



EMPLOYEE MOTIVATION AND INDUSTRIAL OUTPUT IN NIGERIA

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ABSTRACT

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This study applied the autoregressive distribution lag (ARDL) econometric approach to examine the long-run effect of employee motivation on industrial output in Nigeria. Data used for the study was sourced from the World Development Indicators (WDI) of the World Bank from 1981 to 2018. Industrial output was proxied by industrial value added (annual % growth) and was used as the dependent variable, while the independent variable is motivation, which was proxied by wage and salaried workers, total (% of total employment) and was modelled on the ILO estimate. Results from the analysis showed that employee motivation is statistically significant and positive in determining the level of industrial output in Nigeria. This result implies that an increase in the level of employee motivation has the potential to increase industrial output by 98%. Therefore, based on the findings, the study recommends that employees should be motivated through regular payment, increased wages and salaries and other bonuses (fringe benefits) to increase industrial productivity.

Contribution/Originality: This study contributes to the existing literature by applying the autoregressive distribution lag (ARDL) econometric approach to examine the impact of employee motivation on industrial output or organizational productivity in Nigeria.

1. INTRODUCTION

Organizations are concerned with how to attain and sustain productivity labor inputs. The success of an organization greatly depends on the quality of the people who work there to achieve the organization's objectives (Nwaeke & Obiekwe, 2017). Performance is a measure of customer satisfaction achieved through employee motivation to proffer quick decisional solutions to problems hindering growth and development of the organization (Abner & Samuel, 2019).

The role of employees in any organization cannot be overemphasized as they are charged with the responsibilities of putting other factors of production (e.g., capital, land, material finance or resources, time) to use in order to attain organizational goals. The success of any organization depends on the ability of managers to provide a motivating environment for their employees (Osabiya, 2015). It is important for organizations to hold their employees in high esteem so that they can contribute effectively and efficiently in carrying out their

productive activities. Organizations should, therefore, provide the context within which high levels of motivation can be achieved by providing incentives and rewards, a satisfying work environment and opportunities for learning and growth (Ogbogu, 2017).

Motivation is one of the key factors that can enhance the level of employee commitment in carrying out their responsibilities for maximum output. Motivation in the context of performance takes on factors, or zeal, encouraging employees to pursue and realize set objectives (Abner and Samuel, 2019). Being able to establish workplace motivation is an essential tool for employees to achieve set goals. Willingness on the part of employees to put in their best efforts without compulsion in order to achieve organizational goals and objectives is the hallmark of motivation (Gberevbie, 2017). The satisfaction of employees in a workplace encourages them to put in their best efforts toward successful completion of a given task, which adds to the continuous growth of the organization. Motivation is very significant in the achievement of the growth of any organization (Geomani, 2012).

According to Armstrong (2012), motivation is “the force that energizes, directs and sustains behavior” towards the realization of stated objectives. Maximum output in an organization is triggered by employees who are motivated to enhance performance. Management should first identify the needs of their employees, because when employee needs are met, he or she would naturally perform without being coerced. It is necessary for employers and decision makers to make greater efforts to attain particular goals. Improvement in productivity requires management to address the needs and concerns of their team members and further understand what drives them to be more productive (Rodriguez, 2015).

This study focuses on employee motivation and industrial output in Nigeria. For effective work performance to thrive in Nigerian industries, the motivation of employees has to be the top priority of managers. According to Chukwudi, Odogwu, and Adedehinbo (2012), organizations in both the public and private sectors in Nigeria have goals that can only be achieved by effectively motivating employees to achieve the desired results. Many workers in Nigeria are disgruntled and discouraged within the work environment; few are satisfied.

Employees in Nigeria are faced with various challenges in the workplace, including lack of promotional opportunities, delay in payment of salaries, and retrenchment. Employees in a workplace can be motivated through various means, such as timely payment of wages, salaries and incentives. Lack of these can have a negative impact on employee performance and output of the organization. These means of financial reward are known as extrinsic motivation. An average employee in Nigeria sees job satisfaction in terms of monetary reward. When this is lacking, their morale on the job becomes low, which automatically affects the output of the organization. Employees ranked monetary reward first, followed by job security, promotion and growth. There are other means of employee motivation, which are called intrinsic motivation. These kinds of motivation are not related to monetary compensation, but recognize employees through promotion, recommendation, etc. Motivation can be achieved through rewarding employees using either financial or non-financial rewards (Mary, Simon, & Kibet, 2018).

