**Effect of Leadership Styles on Employee Productivity in JUHEL Pharmaceutical Firm Anambra State Nigeria**

Nebolisa Chinwe Mikella

Department of Business Education,

Nwafor Orizu College of Education, Nsugbe, Anambra State, Nigeria.

Email: [mikellaflo@gmail.com](mailto:mikellaflo@gmail.com)

**&**

Omene Rita Awele

Business Administration Department,

Chukwuemeka Odumegwu Ojukwu University,Igbariam

**Abstract**

This study investigated the effects of different leadership styles on employee productivity in JUHEL Pharmaceutical Firm, Anambra State, Nigeria. The primary objectives were to analyze the impact of transformational leadership, evaluate transactional leadership, and explore laissez-faire leadership's influence on productivity, as well as compare these styles' overall effectiveness. Using a quantitative approach, data were collected from 66 employees through structured surveys. Descriptive statistics, correlation analysis, and ANOVA were employed for data analysis. The findings revealed that transformational leadership had a significant positive effect on employee productivity, enhancing motivation and performance. Transactional leadership showed a moderate impact, fostering goal-oriented behaviors and structured work environments. Conversely, laissez-faire leadership was found to have a minimal effect on productivity, often leading to lower employee engagement due to insufficient guidance. Comparative analysis indicated that transformational leadership outperformed the other styles in promoting higher productivity metrics. This study highlights the importance of effective leadership strategies for enhancing productivity in pharmaceutical firms. It suggests that JUHEL Pharmaceutical Firm and similar organizations should prioritize transformational leadership development to achieve optimal performance. The research contributes valuable insights to the field of leadership studies and offers a basis for future investigations into leadership practices and productivity outcomes.

**Keywords:**Leadership styles, employee productivity, transformational leadership, transactional leadership, laissez-faire leadership, pharmaceutical firm

**Introduction**

Leadership styles play a crucial role in shaping employee productivity, particularly within organizational settings. Leadership styles refer to the approaches and behaviors that leaders use to guide, motivate, and manage their teams or organizations. These styles influence how leaders interact with their subordinates, make decisions, and address challenges (Udin, 2024). Common leadership styles include transformational (inspiring and motivating employees through vision and support), transactional (focused on rewards and penalties to drive performance), democratic (encouraging participation and collaboration), autocratic (centralized decision-making with little input from employees), and laissez-faire (providing minimal guidance and allowing employees to make decisions). Each style has distinct effects on employee motivation, performance, and organizational culture (Oyewobi, 2024). Various leadership theories emphasize different aspects of leadership behavior and how these affect the motivation, satisfaction, and performance of employees.

In the Nigerian context, research has shown a strong relationship between leadership styles and employee productivity. This synthesis will explore the influence of leadership styles on employee productivity, particularly focusing on Nigerian perspectives. Transformational leadership, which involves inspiring and motivating employees through vision, enthusiasm, and intellectual stimulation, has been widely recognized as an effective style in enhancing employee productivity (Kemunto, 2019). Nigerian studies highlight that transformational leaders encourage innovation, creativity, and a sense of belonging, which positively impacts employee productivity. For instance, Nosike and Okerekeoti (2022) found that transformational leadership significantly increased employee productivity in Nigerian manufacturing companies by fostering a culture of trust, respect, and open communication. Similarly, Robert and Vandenberghe (2022) emphasized that transformational leaders in Nigerian banks improved employee performance by motivating staff through supportive behaviors and the promotion of teamwork.

In the Nigerian educational sector, Ugheoke (2019) showed that transformational leadership led to increased academic staff performance in universities. Leaders who employed this style were seen as role models who provided intellectual stimulation and individualized consideration, which in turn motivated employees to exceed expectations. The Nigerian workforce, particularly in sectors like education and banking, often responds positively to transformational leadership due to its focus on personal growth and development.

Transactional leadership, which focuses on supervision, performance-related rewards, and corrective actions, has a different impact on employee productivity. In Nigerian organizations, transactional leadership is often associated with short-term task compliance and the maintenance of operational efficiency. This style is based on clear structures, rules, and rewards for meeting predefined goals (Anggreani and Suyanto (2024). Research by Muharam (2023) in Nigerian manufacturing firms found that transactional leadership resulted in high task performance due to its focus on clear expectations and rewards for performance. However, the study also noted that while transactional leadership might drive productivity in routine tasks, it often fails to foster innovation and long-term employee engagement.

