While some scholars (Barik and Kochar, 2017; Antony, 2018) investigate compensation and benefits (expectancy and equity theory) in the context of social exchange theory in a developing country setting like Nigeria, this study investigates tangible and intangible organizational factors such as work tools, ambience, career path, training, communication, and so on. The rest of this work is as follows: Section two provides an in-depth review of previous work on the subject, i.e. a literature review; Section three provides the method used for the study; Section four provides the study's empirical analysis and results; and Section five provides the study's conclusion and recommendations.

## Literature Review

The social exchange paradigm is widely regarded as a key ideology for explaining how employees behave in organizations (Cropanzano and Mitchell, 2005; Mark, 2015; Shulga, 2017). Employees are more likely to be committed to their work when they are involved in multiple independent activities that are motivated by certain factors (Samarendra and Arunprasad, 2020). Settoon et al. (1996) and Robin (2015) proposed two types of firm exchange that will serve as the foundation for this study: social-economic exchange between employers and employees and economic exchange between employers and employees. According to Robin (2015), these factors are expressed in monetary and non-monetary terms, and include obligations and ancillary exchange. The success of any employee engagement in any organization is largely determined by the level of commitment of the employees involved in relation to organizational goals and performance (Herscovitch and Meyer, 2002; Shulga, 2017; Nicolaides and Duho, 2019; Okechukwu and Nwosa, 2020).

Previous studies attempted to investigate various factors that can lead to employee engagement and likely developed models that will assist practitioners and researchers. Still, there is no universally accepted definition of employee engagement. As a result, Dernovsek (2008), Chandan et al. (2016), and Change et al. (2019) believed that employee engagement could be defined as the way in which a worker feels about their employer and its values. According to the literature, a variety of factors, including emotional and rational ones related to work and the overall work experience, have an impact on employee engagement. A recent study (Samarendra and Arunprasad, 2020) discovered four determinants (supervisor trust, co-worker trust, organizational trust, and organizational culture) of employee engagement that exist in any organization. Similarly, Gallup (2004) identified three types of employees in terms of engagement: those who are not currently engaged, those who are disengaged, and those who are actively engaged. Employees who are engaged consistently strive for excellence within their roles and capabilities, whereas those who are not engaged focus solely on the tasks assigned to them rather than the organization's goals.

Employee engagement is widely regarded as an important factor influencing employee attitude, behavior, and performance in organizational research (Denison et al., 2017; Schneider et al., 2017). The organizational climate, which includes shared perceptions of policies, practices, procedures, and innovative behaviors, can go a long way toward increasing employee engagement. A study was carried out by (Nwinyokpugi, 2015) on employee engagement and harmony at the workplace in the Rivers state workforce. A sample of four hundred employees was selected randomly from the state workforce. The study showed a positive connection between the variables used to determine employee engagement and variables used to denote workplace harmony in the study. In a study on employee engagement and workplace harmony, Nwinyokpugi (2015) and Palaku (2016) discovered that both financial and non-financial factors influence employee engagement. Having considered various factors that some researchers have used to explain or measure employee engagement, this paper seeks to investigate whether factors such as ambience, career understanding, clear communication, regular training, tool availability, and health and safety will affect employee engagement as hypothesized below.
Office Environment and Employee Engagement

The work and office environment is one of the major factors considered in the literature as critical to worker engagement. According to a survey conducted by (Hughes, 2007; Sander et al., 2019), the majority of workers believe that the office environment influences employee attitudes toward work and improves performance, and that the quality of the office environment is a motivator for employees' motivation and productivity. Another study (Ariussanto et al., 2020) confirmed that an unsafe or unhealthy work environment, such as noise, ventilation problems, a lack of or insufficient seats for employees, and so on, not only affects employees' performance but may also be hazardous to their health. Furthermore, (Hameed and Amjad, 2009) conducted a survey involving 31 commercial bank branches and discovered that the comfortability and ergonomic designs provided in offices psychologically motivate employees to be cautious, thereby increasing productivity and engagement. Based on previous research linking the office and work environment to employee engagement, this study proposed:

H1. Office Environment (ambience) does not impact employee engagement.