In a country like Nigeria, where various industries are competing for survival, the motivation of employees for maximal industrial output is essential. This is because measuring performance is important to the management of industries as it highlights development and achievement. If employee recognition is enhanced, their motivation to work will increase as well as their accomplishments and, consequently, the output of the industry. The degree of employee productivity that ultimately leads to favorable organizational performance is a key indicator of organizational success that should be given greater emphasis as it measures the competitive power of an organization (Hanaysha, 2016; Soltani, 2016).

2. EMPIRICAL REVIEW

Scholars see the concept of motivation differently. According to Armstrong (2012), motivation is concerned with the strength and direction of behavior and the factors that influence people to behave in certain ways. The subject of motivation is vital since it explains why people behave the way they do in an organization. The concept of

motivation focuses on an individual's feeling of enthusiasm and attentiveness to be able to achieve his or her goals effectively. The motivation of employees begins with the realization of unsatisfied needs which creates tension and causes them to act in a certain manner. The satisfaction of these need gives the individual a sense of fulfilment, which, in turn, leads to organizational productivity.

Anwar, Anka, Jamail, and Shaikh (2012) described motivation as the state or condition of being induced to do something. Motivation is, therefore, a concept that is driven by desires and needs that should be satisfied (Ogbogu, 2017). It means that employees in the workplace are encouraged to deliver a given task when their needs are satisfied. Managers should have an adequate understanding of the importance of motivation, thereby enhancing employee retention and strengthening positive behavior to increase organizational output. This is because when employees are well motivated, they render services effectively for maximum output.

Elvina and Chao (2019), in a study on the nexus between employee motivation and work performance, examined the direction of the relationship between motivation and performance of the employees of VTB Bank of Russia. They also assessed the impact of motivation (both intrinsic and extrinsic) on employee performance. One hundred workers represent the population of the study. A quantitative research design was used for the study and the Pearson product moment correlation coefficient was used to test the two hypotheses. Findings revealed that the employees of VTB Bank valued both intrinsic and extrinsic motivation for their industrial performance. However, extrinsic motivation, in particular, had a significant impact on the employees' performance. Following this, the study strongly challenged the employers to improve the payment policies and procedures capable of drawing attention, encouraging, retaining and satisfying workers in the workplace.

Siddiqui and Rida (2019) also extensively conducted research on a similar topic. Their paper examined the impact of motivation on employee performance in Pakistan. Similar to Elvina and Chao (2019), they also factored into their work the difference between the intrinsic and extrinsic motivation and their influence on the workers' performance. The study employed a cross-sectional survey research design and collected primary data through questionnaires administered to a sample size of 200 participants. The study revealed that both intrinsic and extrinsic motivation had a significant impact on the performance of the employees.

Furthermore, Lorincová, Štarchoň, Weberová, Hitka, and Lipoldová (2019) conducted research on employee motivation as a tool to achieve sustainability of business processes. The study aimed to investigate and establish the main disparities in the perception of the desired level of motivation, particularly with respect to gender and job category. Questionnaires were administered to 3720 selected employees in Slovak enterprises, and Student's *t*-test and Tukey's HSD test were employed. Results showed that differences in the perception of the motivation in terms of job category are statistically significant. The study also showed that motivational factors, such as basic salary, workplace atmosphere and good teamwork, greatly motivated all the workers. The researchers advanced the implementation of the results in motivational programs by the employees within the human resource department in order to enhance effective human resource management.