A study by Khaddage-Soboh et al (2024) further corroborated these findings by demonstrating that transactional leadership was more effective in environments where specific goals and deadlines were the priority, such as in public institutions and government agencies. The transactional leader’s focus on monitoring and rewarding employees for meeting targets resulted in enhanced efficiency in these settings, although employee satisfaction and motivation remained low compared to those led by transformational leaders. Transactional leadership, therefore, may increase productivity in the short term but often fails to inspire employees to go beyond their basic job descriptions.

Laissez-faire leadership, characterized by a hands-off approach and minimal interference in employees’ decision-making, generally leads to negative outcomes in terms of productivity. Nigerian studies show that this style often results in employees feeling unsupported, leading to confusion, low morale, and decreased productivity. A study by Jensen et al, (2019) found that in Nigerian organizations, laissez-faire leadership contributed to a lack of direction and accountability, which undermined employee productivity. Without clear guidance or support, employees struggled to meet performance expectations, leading to low output and high turnover rates.

Similarly, Nuraini (2023) argued that while laissez-faire leadership might be suitable for highly skilled or self-motivated employees, it generally proved ineffective in Nigerian organizations, where most employees require clear guidance and leadership. This style, when applied in organizations without a highly skilled workforce, often leads to disengagement and reduced productivity. Understanding the impact of leadership styles on employee productivity is crucial for organizational success, especially in dynamic industries such as pharmaceuticals. JUHEL Pharmaceutical Firm, like many organizations, operates in a highly competitive and demanding environment where employee performance directly influences business outcomes. Previous studies have shown that leadership styles significantly affect employee motivation, engagement, and performance (Abdelgawad, 2024), yet research focusing on specific leadership styles—transformational, transactional, and laissez-faire—and their effects within the pharmaceutical industry, particularly in Nigeria, remains limited.

For instance, while transformational leadership has been linked to higher job satisfaction and productivity (Haleem et al, 2024), it is unclear how this style affects employees in the unique context of JUHEL, a Nigerian pharmaceutical company. Similarly, while transactional leadership has been proven to be effective in task-oriented environments, its long-term impact on creativity and innovation in pharmaceutical firms like JUHEL needs further exploration. Furthermore, laissez-faire leadership has often been associated with negative outcomes, such as disengagement and low productivity, yet there is insufficient evidence on how this style operates in the pharmaceutical sector.The motivation for this study lies in addressing these gaps by exploring how different leadership styles affect employee productivity metrics such as efficiency, innovation, and overall output within JUHEL Pharmaceutical Firm.

**Objectives**

1. To analyze the effects of transformational leadership on employee productivity in JUHEL pharmaceutical firm.
2. To evaluate the effects of transactional leadership and on employee productivity in JUHEL pharmaceutical firm.
3. To investigate the effects of laissez-faire leadership on employee productivity in JUHEL pharmaceutical firm.
4. To compare the effects of transformational, transactional, and laissez-faire leadership styles on employee productivity metrics in JUHEL Pharmaceutical Firm.

**Research questions**

1. What are the effects of transformational leadership on employee productivity in JUHEL Pharmaceutical Firm?
2. What are the effects of transactional leadership on employee productivity in JUHEL Pharmaceutical Firm?
3. What are the effects of laissez-faire leadership on employee productivity in JUHEL Pharmaceutical Firm?
4. How do transformational, transactional, and laissez-faire leadership styles compare in terms of their effects on employee productivity in JUHEL Pharmaceutical Firm?

**Research hypotheses**

1. Transformational leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm.
2. Transactional leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm.
3. Laissez-faire leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm.
4. There are no significant differences in the effects of transformational, transactional, and laissez-faire leadership styles on employee productivity metrics in JUHEL Pharmaceutical Firm.