Career Growth and Employee Engagement

Career growth is known as the opportunity for employees to have more applicable knowledge in a firm, such as undergoing difficult tasks, being involved in more job responsibilities, and doing more. But, this is not robust enough because it does not consider employee's mobility problems, according to (Weng and Hu 2009; Jing and Jingping, 2018), who suggested two forms of career path understanding or growth: intra-organizational growth and inter-organizational growth, where Intra-Organizational Career growth emphasizes the speed of employee career progression within the organization. Inter-organizational career growth emphasizes the growth of experience and ability when individual moves between organizations. Based on previous on the foregoing, this study prosed that:

H2. Career path understanding does not impact employee engagement.

Clear Communication

Clear communications within an organization are those that occur between the leaders of the organization and their subordinates (Dolphin, 2005). It simply refers to employees' ability to comprehend what their superiors are communicating to them for proper implementation. Kalla (2005) and Thornton (2019) worked on improving management's ability to establish and maintain clear communication relationships with internal stakeholders at all levels of an organization. Similarly, Quirke (2008) confirmed that clear communication aids in the illumination of every piece of information and directly provides employees with the information they need to complete their tasks. Based on previous on the foregoing, this study prosed that:

H3. Clear communications do not impact employee engagement.

Environment and Employee Engagement

According to (Gallagher, 2001), a secure environment or occupational health and safety is a process of planning and reviewing the organizational safety and health arrangements that includes a consultation and integrated factors that enhance health and safety performance. As the general health and safety of both employer and employees is a demonstration that management is willing to provide all employees with a healthy and secured environment to discharge their duties without any iota of fear in them (Christian et al., 2009; Kharzi et al., 2020), the use of clear communications and information networks in organizations also helps to reduce the number of accidents. Therefore, a secured Environment (Health and Safety) does not impact employee engagement.

H4. A secured Environment (Health and Safety) does not impact employee engagement.

Training and Employee Engagement

Regular training of employees is known to be one of the most acceptable methods for improving employees' productivity and engagement in an organization. (Khan et al., 2016) concluded that regular training is necessary to measure employee engagement. Their study showed a significant relationship between training and development on job satisfaction and the performance of the employees. They concluded that investment in training and development would improve job satisfaction among the employees, which directly improves employees' engagement and performances (Smita and Aastha, 2017). One of the duties of human resources of organizations is to develop employees' attitudes and capabilities through effective training and development programs, so they are more engaged in their job and organization to significantly impact and achieve organizational goals while growing and developing themselves as well (Lee, et al., 2010). Also, in the context of our study, work tools availability is also a factor that can impact employee engagement. While we note that no literature has captured this parameter, we have included it in the variables we are evaluating.

H5. Regular training does not impact employee engagement.
Methodology

Design and study setting

The downstream sub-sector of the electricity sector was the target population. The sector was completely Government-owned before 2014 (Achimugu 2020). However, due to the privatization of the sector that occurred in 2014, a lot of human resource adjustments were made to transition to the private sector focus. This made some employees redundant and similarly brought lots of fresh hands and experience from other sectors like banking and telecommunications into the sector. (Ogunleye, 2017). For easy accessibility to respondents with viable knowledge on the research at hand, we leveraged the employee database from the labour Union and human resource committee of the distribution companies for the southwest region of the country. A structured questionnaire was used in our quantitative research approach, and it was electronically distributed to each respondent. Respondents had the option to choose from options after the questions were closed. It was divided into two parts: one section covered the sociodemographic traits of the respondents, and the other section focused on the factors that influence employee engagement. Due to its low cost and ability to reach respondents who live in remote areas of the earth’s surface, online data collection was chosen as the method for gathering the information. The entire Union membership database was contacted with the emails. An average of 20 to 30 minutes are needed to complete the survey. Sample selection bias does not exist.