Ojogbo, Ofili, and Anthony (2018) conducted research to establish the implications of employee motivation on organizational productivity in the Nigerian media industry. The research aimed to determine the factors put in place to motivate employees in the Delta State Broadcasting Service in order to improve their productivity. A mixed (quantitative and qualitative) methodology was adopted, and the data were collected through questionnaires and interviews. A total of 62 questionnaires were administered after the study adopted a purposive sampling technique and were analyzed using descriptive and inferential statistics (chi-square). The findings showed a significant relationship between incentives and productivity of workers in the DSBS. Moreover, the results revealed that financial incentives had a stronger impact on employees than any other form of motivation. Therefore, the study recommends that the management improves worker motivation techniques as well as expand their motivational programs to consider some other psychological factors.

Solomon, Hashim, Mehdi, and Ajagbe (2012) studied employee motivation and organizational performance in multinational companies, using Cadbury Nigeria Plc as a case study. The research investigated the effectiveness of employee motivation in improving organization performance in multinational companies in Nigeria’s manufacturing sector. While the researchers administered 100 questionnaires to the respondents, only 87 were retrieved. The data were analyzed using descriptive and inferential statistics (Pearson’s product moment correlation). The study uncovered a positive relationship between motivation and employee productivity vis-à-vis organizational performance. In other words, a particularly good and effective incentive system established in Cadbury Nigeria Plc motivates the employees to a large extent, which consequently contributes to their industrial output and workplace performance. The study therefore recommends that the senior management staff members strive for continuous improvements in their motivational programs to sustain the employees’ high organizational performance.

From the foregoing, motivation is a construct used to describe behavior; it represents the reasons for people's activities, wishes and needs (Oluwamayowa, Olubukola, & Adeolu, 2019). The above studies have also shown that there are several ways through which employees can be motivated within an organization. However, it is important for managers to first identify and meet the needs of their employees. Strategies for motivating employees are compensation, employee development, free communication flow, conducive working environment, promotion, etc. Financial incentives are seen as a major form of motivation because it is a means through which individuals achieve a number of different ends. Akwara, Abutu, Akwara, and Okwelume (2014) stated that a man’s needs arise mainly from having a lot of responsibilities not only to himself but also to his fellows and society as he interacts with his environment. Team-building is also a way of motivating employees in the workplace as it encourages people to work together and builds their capacity to engage in healthy competition.

3. METHODOLOGY

3.1. Model Specification

The model for this study presented in its implicit form as shown in Equation 1:

$$INDQ = f(EPC, EIN, MOTV, INF) \tag{1}$$

where *INDQ* is industrial output proxied by industrial value added (annual % growth), *EPC* is electric power consumption measured in kilowatts (kWh) per capita, *EIN* is employment in industry measured as a percentage of total employment modeled on the International Labour Organization (ILO) estimate, *MOT* is motivation proxied by wage and salaried workers, total (% of total employment) (modeled ILO estimate), and *INF* is inflation measured as consumer prices (annual %). Therefore, the explicit form of the model is shown in Equation 2:

$$INDQ = \beta_0 + \beta_1 EPC + \beta_2 EIN + \beta_3 MOTV + \beta_4 INF + \mu_t \tag{2}$$

The ARDL model specification is shown in Equation 3:

$$\begin{aligned} \Delta INDQ_t = & \beta_0 + \beta_1 IND_{t-1} + \beta_2 EPC_{t-1} + \beta_3 EIN_{t-1} + \beta_4 MOTV_{t-1} + \beta_5 INF_{t-1} + \sum_{i=1}^q \phi_1 \Delta IND_{t-1} \\ & + \sum_{i=1}^q \phi_2 \Delta EPC_{t-1} + \sum_{i=1}^q \phi_3 \Delta EIN_{t-1} + \sum_{i=1}^q \phi_4 \Delta WAS_{t-1} + \sum_{i=1}^q \phi_5 \Delta INF_{t-1} \\ & + \mu_t \end{aligned} \tag{3}$$