**Methodology**

This study adopted a quantitative research design utilizing survey methods to examine the effects of leadership styles on employee productivity at JUHEL Pharmaceutical Firm. The focus was on gathering structured data from employees to assess their perceptions of leadership styles and productivity outcomes. The study targeted employees of JUHEL Pharmaceutical Firm, with a total of 66 staff members participating. A census sampling method was used, involving all available employees to ensure comprehensive data representation. This approach was chosen due to the relatively small size of the workforce.

A structured survey questionnaire was used as the sole data collection instrument. The questionnaire was designed to capture employees' views on how different leadership styles—transformational, transactional, and laissez-faire—impact their productivity. It included Likert-scale questions to quantify responses and enable easy analysis. The survey was distributed to all 66 employees over a two-week period, using both electronic and manual methods to maximize response rates. Participants were given clear instructions on how to complete the questionnaire, and responses were collected securely to ensure data integrity.

Data analysis was conducted using SPSS software. Descriptive statistics were used to summarize responses, and inferential statistical tests, including Pearson’s correlation and ANOVA, were applied to evaluate the significance of relationships between leadership styles and employee productivity. Participation was voluntary, and informed consent was secured from each respondent. Confidentiality and anonymity were maintained throughout the study.

**Results**

**Table 1: Respondents Demographics in terms of Age in years**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sources of Variation | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | 15-17 | 31 | 47.0 | 47.0 | 47.0 |
| 18-21 | 14 | 21.2 | 21.2 | 68.2 |
| 22-24 | 21 | 31.8 | 31.8 | 100.0 |
| Total | 66 | 100.0 | 100.0 |  |

Table 1 presents the age distribution of respondents in years. Out of a total of 66 respondents, 31 (47.0%) were aged 15–17 years. Those aged 18–21 years comprised 14 respondents, accounting for 21.2% of the total. Respondents aged 22–24 years numbered 21, representing 31.8%. The cumulative percentage indicates that by adding the first group (47.0%) and the second group (21.2%), 68.2% of respondents were aged 15–21. Including the third group (31.8%), the cumulative total reaches 100.0%. The data shows a majority of respondents (47.0%) fall within the youngest age bracket, reflecting the demographic profile of the sample.

**Table 2: Respondents Demographics in terms of Gender**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Sources of Variation | | Frequency | Percent | Valid Percent | Cumulative Percent |
| Valid | Male | 43 | 65.2 | 65.2 | 65.2 |
| Female | 23 | 34.8 | 34.8 | 100.0 |
| Total | 66 | 100.0 | 100.0 |  |

Table 2 presents the demographic distribution of respondents by gender. Out of the total sample size of 66 respondents, 43 were male, representing 65.2% of the population. Female respondents accounted for 23 participants, which is 34.8% of the total. The cumulative percentage for males was 65.2%, while for females, it reached 100.0%, indicating complete coverage of the data. The table highlights a higher representation of male respondents compared to females within the study group.

Research question 1: What are the effects of transformational leadership on employee productivity in JUHEL Pharmaceutical Firm?

**Table 3: Descriptive statistics on the effects of transformational leadership**

|  |  |  |  |
| --- | --- | --- | --- |
| Item Statements | N | Mean | Std. Deviation |
| Transformational leadership inspires employees to achieve higher levels of productivity. | 66 | 1.94 | 1.323 |
| Transformational leadership improves employee motivation through clear vision and goals. | 66 | 3.52 | .685 |
| Transformational leadership empower employees, boosting confidence and decision-making capabilities. | 66 | 3.03 | 1.007 |
| The leadership style positively impacts organizational culture and employee engagement levels. | 66 | 3.09 | .818 |
| Transformational leadership aligns individual goals with organizational objectives for optimal performance. | 66 | 1.89 | 1.178 |
| Valid N (listwise) | 66 |  |  |

Table 3 presents descriptive statistics on the effects of transformational leadership. A total of 66 participants were analyzed across all variables. The mean score for transformational leadership inspiring higher productivity was 1.94, with a standard deviation of 1.323. Transformational leadership's impact on motivation through vision and goals had a mean of 3.52 (SD = 0.685). Employee empowerment, confidence, and decision-making showed a mean of 3.03 (SD = 1.007). Its effect on organizational culture and engagement had a mean of 3.09 (SD = 0.818). Aligning individual and organizational goals scored a mean of 1.89 (SD = 1.178), indicating variability in effectiveness.