Population and Sample

The population in this study comprises 12000 employees of the electricity distribution sub-sector in the southwest of Nigeria. Due to the nature of the population, a non-probability sampling method was used. Specifically, convenience sampling (Costanza et al, 2015). A non-probability sampling technique does not give all study population members an equal chance of being chosen (Babbie 2010). The use of this sampling technique is justified by the fact that only electricity downstream industry workers with access to email and who are listed on the database within the researchers’ networks were eligible to take part. Convenience sampling was used to select study participants based on availability. Although a population size of 1200 employees were selected to participate in the survey, out of which 824 employees filled the survey. The Yaro Yamane’s formula. Following a thorough explanation of the study’s goals to the Union officials and the committee of human resource professionals, who also strongly encouraged all employees to take the survey via an online link, ethical clearance was properly obtained before and participation was voluntary.

Data analysis and model specification

Based on the theoretical framework of social exchange theory (Cropanzano & Mitchell, 2005), this paper seeks to evaluate the drivers of employee engagement in Nigeria’s power sector. Different scholars have used varying parameters to measure employee engagement (Joshi & Sodhi, 2011; Samarendra & Arunprasad, 2020). Some of the variables include job content, compensation/money benefits, work-life balance, top-management employee relations, the scope for advancement and career growth and team orientation/teamwork (Joshi & Sodhi, 2011), co-worker trust, supervisor trust, organizational trust, and organizational culture (Samarendra & Arunprasad, 2020). In this study, we use the following variables as our independent variables with ordered or ordinal responses: office environment (ambience), work tools availability, career path understanding, regular Training (Khan et al. 2016), clear communications, customer satisfaction, and secured environment (Kalla, 2005; Bhat & Bharel, 2018). Additionally, we use employee engagement as our dependent variable with ordinal responses, which determines our choice of ordinal regulation. Due to the fact that they are ranked and classified (strongly agree, agree, neutral, disagree, and strongly disagree).

In this study, employee engagement was investigated using the following variables: ambiance, career path understanding, communication, environment, training, and tool availability. Because of the scaled nature of the questionnaire, ordinal logistic regression was used. According to Oscar (2008), Ordinal logit can be used when a dependent variable is explained by more than one value in sequential order, with a higher value having more weight. Ordinal regression is one of the predictive members of regression analyses that explains the relationship or connection between a response variable and two or more explanatory variables. It is used to predict variables whose values are scaled. In this regression (ordinal) analysis, the dependent variable is ordered responses, and the independent or explanatory variables can be ordinal, categorical, or continuous responses. The notable binary logistic regression is always used to determine the odds of success for a dichotomous response variable. It can be stated as:

\[ \ln(Y) = \logit[\propto(x)] = \ln \left( \frac{\propto(x)}{1-\propto(x)} \right) = \varphi + \rho_1 X_1 + \rho_2 X_2 + \cdots + \rho_k X_k \]  

But when it comes to an ordinal logistic regression, the outcome variable is said to possess more than two levels. It is usually expressed in the logit form as seen below:

\[ \ln Y_k = \logit[\propto(x)] = \ln \left( \frac{\propto(x)}{1-\propto(x)} \right) = \varphi_k + (-\rho_1 X_1 - \rho_2 X_2 - \cdots - \rho_k X_k) \]  

Where \( \propto(x) = \propto(y \leq k|x_1, x_2, \ldots, x_k) \) equates the probability of being the same or below level k

\( \varphi_k \) is the model intercept while \( \rho_1, \rho_2, \ldots, \rho_k \) are logit coefficients.

Therefore, equation (2) can further be expressed as:
\[
\logit(\{Y \leq k| x_1, x_2, \ldots, x_k\}) = \ln \left( \frac{\alpha (Y \leq k| x_1, x_2, \ldots, x_k)}{\alpha (Y > k| x_1, x_2, \ldots, x_k)} \right) = \varphi_k + (-\rho_1 X_1 - \rho_2 X_2 - \cdots - \rho_k X_k)
\]

This research model then becomes:

\[
\ln(\text{Employee Engagement}) = \varphi_k - \rho_1 \text{ambiance} - \rho_2 \text{career path understanding} - \rho_3 \text{communication} - \rho_4 \text{environment} - \rho_5 \text{training} - \rho_6 \text{tools availability}
\]

Result

Table 1 shows the demographic distribution of respondents and descriptive statistics. For gender, the majority of the respondents are male, with a percentage of 71%, while 27.1% are female. This is due to the nature of tasks they are assigned to do as mostly they are into reconnection, repair, marketing, and ensuring the country is supplied with stable electricity.