The a priori expectation of the study is that the key variable (motivation proxied by wages and salaries) has a positive impact on industrial productivity or output; it means that the estimated coefficient of motivation should be positive and greater than zero, but not equal to one; thus, $\beta_4 > 0$. Equation 4 presents the error correction model:

$$\begin{aligned}
 INDQ_t = & \beta_0 + \beta_1 IND_{t-1} + \beta_2 EPC_{t-1} + \beta_3 EIN_{t-1} + \beta_4 MOTV_{t-1} + \beta_5 INF_{t-1} + \sum_{i=1}^q \phi_1 \Delta IND_{t-1} \\
 & + \sum_{i=1}^q \phi_2 \Delta EPC_{t-1} + \sum_{i=1}^q \phi_3 \Delta EIN_{t-1} + \sum_{i=1}^q \phi_4 \Delta WAS_{t-1} + \sum_{i=1}^q \phi_5 \Delta INF_{t-1} + \gamma ECM_{t-1} \\
 & + \mu_t \tag{4}
 \end{aligned}$$

From Equation 4, where Δ is the change in operator and ECM_{t-1} denotes the error correction term, γ shows the adjustment speed. This represents how the system adjusts from the short-run to the long-run equilibrium when distorted by exogenous shocks. The study applied the ARDL model on the data sourced from the WDI and the results obtained from the analysis are presented in section four.

4. RESULTS

4.1. Descriptive Analysis

The descriptive statistics of the variables used in this study are reported in this subsection. The features reported include the mean, median, mode, standard deviation, variance, and the minimum and maximum values. The mean of industrial output (INDQ), electric power consumption (EPC), motivation proxied by employment in industry (EIN), wage and salaried workers (MOTV) and inflation (INF) are 1.97307, 101.0467, 12.16974, 16.66574 and 19.55176, respectively. The *INDQ, EPC, EIN, MOVT and INF* maximum values from Table 1 are 18.05893, 156.7972, 12.50700, 18.84900 and 72.83550, respectively, while their minimum values are -8.850374, 50.90104, 11.44600, 14.49400 and 5.382224, respectively. As shown in Table 1, the coefficient of the kurtosis for all variables is greater than zero and are therefore leptokurtic. The summary statistics of the variables are presented in Table 1.

Table 1. Descriptive statistic table.

| | INDQ | EPC | EIN | MOTV | INF |
|--------------|-----------|----------|-----------|----------|----------|
| Mean | 1.973071 | 101.0467 | 12.16974 | 16.66574 | 19.55176 |
| Median | 1.918080 | 91.18731 | 12.16550 | 16.28600 | 12.15626 |
| Maximum | 18.05893 | 156.7972 | 12.50700 | 18.84900 | 72.83550 |
| Minimum | -8.850374 | 50.90104 | 11.44600 | 14.49400 | 5.382224 |
| Std. Dev. | 5.571469 | 26.81432 | 0.240701 | 1.585317 | 18.14077 |
| Skewness | 0.497866 | 0.494649 | -0.710973 | 0.037751 | 1.653291 |
| Kurtosis | 3.638382 | 2.314369 | 3.647743 | 1.289544 | 4.362996 |
| Jarque-Bera | 1.981939 | 2.052467 | 3.458797 | 4.152759 | 18.12093 |
| Probability | 0.371217 | 0.358354 | 0.177391 | 0.125383 | 0.000116 |
| Sum | 67.08441 | 3435.588 | 413.7710 | 566.6350 | 664.7599 |
| Sum Sq. Dev. | 1024.362 | 23727.25 | 1.911920 | 82.93664 | 10859.89 |
| Observations | 34 | 34 | 34 | 34 | 34 |

4.2. Unit Root Test for Stationarity

Due to the nature of the time series data, and in order to eliminate spurious results from non-stationary data, the augmented Dickey-Fuller unit root test was conducted; the results are reported in Table 2 using the Schwarz

Criterion (SC). The result from the augmented Dickey–Fuller test indicates that only INDQ was integrated of order zero I (0), which is stationary at level, while EPC, EIN, MOTV and INF were integrated of order one I (1), indicating that they were stationary only after first differencing at the 5% level. This result means we can conduct the autoregressive distributive lag (ARDL) analysis since none of the variables is integrated of order two.