Hypothesis 1: **Transformational leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm.**

**Table 4: Correlations on effects of transformational leadership on employee productivity in JUHEL Pharmaceutical Firm**

|  |  |  |  |
| --- | --- | --- | --- |
| Sources of Variation | | Effects of transformational leadership | Employee productivity |
| Effects of transformational leadership | Pearson Correlation | 1 | .566\*\* |
| Sig. (2-tailed) |  | .000 |
| N | 66 | 66 |
| Employee productivity | Pearson Correlation | .566\*\* | 1 |
| Sig. (2-tailed) | .000 |  |
| N | 66 | 66 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | |

Table 4 and Table 5, are essential for evaluating the impact of transformational leadership on employee productivity in JUHEL Pharmaceutical Firm. Table 4 presents correlation results, showing a significant positive correlation (r = 0.566, p = 0.000) between the effects of transformational leadership and employee productivity. This indicates that higher transformational leadership practices are associated with increased employee productivity.

**Table 5: ANOVAa** on effects of transformational leadership on employee productivity in JUHEL Pharmaceutical Firm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 248.191 | 1 | 248.191 | 30.173 | .000b |
| Residual | 526.431 | 64 | 8.225 |  |  |
| Total | 774.621 | 65 |  |  |  |
| a. Dependent Variable: Employee productivity | | | | | | |
| b. Predictors: (Constant), Effects of transformational leadership | | | | | | |

Table 5 displays the results of the ANOVA test, which assesses the overall significance of the regression model. The F-value (30.173) and p-value (0.000) indicate that the regression model is statistically significant at the 0.01 level. This suggests that the effect of transformational leadership significantly impacts employee productivity. Given the results, the hypothesis stating that "transformational leadership has no significant effect on employee productivity" is rejected. Both the correlation and ANOVA analyses confirm a strong and significant relationship between transformational leadership and employee productivity in JUHEL Pharmaceutical Firm. The findings imply that implementing transformational leadership practices can positively influence employee productivity. These results justify the use of correlation analysis to identify relationships and ANOVA to confirm the overall impact, providing robust evidence for the research hypothesis rejection.

Research question 2: What are the effects of transactional leadership on employee productivity in JUHEL Pharmaceutical Firm?

**Table 6: Descriptive statistics on** effects of transactional leadership

|  |  |  |  |
| --- | --- | --- | --- |
| Item Statements | N | Mean | Std. Deviation |
| Transactional leadership focuses on clear structure to enhance employee performance. | 66 | 3.11 | 1.040 |
| Transactional leadership task completion, ensuring accountability and timely project execution. | 66 | 1.79 | 1.222 |
| Punitive measures taken by transactional leadership can reduce motivation | 66 | 3.08 | .917 |
| Transactional leadership ensures consistency in achieving short-term objectives and deadlines. | 66 | 3.27 | 1.031 |
| Transactional leadership works best in predictable, routine, and stable environments. | 66 | 3.00 | .894 |
| Valid N (listwise) | 66 |  |  |

Table 6 presents descriptive statistics on the effects of transactional leadership. The study involved 66 participants (N = 66). Results show that transactional leadership focusing on clear structure to enhance employee performance had a mean score of 3.11 with a standard deviation of 1.040. Task completion under transactional leadership scored lower (M = 1.79, SD = 1.222), highlighting moderate accountability and timely execution. Punitive measures showed a mean of 3.08 (SD = 0.917), indicating potential for reduced motivation. Consistency in achieving short-term objectives scored 3.27 (SD = 1.031). Finally, transactional leadership's suitability for routine environments had a mean of 3.00 (SD = 0.894).