<table>
<thead>
<tr>
<th>Demographic Factor</th>
<th>Count</th>
<th>% Contribution</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>223</td>
<td>27.1%</td>
<td>1.72</td>
<td>.448</td>
</tr>
<tr>
<td>Male</td>
<td>585</td>
<td>71%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>16</td>
<td>1.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>824</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age Group</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21-30</td>
<td>254</td>
<td>31%</td>
<td>2.00</td>
<td>.856</td>
</tr>
<tr>
<td>31-40</td>
<td>336</td>
<td>41%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>41-50</td>
<td>178</td>
<td>22%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>51-60</td>
<td>40</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>16</td>
<td>1.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>824</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Most of the employees are within the age group 31 – 40, covering a percentage of 41%, followed by 21 – 30 age group with a percentage of 31% and 22% for age 41 – 50, this has proven that majority working in the power sector in the country are mainly youths ranging from age group 21 – 50 as the work requires energetic people while age group 51 -60 has a percentage of 5%. The mean and standard deviation of gender, as seen in table 2, are 1.72 and 0.448, while the mean and standard deviation of the age group are 2 and 0.856.

<table>
<thead>
<tr>
<th>Cronbach's Alpha</th>
<th>No of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.705</td>
<td>8</td>
</tr>
</tbody>
</table>

Table 2: Reliability Statistics

Table 2 show the Cronbach Alpha test, which is a measure to test the degree of reliability or internal consistency among the variables. According to (Shrestha, 2021) that a generally accepted rule is that α ranges from 0.6-0.7 indicates an acceptable level of reliability, and 0.8 or greater a very good level. But, values that are above 0.95 are not necessarily good as this suggests redundancy. The overall Cronbach alpha value for the variables is 0.705, as seen in table 2. Simultaneously, the table also shows the individual value if a variable is deleted where all values are seen to be from 0.6 and above.
Table 3: Chi-Square Tests on Gender and Employee Engagement

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>1.292a</td>
<td>3</td>
<td>.731</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>1.299</td>
<td>3</td>
<td>.729</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>.201</td>
<td>1</td>
<td>.654</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>718</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Chi-Square Tests on Age group and Employee Engagement

<table>
<thead>
<tr>
<th></th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>2.900a</td>
<td>3</td>
<td>.407</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>2.927</td>
<td>3</td>
<td>.403</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>1.495</td>
<td>1</td>
<td>.221</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>718</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tables 3 and 4 were utilized to see if gender and age group (as demographic or socioeconomic factors) have an impact on employee engagement. To that end, it was hypothesized that gender, as a socioeconomic component, has no effect on employee engagement. The chi-square test result, as shown in Table 2, reveals that the values of the various chi-square employed are greater than 0.05. As a result, we fail to reject the null hypothesis and conclude that gender has no effect on employee engagement. Furthermore, in contrast to the null hypothesis, the second hypothesis argues that age group has no effect on employee engagement. The results reveal that it does not, as all chi-square p-values in Table 3 are more than the 0.05 decision criteria level.