Table 2. Augmented Dickey–Fuller unit root test.

| Variable | ADF test at level | ADF test at first difference | Critical value at 5% | Order of integration |
|----------|-------------------|------------------------------|----------------------|----------------------|
| INDQ | -5.833956 | -10.64634 | -2.954021 | I (0) |
| EPC | -1.595608 | -7.53885 | -2.957110 | I (1) |
| EIN | -2.245766 | -5.578519 | -2.976263 | I (1) |
| MOTV | -0956263 | -3.200821 | -2.976263 | I (1) |
| INF | -2.128278 | -3.30003 | -2.991878 | I (1) |

4.3. Lag Length Selection Criteria

Table 3 presents the result of the most appropriate lags from the ARDL bound test. Confirming the suitable lag gives a more reliable output while preventing serial correlation and an unbiased result. As observed from table 3, the most appropriate lag to use is one, and this is confirmed by all criteria.

Table 3. VAR lag order selection criteria.

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|-----------|-----------|-----------|-----------|-----------|-----------|
| 0 | -419.2059 | NA | 224939.4 | 26.51287 | 26.74189 | 26.58878 |
| 1 | -309.4234 | 178.3965* | 1149.438* | 21.21397* | 22.58809* | 21.66945* |
| 2 | -299.0379 | 13.63098 | 3241.769 | 22.12737 | 24.64660 | 22.96243 |

Note: * indicates lag order selected by the criterion LR: sequential modified LR test statistic (each test at 5% level), FPE: final prediction error, AIC: Akaike information criterion, SC: Schwarz information criterion, HQ: Hannan–Quinn information criterion

4.4. ARDL Cointegration Bound Test

The existence of a long-run relationship was examined with the ARDL bound test and the results are presented in Table 4. From the result, it is clear that the F-statistic value (9.8878) goes beyond the critical value of both the lower bound (2.86) and upper bound (4.01) at the 5% level of significance, as given by Pesaran, Shin, and Smith (2001). We, therefore, cannot accept the null hypothesis, which states that there is no long-run relationship among the variables tested as a long-run relationship was confirmed.

Table 4. Bound test results.

| F-Bound test | | Null hypothesis: No levels relationship | | |
|----------------|----------|---|-------|-------|
| Test Statistic | Value | Significant | I (0) | I (1) |
| F-Statistic | 9.887786 | Asymptotic: n=1000 | | |
| K 4 | | 10% 2.45 3.52 | | |
| | | 5% 2.86 4.01 | | |
| | | 2.5% 3.25 4.49 | | |
| | | 1% 3.74 5.06 | | |

4.5. ARDL and ECM Result

After confirming cointegration among INT, EPC, EIN, MOTV and INF, we must estimate the ARDL and error correction model. Table 5 presents the estimate of the long-run coefficients on the ARDL (4,3,4,4,4) model, while Table 6 shows the error correction model.

Table 5. ARDL error correction regression.

| | | | | |
|------|------------|------------|-----------|--------|
| EPC | 0.076404 | 0.111865 | 0.683005 | 0.5201 |
| EIN | 1.768549 | 8.433164 | 0.209714 | 0.8408 |
| MOTV | 0.984887 | 1.403819 | 0.701577 | 0.5092 |
| INF | -0.057087 | 0.131703 | -0.433454 | 0.6798 |
| C | -41.365316 | 105.243290 | -0.393045 | 0.7079 |

Note: Cointeq = $IND - (0.0764 * EPC + 1.7685 * EIN + 0.9849 * WAS - 0.0571 * INF)$.

The estimate of the coefficient shows electricity power consumption, employment in industry and wage and salary to be positively related to industry and negatively related to inflation. For the purpose of this study, wage and salary is seen to have a positive influence on industrial output as a unit increase in wage and salary leads to a 0.9849 unit increase in industrial output. This is in line with the a priori expectation but is not statistically significant.

The dynamic adjustment of the variable is shown by the short-run coefficient. The coefficients for EPC, EIN and INF are significant in the short run. The error correction model (ECM) as expected is negative at -0.7817 and statistically significant at the 5% level. This result confirms the existence of a long-run relationship between the variables. From the result, the ECM was put at -0.7817, which reveals that in the case of disequilibrium in the economy, the speed of adjustment back to equilibrium is approximately 78.17%.