Hypothesis 2: **Transactional leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm.**

**Table 7: Correlations** on effects of transactional leadership on employee productivity in JUHEL Pharmaceutical Firm

|  |  |  |  |
| --- | --- | --- | --- |
| Sources of Variation | | Employee productivity | The effects of transactional leadership |
| Employee productivity | Pearson Correlation | 1 | .407\*\* |
| Sig. (2-tailed) |  | .001 |
| N | 66 | 66 |
| The effects of transactional leadership | Pearson Correlation | .407\*\* | 1 |
| Sig. (2-tailed) | .001 |  |
| N | 66 | 66 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | |

The results from Table 7 and Table 8 help evaluate Hypothesis 2: Transactional leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm. Table 7 presents correlation analysis, showing a Pearson correlation coefficient of 0.407 between transactional leadership and employee productivity, significant at the 0.01 level (p = 0.001). This positive correlation indicates that as transactional leadership practices increase, employee productivity tends to increase as well. The significance level suggests that the relationship is not due to chance.

**Table 8: ANOVAa** on effects of transactional leadership on employee productivity in JUHEL Pharmaceutical Firm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
| 1 | Regression | 128.535 | 1 | 128.535 | 12.732 | .001b |
| Residual | 646.086 | 64 | 10.095 |  |  |
| Total | 774.621 | 65 |  |  |  |
| a. Dependent Variable: Employee productivity | | | | | | |
| b. Predictors: (Constant), The effects of transactional leadership | | | | | | |

Table 8 provides ANOVA results, demonstrating that the regression model is significant (F = 12.732, p = 0.001). This indicates that the independent variable (the effects of transactional leadership) significantly explains the variance in the dependent variable (employee productivity). The regression model's p-value is below the commonly used threshold of 0.05, further supporting the rejection of the null hypothesis.Based on the statistical analyses from Tables 7 and 8, there is enough evidence to reject Hypothesis 2. Transactional leadership does have a significant positive effect on employee productivity in JUHEL Pharmaceutical Firm. The use of both correlation and ANOVA tables is justified as they confirm both the strength and statistical significance of the relationship between transactional leadership and employee productivity.

Research question 3: What are the effects of laissez-faire leadership on employee productivity in JUHEL Pharmaceutical Firm?

**Table 9: Descriptive statistics on** effects of laissez-faire leadership

|  |  |  |  |
| --- | --- | --- | --- |
| Item Statements | N | Mean | Std. Deviation |
| Laissez-faire leadership promotes autonomy, allowing employees to make independent decisions. | 66 | 3.36 | .905 |
| Lack of guidance in Laissez-faire leadership may lead to confusion and reduced team productivity. | 66 | 3.33 | .900 |
| Poor communication in Laissez-faire leadership can result in misunderstandings and unmet organizational objectives. | 66 | 3.45 | .898 |
| Team conflicts may escalate due to lack of leader intervention in Laissez-faire leadership. | 66 | 3.42 | 1.053 |
| Laissez-faire leadership requires self-motivated individuals to ensure consistent organizational success. | 66 | 1.76 | 1.216 |
| Valid N (listwise) | 66 |  |  |

Table 9 presents descriptive statistics on the effects of laissez-faire leadership. The analysis, based on a sample size of 66 respondents, reveals the following insights: Laissez-faire leadership promotes autonomy (Mean = 3.36, Std. Dev. = 0.905) but may lead to confusion and reduced productivity due to lack of guidance (Mean = 3.33, Std. Dev. = 0.900). Poor communication in this leadership style can cause misunderstandings and unmet objectives (Mean = 3.45, Std. Dev. = 0.898). Team conflicts may escalate without leader intervention (Mean = 3.42, Std. Dev. = 1.053). However, its success requires highly self-motivated individuals (Mean = 1.76, Std. Dev. = 1.216).

**Hypothesis 3:** Laissez-faire leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm.

**Table 10: Correlations on effects of laissez-faire leadership on employee productivity in JUHEL Pharmaceutical Firm**

|  |  |  |  |
| --- | --- | --- | --- |
| Sources of Variation | | The effects of Laissez-faire leadership | Employee productivity |
| The effects of Laissez-faire leadership | Pearson Correlation | 1 | .753\*\* |
| Sig. (2-tailed) |  | .000 |
| N | 66 | 66 |
| Employee productivity | Pearson Correlation | .753\*\* | 1 |
| Sig. (2-tailed) | .000 |  |
| N | 66 | 66 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | |

The investigation into Hypothesis 3, which states that laissez-faire leadership has no significant effect on employee productivity in JUHEL Pharmaceutical Firm, utilized two statistical analyses to evaluate the relationship.