Ordinal Regression Analysis

Table 5: Model Fitting Information

<table>
<thead>
<tr>
<th>Model</th>
<th>-2 Log Likelihood</th>
<th>Chi-Square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept Only</td>
<td>856.672</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Final</td>
<td>674.536</td>
<td>182.135</td>
<td>9</td>
<td>.000</td>
</tr>
<tr>
<td>Link function: Logit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6: Goodness of Fit and Pseudo R-Square Summary

<table>
<thead>
<tr>
<th>Goodness of Fit</th>
<th>Chi-Square</th>
<th>df</th>
<th>Sig.</th>
<th>Pseudo R-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson</td>
<td>776.173</td>
<td>813</td>
<td>.819</td>
<td>Cox and Snell</td>
</tr>
<tr>
<td>Deviance</td>
<td>627.816</td>
<td>813</td>
<td>.000</td>
<td>Nagelkerke</td>
</tr>
<tr>
<td>Link function: Logit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5 shows the model fitting information. The model has a chi-square of 182.135, a degree of freedom of 9, and a significance of 0.000. The chi-square statistics are very significant (p < 0.005), implying that the model is definitely a considerable improvement over the baseline or intercept model, i.e., the model provides better predictions than utilizing marginal probabilities to forecast the outcome. Furthermore, the goodness-of-fit statistics in Table 6 with significances above 0.05 (0.819) show that the model fits the data, because the null hypothesis states that the model is good and having a p-value greater than 0.05, the null hypothesis was upheld, implying that the model is a good fit. The Nagelkerke R square, a test of reliability, equally revealed that the model only accounts for 42.4% of the model variance.
Table 7: Parameter Estimates

<table>
<thead>
<tr>
<th>Location</th>
<th>Estimate</th>
<th>Std. Error</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower Bound</td>
</tr>
<tr>
<td><strong>Threshold</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee_Engagement = 1</td>
<td>4.573</td>
<td>.919</td>
<td>24.771</td>
<td>1</td>
<td>.000</td>
<td>2.772</td>
</tr>
<tr>
<td>Employee_Engagement = 2</td>
<td>6.596</td>
<td>.953</td>
<td>47.865</td>
<td>1</td>
<td>.000</td>
<td>4.727</td>
</tr>
<tr>
<td>Employee_Engagement = 3</td>
<td>7.715</td>
<td>.976</td>
<td>62.530</td>
<td>1</td>
<td>.000</td>
<td>5.803</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>Tools</td>
<td>.438</td>
<td>.114</td>
<td>1</td>
<td>.000</td>
<td>.215</td>
</tr>
<tr>
<td></td>
<td>Office_Environment</td>
<td>1.015</td>
<td>.118</td>
<td>74.473</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Career_Understanding</td>
<td>-.083</td>
<td>.134</td>
<td>.389</td>
<td>1</td>
<td>.533</td>
</tr>
<tr>
<td></td>
<td>Regular_Training</td>
<td>.036</td>
<td>.153</td>
<td>.054</td>
<td>1</td>
<td>.816</td>
</tr>
<tr>
<td></td>
<td>Clear_communications</td>
<td>.325</td>
<td>.132</td>
<td>6.040</td>
<td>1</td>
<td>.014</td>
</tr>
<tr>
<td></td>
<td>Customer_satisfaction</td>
<td>.168</td>
<td>.177</td>
<td>.901</td>
<td>1</td>
<td>.342</td>
</tr>
<tr>
<td></td>
<td>Secured_Environment</td>
<td>.364</td>
<td>.144</td>
<td>6.393</td>
<td>1</td>
<td>.011</td>
</tr>
<tr>
<td></td>
<td>[Gender=1]</td>
<td>-.137</td>
<td>.246</td>
<td>.309</td>
<td>1</td>
<td>.579</td>
</tr>
<tr>
<td></td>
<td>[Gender=2]</td>
<td>0^</td>
<td>.</td>
<td>0</td>
<td></td>
<td>.</td>
</tr>
<tr>
<td></td>
<td>[Age_Group=1]</td>
<td>-.102</td>
<td>.236</td>
<td>.187</td>
<td>1</td>
<td>.666</td>
</tr>
<tr>
<td></td>
<td>[Age_Group=2]</td>
<td>0^</td>
<td>.</td>
<td>0</td>
<td></td>
<td>.</td>
</tr>
</tbody>
</table>

Link function: Logit.