Table 6. ARDL error correction regression (selected model: 4,3,4,4,4).

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------|-------------|------------|-------------|--------|
| C | -32.33393 | 3.715088 | -8.703410 | 0.0001 |
| D(INDQ(-1)) | -0.457295 | 0.103748 | -4.407770 | 0.0045 |
| D(INDQ(-2)) | 0.191759 | 0.120604 | 1.589985 | 0.1629 |
| D(IND@(-3)) | 0.413022 | 0.079473 | 5.196997 | 0.0020 |
| D(EPC) | -0.228829 | 0.037454 | -6.109592 | 0.0009 |
| D(EPC(-1)) | -0.345532 | 0.043933 | -7.864964 | 0.0002 |
| D(EPC(-2)) | -0.343013 | 0.042527 | -8.065703 | 0.0002 |
| D(EIN) | 6.865689 | 2.658174 | 2.582859 | 0.0416 |
| D(EIN(-1)) | 9.913636 | 2.226879 | 4.451807 | 0.0043 |
| D(EIN(-2)) | 21.31603 | 2.294345 | 9.290685 | 0.0001 |
| D(EIN(-3)) | 3.888043 | 2.710009 | 1.434698 | 0.2014 |
| D(WAS) | -1.133903 | 2.184128 | -0.519156 | 0.6222 |
| D(MOTV(-1)) | 9.727429 | 2.383229 | 4.081617 | 0.0065 |
| D(MOTV(-2)) | 11.53446 | 2.539571 | 4.541894 | 0.0039 |
| D(MOTV(-3)) | -13.61757 | 2.656561 | -5.126016 | 0.0022 |
| D(INF) | -0.115156 | 0.033568 | -3.430558 | 0.0140 |
| D(INF(-1)) | -0.097886 | 0.030375 | -3.222612 | 0.0181 |
| D(INF(-2)) | 0.026828 | 0.030372 | 0.883300 | 0.4111 |
| D(INF(-3)) | 0.064922 | 0.027419 | 2.367757 | 0.0557 |
| ECM (-1) | -0.781668 | 0.086112 | -9.077346 | 0.0001 |

4.6. Diagnostic and Stability Checks

In order to validate the results from the ARDL model, diagnostic and stability tests (Breusch–Godfrey serial correlation LM test and Breusch–Pagan–Godfrey heteroskedasticity test) were conducted and the results are reported in Table 7, Table 8, Figure 1 and Figure 2, respectively.

The Breusch–Godfrey serial correlation LM test reported in Table 5 with a probability value greater than 5% shows no evidence of serial correlation, while the heteroskedasticity diagnostic test reported in Table 6 with a value greater than 5% also reveals no evidence of heteroskedasticity. Additionally, the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) were further used to test the stability of the model. The plots of the equation lie within the 5% significance level (see Figure 1 and Figure 2). We can therefore infer that the model is stable.

Table 7. Breusch–Godfrey serial correlation LM test.

| | | | |
|---------------|----------|---------------------|--------|
| F-statistic | 0.842191 | Prob. F(1,5) | 0.4009 |
| Obs*R-squared | 4.324703 | Prob. Chi-square(1) | 0.0376 |

Table 8. Breusch–Pagan–Godfrey f-statistic heteroskedasticity.

| | | | |
|---------------------|----------|----------------------|--------|
| F-statistic | 2.317037 | Prob. F(23,6) | 0.1498 |
| Obs*R-squared | 26.96417 | Prob. Chi-Square(23) | 0.2575 |
| Scaled explained SS | 1.598913 | Prob. Chi-Square(23) | 1.0000 |