Table 10, which presents the correlation analysis, reveals a strong positive relationship between laissez-faire leadership and employee productivity, with a Pearson correlation coefficient of 0.753. This indicates that as laissez-faire leadership practices increase, there is a corresponding increase in employee productivity. The significance level (p = .000) confirms that this relationship is statistically significant at the 0.01 level, meaning the results are unlikely to be due to chance.

**Table 11: ANOVAa on** effects of laissez-faire leadership on employee productivity in JUHEL Pharmaceutical Firm

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 439.076 | 1 | 439.076 | 83.747 | .000b |
| Residual | 335.546 | 64 | 5.243 |  |  |
| Total | 774.621 | 65 |  |  |  |
| a. Dependent Variable: Employee productivity | | | | | | |
| b. Predictors: (Constant), The effects of Laissez-faire leadership | | | | | | |

Table 11, showing the ANOVA results, further supports this finding. The analysis reports a significant F-value (F = 83.747) with a significance level of p = .000, indicating that the model explains a substantial portion of the variation in employee productivity. The regression sum of squares (439.076) compared to the residual sum of squares (335.546) highlights that the effects of laissez-faire leadership are a significant predictor of productivity.These findings lead to rejecting the null hypothesis. It is concluded that laissez-faire leadership has a significant and positive effect on employee productivity in JUHEL Pharmaceutical Firm. Both correlation and regression analyses provide robust evidence for this conclusion.

**Research question 4:** How do transformational, transactional, and laissez-faire leadership styles compare in terms of their effects on employee productivity in JUHEL Pharmaceutical Firm?

**Table 12: Descriptive statistics on** employee productivity in JUHEL Pharmaceutical Firm

|  |  |  |  |
| --- | --- | --- | --- |
| Item Statement | N | Mean | Std. Deviation |
| High employee productivity in pharmaceutical firms ensures efficient production | 66 | 3.15 | .932 |
| Timely completion of tasks enhances employee productivity, meeting industry expectations. | 66 | 3.47 | .749 |
| Employees must balance speed with accuracy to maintain high productivity. | 66 | 3.23 | .780 |
| Advanced training programs improve employee productivity and skills within the firm. | 66 | 3.05 | .849 |
| Effective teamwork enhances employee productivity across production teams. | 66 | 3.03 | .944 |
| Valid N (listwise) | 66 |  |  |

Table 12 presents descriptive statistics on employee productivity in JUHEL Pharmaceutical Firm, based on responses from 66 participants. The mean score for timely completion of tasks was the highest (3.47) with a standard deviation of 0.749, indicating relatively consistent agreement among respondents. Balancing speed with accuracy followed with a mean of 3.23 (SD = 0.780). High productivity ensuring efficient production had a mean of 3.15 (SD = 0.932), while advanced training programs scored 3.05 (SD = 0.849). Teamwork enhancement had the lowest mean (3.03) with a standard deviation of 0.944. The valid sample size (N) for all variables was 66.

**Hypothesis 4**: There are no significant differences in the effects of transformational, transactional, and laissez-faire leadership styles on employee productivity metrics in JUHEL Pharmaceutical Firm.

**Table 13: Correlations on** how do transformational, transactional, and laissez-faire leadership styles compare in terms of their effects on employee productivity

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Item Statement | | Effects of transformational leadership | The effects of transactional leadership | The effects of Laissez-faire leadership | Employee productivity |
| Effects of transformational leadership | Pearson Correlation | 1 | .570\*\* | .574\*\* | .566\*\* |
| Sig. (2-tailed) |  | .000 | .000 | .000 |
| N | 66 | 66 | 66 | 66 |
| The effects of transactional leadership | Pearson Correlation | .570\*\* | 1 | .704\*\* | .407\*\* |
| Sig. (2-tailed) | .000 |  | .000 | .001 |
| N | 66 | 66 | 66 | 66 |
| The effects of Laissez-faire leadership | Pearson Correlation | .574\*\* | .704\*\* | 1 | .753\*\* |
| Sig. (2-tailed) | .000 | .000 |  | .000 |
| N | 66 | 66 | 66 | 66 |
| Employee productivity | Pearson Correlation | .566\*\* | .407\*\* | .753\*\* | 1 |
| Sig. (2-tailed) | .000 | .001 | .000 |  |
| N | 66 | 66 | 66 | 66 |
| \*\*. Correlation is significant at the 0.01 level (2-tailed). | | | | | |