Table 8: Test of Parallel Lines

<table>
<thead>
<tr>
<th>Model</th>
<th>-2 Log Likelihood</th>
<th>Chi-Square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null Hypothesis</td>
<td>674.536</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>652.314^b</td>
<td>22.222^c</td>
<td>18</td>
<td>.222</td>
</tr>
</tbody>
</table>

Table 7 shows the parameter estimates of the independent variables and their significance on the dependent variable. From the table, it is evident that explanatory variables like tools, office environment (ambience), clear communications, and secured environment (Health and Safety) are seen to be significant with a p-value less than 0.05, while career understanding, customer satisfaction, regular training, gender and age group do not have any relationship on the dependent variable (employee engagement). Below are the outcomes of the hypotheses set in the empirical review:

The first hypothesis focuses on the workplace environment (ambience) and employee engagement. The office environment (ambience) has an estimate of 1.015, a standard error of 0.118, and a significance of 0.00, according to Table 7. Because the estimated p-value is less than 0.05, we reject the null hypothesis and conclude that the office atmosphere (ambience) does really influence employee engagement. The second hypothesis is about understanding career paths and employee engagement. According to Table 7, the estimate for career path understanding is -0.83, with a standard error of 0.134 and a significance of 0.534. We conclude that career path comprehension has no effect on employee engagement because the calculated p-value is greater than 0.05. The third hypothesis focuses on clear communication and staff involvement. According to Table 7, clear communication has an estimate of 0.325, a standard error of 0.132, and a significance of 0.014. Because the computed p-value is less than 0.05, we reject the null hypothesis and conclude that clear communication influences employee engagement. The fact that the null hypothesis was rejected indicates that a safe environment (Health and Safety) does, in fact, have an effect on employee engagement. The estimates in Table 7 for the fourth hypothesis on the association between a secure environment (Health and Safety) and employee engagement shows 0.364, 0.144 for the standard error, and 0.011 for significance.

Furthermore, the fifth hypothesis is on regular training and employee engagement. According to Table 7, career path understanding has an estimated 0.036, a standard error of 0.153, and a significance of 0.816. Since the calculated p-value is greater than 0.05, we fail to reject the null hypothesis and conclude that regular training does not impact employee engagement. The final hypothesis is about the availability of tools and employee participation. According to Table 7, the estimate for tool availability is 0.438, with a standard error of 0.114 and a significance of 0.00. Because the computed p-value is less than 0.05, we reject the null hypothesis and conclude that tool availability does actually influence employee engagement. The test of parallel lines, as shown in Table 8, is commonly performed with the same null hypothesis as the goodness of fit to determine if the model best matches the data. The null hypothesis states that the model fits well. The estimated p-values for the parallel line test are greater than 0.05 (0.222), which correlates with the goodness of fit analysis in Table 6, indicating that we fail to reject our null hypothesis and conclude that the model best fits the data.
Discussion

This study looked at the effects of ambience, career path comprehension, communication, environment, training, and tool availability on employee engagement. According to our findings, the workplace environment (ambience) has an impact on employee engagement. The privatization of the industry improved office space in line with optimal workplace standards compared to what is available under the public setup. Our findings are consistent with the findings of (Paluku, 2016), who indicated that the workplace environment favourably influences employee engagement. In terms of career path comprehension, our findings suggest that it has no effect on employee engagement, which contradicts previous research findings (Jing & Jingping, 2018). This is due to the enormous number of employees in the same grade level. Unlike during the privatization era, when advancement was based on tenure, this is no longer the case. Vacancies must be available, and prospective employees must meet certain minimal requirements in order to compete for the position. Many employees are comfortable with the status quo and have accepted their fate. As a result, for the vast majority of employees, understanding career paths is not a motivator for engagement.