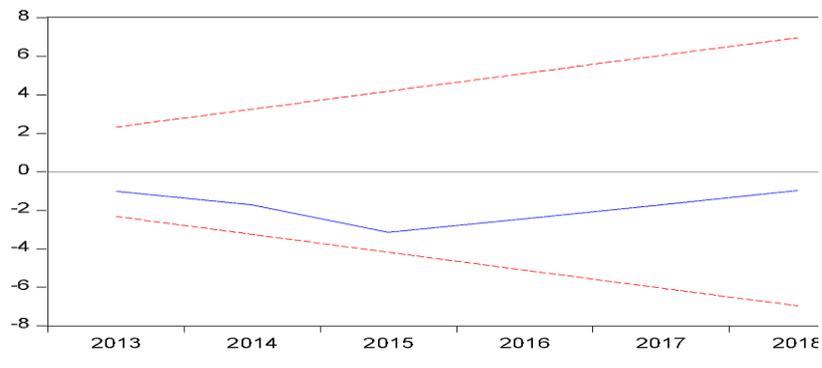


Figure 1. CUSUM.

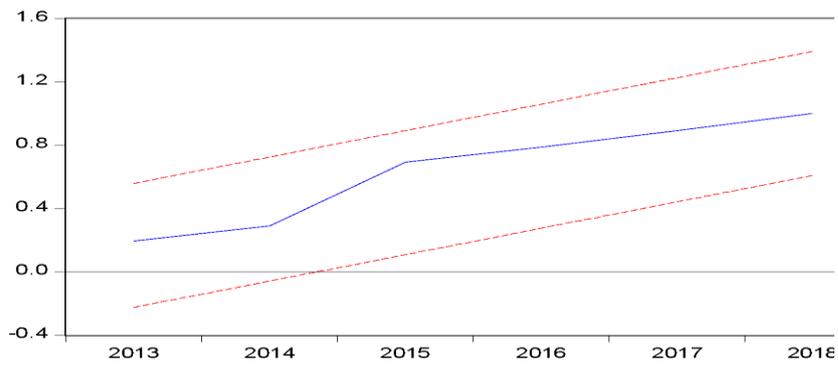


Figure 2. CUSUMSQ.

5. SUMMARY AND CONCLUSION

This study examined how employee motivation affects industrial output in Nigeria. The study applied the autoregressive distribution lag (ARDL) model to examine the long-run effect of motivation on industrial output in Nigeria. Data used was sourced from the World Development Indicators (WDI) of the World Bank from 1981 to 2018. Five variables were employed: industrial output proxied by industrial value added (annual % growth) and was used as the dependent variable, while the independent variables are electric power consumption measured in kilowatts (kWh) per capita, employment in industry measured as a percentage of total employment modeled on the International Labour Organization estimate, motivation proxied by wage and salaried workers, total (% of total employment) and was modelled on the ILO estimate, and inflation measured by consumer prices (annual %).

Results from the ARDL showed that among other things, employee motivation is statistically significant in determining the level of industrial output in Nigeria. This result implies that increased motivation has the potential to increase industrial output by 98%. On the other hand, inflation decreased and was found to reduce industrial output by 5.71%. This is because inflation increased the cost of industrial input and lower labor real wage rate (purchasing power parity), increased cost of inputs may lead to industries purchasing substandard input materials, which may lower output. Also, the study found that electricity power consumption increased industrial output by

7.64%. This means that constant electricity power supply reduces industrial cost of power, thereby increasing output. Therefore, based on the findings, the study recommends that employees should be motivated through regular payment, increased wages and salaries and other bonuses to increase productivity.

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REFERENCES

- Abner, I. P., & Samuel, U. E. (2019). Employees motivation in a competitive service and manufacturing sectors performance. *Kuwait Chapter of the Arabian Journal of Business and Management Review*, 8(2), 30-39.
- Akwara, A. F., Abutu, G., Akwara, N. F., & Okwelum, R. (2014). Motivation as a tool for enhancing productivity in the organized private sector of the Nigerian Economy: A case study of the tourism and hospitality industry in Nigeria. *International Journal of Democratic and Development Studies*, 2(1), 17-25.
- Anwar, A. S. G., Anka, L. M., Jamail, M. B., & Shaikh, F. M. (2012). Motivation as a tool for effective staff productivity in the public sector: A case study of raw materials research and development council of Nigeria. *Asia Social Science*, 8(11), 85.
- Armstrong, M. (2012). *Armstrong's handbook of human resource management practice* (12th ed.). London: Kogan Page.
- Bandara, K. M. N. S., & Weligodapola, M. (2013). A study on the relationship between labour productivity and motivation; with special reference to Hirdaramani Group of Companies. 1, 7- 12.
- Chukwudi, F. A., Odogwu, C. C., & Adedehinbo, E. B. (2012). Motivation and employees performance in the public and private sector in Nigeria. *International Journal of Business Administration*, 3(1), 31-40.
- Elvina, S., & Chao, L. Z. (2019). A study on the relationship between employee motivation and work performance. *IOSR Journal of Business and Management*, 21(2), 59-68.
- Gberevbie, D. E. (2017). *Public administration: A conceptual perceptive*. Nigeria: Cardinal Publisher Ibadan.
- Geomani. (2012). Impact of motivation on employee job performance. 46. Retrieved from: http://inythesis.typed.com/term_paper_topics/2010/01the_impact-of-motivation-on_employee, Doctoral dissertation, University of Central Florida Orlando, Florida.
- Hanaysha, J. (2016). Testing the effects of employee empowerment, teamwork, and employee training on employee productivity in higher education sector. *International Journal of Learning and Development*, 6(1), 164-178.
- Lorincová, S., Štarchoň, P., Weberová, D., Hitka, M., & Lipoldová, M. (2019). Employee motivation as a tool to achieve sustainability of business process. *Sustainability*, 11(13), 3509. Available at: <https://doi.org/10.3390/su11133509>.
- Maduka, C. E., & Okafor, O. (2014). Effect of motivation on employee productivity: A study of manufacturing companies in Nnewi. *International Journal of Managerial Studies and Research*, 2(7), 137-147.
- Mary, K. W., Simon, K., & Kibet, K. (2018). Reward management strategies and employee performance in selected universities in Nakuru County, Kenya. *Journal of Human Resource Management*, 6(3), 95-102.
- Nwaeke, L. I., & Obiekwe, O. (2017). Impact of manpower training and development on organizational productivity and performance a theoretical review. *European Journal of Business and Management*, 9(4).
- Ogbogu, C. (2017). The effects of motivation on staff job performance: Evidences from the Lagos State Ministry of environment, Nigeria. *Journal of Sustainable Development*, 10(2), 183-190. Available at: <https://doi.org/10.5539/jsd.v10n2p183>.
- Ojogbo, L. U., Ofili, P. N., & Anthony, D. A. (2018). Employee motivation and its implication on organizational productivity in Nigerian Media Industry. *Journal of Applied and Advanced Research*, 3(2), 32-40.
- Oluwamayowa, A., Olubukola, G. Y., & Adeolu, A. A. (2019). An assessment of the influence of employee motivation on performance output: A case of Nigerian Bottling Company. *IOSR Journal of Business and Management (IOSR-JBM)*, 21(11), 47-53.

- Osabiya, B. J. (2015). The effect of employees motivation on organizational performance. *Journal of Public Administration and Policy Research*, 7(4), 62-75.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326. Available at: <https://doi.org/10.1002/jae.616>.
- Rodriguez, A. (2015). Motivation in action: How motivation can make employees more productive. Retrieved from: <https://www.imindq.com/blog/motivationin-action-how-motivation-can-make-employees-more-productive-part-2>. [Accessed 15 September 2015].
- Siddiqui, D. A., & Rida, N. (2019). Impact of motivation on employees performance in Pakistan. *Business Management and Strategy*, 10(1), 1-22.
- Solomon, O., Hashim, N. H., Mehdi, Z. B. T., & Ajagbe, M. A. (2012). Employee motivation and organizational performance in multinational companies: A study of Cadbury Nigeria Plc. *International Journal of Research in Management and Technology*, 2(3), 303-312.
- Soltani, M. K. (2016). The relationship between quality of work life and employee productivity general administration of sport and youth Sistan and Baluchestan Province. *The Social Sciences*, 11(10), 2642-2647.

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