Furthermore, contrary to study findings such as (Siddiqui & Sahar, 2019), our findings suggest that training has no positive impact on employee engagement. This could be because many of the employees are technicians who prefer to learn on the job rather than in a classroom. The majority of their work is repetitive and monotonous, including separation and reconnection, and fresh knowledge is scarce. Marketers are another significant group of employees who deliver power bills, follow up on unpaid bills, and head disconnection and reconnection teams. In fact, training is viewed as a diversion because it takes field personnel away from the possibility to earn additional unlawful income. Clear communication has been found to have an impact on employee engagement. Since privatization, the communication style in the business has substantially improved, with management conveying clear directions to employees for action. Employee performance has improved as a result. The study also suggests that a clearly defined secured environment (Health and Safety) has an effect on employee engagement. Clear health and safety measures are documented and executed in the power distribution firms observed. Accidents and near misses are reported, and affected employees are compensated; this helps to increase employee engagement. Our findings support the findings of Mohandes and Zhang (2021), who believe that providing health and measures promotes employee engagement. The availability of tools was also discovered to have a favorable impact on employee engagement. The injection of finances into the industry through privatization made tools necessary for the operation and repair of electrical equipment, resulting in improved power distribution and increased employee involvement.

Conclusions

This study investigated the primary factors of employee engagement in Nigeria's electricity sector. Six hypotheses about their impact on employee engagement were developed and tested. Following the work of (Sander et al., 2019; Ariussanto, et al., 2020), we rejected the null hypothesis of the first hypothesis and established a substantial association between ambience and employee engagement. We fail to reject the null hypothesis in the second hypothesis on career path understanding employee engagement. We conclude that understanding career paths has little effect on employee engagement, as substantiated in the literature (e.g., Jing & Jingping, 2018). For the third hypothesis on clear communications and employee engagement, we rejected the null hypothesis and concluded that clear communications impact employee engagement, which is in alignment with the outcome of (Karen et al., 2014). The fourth hypothesis on the impact of health and safety on employee engagement shows that health and safety environment have an impact on employee engagement, which is also in accordance with the work of (Chandraseka, 2011). The null hypothesis of the fifth hypothesis, which is on regular training and employee engagement, was not rejected. This is also in variance with the work of (Siddiqui & Sahar, 2019). The last hypothesis shows a parameter that has not been previously considered before in the literature and the result affirms that work tools availability significantly has relationship on employee engagement. This paper’s findings affirm the social exchange theory and reiterate the importance of non-monetary aspects of employment in the downstream of the electricity sector in Nigeria. Although, the results approve of the sector providing a good working environment (ambiance), investing in health and safety measures and providing necessary tools for their employees to deliver on their jobs, but a lot has to be done on training employee regularly and making everyone to have an understanding of their career-path especially those in the junior cadre.

Research Implication and Policy Recommendation

The above-mentioned findings have substantial research implications. To begin, it is critical to engage employees and solicit their feedback on what they desire or what can be done to boost their engagement or performance level. This aim to create a welcoming working environment in which every person feels free to give their utmost. Furthermore, what works in other industries may not necessarily apply to the energy industry or may necessitate major adaptation. As previously said, managers in the energy industry must embrace two-way communication and ensure their staff have everything they need to accomplish their tasks satisfactorily in order to achieve effective employee engagement. Furthermore, the value of ongoing training in any 21st-century business cannot be overstated. Employees that are constantly and frequently trained are aware of current trends for completing work quickly and efficiently. As a result, managers or decision-makers in the downstream power industry must ensure that their staff are regularly trained, as our findings suggest that regular training has little impact on employee engagement in the sector. This will also provide the employee with knowledge of the sector's main priorities and strategies.
Limitations of the study and recommendations for further studies

As a multi-ethnic developing country, the diversity of the workforce in the electricity sector could be a crucial factor impacting employee engagement. The impact of culture on employee engagement in the Nigerian context was not investigated in this study; future research should take this into account. Furthermore, this research looks at a historical time from a technical standpoint. It is best to return after a year to see whether anything has changed. A qualitative strategy, such as an interview or a mixed technique approach, may also provide some insight.

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Institutional Review Board Statement: Ethical review and approval were waived for this study, due to that the research does not deal with vulnerable groups or sensitive issues.

Data Availability Statement: The data presented in this study are available on request from the corresponding author. The data are not publicly available due to privacy.

Conflicts of Interest: The authors declare no conflict of interest.

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