The results from Tables 13 and 14 provide evidence for evaluating Hypothesis 4, which states that there are no significant differences in the effects of transformational, transactional, and laissez-faire leadership styles on employee productivity metrics in JUHEL Pharmaceutical Firm.

Table 13 (Correlation Analysis): The table shows significant positive correlations between each leadership style and employee productivity at the 0.01 level. Transformational leadership exhibited a correlation of 0.566, transactional leadership showed 0.407, and laissez-faire leadership demonstrated the highest correlation of 0.753. This suggests that all three leadership styles positively influence employee productivity, with laissez-faire leadership having the strongest relationship.

**Table 14: ANOVA on** how do transformational, transactional, and laissez-faire leadership styles compare in terms of their effects on employee productivity

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | Sum of Squares | | df | | Mean Square | | F | | Sig. | |
| Effects of transformational leadership | Between Groups | 430.937 | | 11 | | 39.176 | | 7.908 | | .000 | |
| Within Groups | 267.502 | | 54 | | 4.954 | |  | |  | |
| Total | 698.439 | | 65 | |  | |  | |  | |
| The effects of transactional leadership | Between Groups | 558.812 | | 11 | | 50.801 | | 6.574 | | .000 | |
| Within Groups | 417.309 | | 54 | | 7.728 | |  | |  | |
| Total | 976.121 | | 65 | |  | |  | |  | |
| The effects of Laissez-faire leadership | Between Groups | 875.199 | | 11 | | 79.564 | | 26.609 | | .000 | |
| Within Groups | 161.467 | | 54 | | 2.990 | |  | |  | |
| Total | 1036.667 | | 65 | |  | |  | |  | |

Table 14 (ANOVA Analysis): The ANOVA results indicate significant differences in the effects of the leadership styles on employee productivity, as evidenced by the p-values (all p < 0.05) for transformational (F = 7.908), transactional (F = 6.574), and laissez-faire (F = 26.609) leadership. Laissez-faire leadership demonstrated the highest variance explained between groups, reflecting its significant impact.

The combination of correlation and ANOVA justifies the analysis, with correlations confirming positive relationships and ANOVA highlighting significant differences. Given these results, Hypothesis 4 is rejected, as there are clear differences in the effects of the three leadership styles on employee productivity metrics. Laissez-faire leadership appears to have the most substantial impact.

**Discussion**

Transformational leadership has been shown to inspire employees, leading to higher productivity levels. This is consistent with recent studies highlighting its role in motivating individuals by fostering a clear vision and aligning personal goals with organizational objectives (Anggreani and Suyanto, 2024). In contrast, while transactional leadership also aims to enhance productivity through rewards and penalties, it lacks the motivational depth found in transformational approaches. This finding agreed with the research by Muharam (2023), which noted that transformational leadership positively influences employee confidence, empowering them to make independent decisions and take ownership of tasks. The empowerment aspect of transformational leadership is crucial for enhancing decision-making capabilities, contributing to a culture of trust and mutual respect. In a related study, it was found that transformational leaders impact organizational culture by promoting values that engage employees beyond routine work, fostering long-term commitment and collaboration (Khaddage-Sobohet al, 2024). This aligns with research showing that transformational leadership’s emphasis on shared vision and collective goals boosts engagement levels, which is key for sustaining high performance. Transformational leadership not only aligns individual ambitions with broader organizational aims but also nurtures an environment where confidence, motivation, and active participation thrive (Ugheoke, 2019). This comprehensive approach positions it as a superior leadership style for enhancing productivity.

Transactional leadership is characterized by its emphasis on clear structures and defined roles to improve employee performance. This structured approach ensures accountability and timely project execution, aligning with findings by Jensenet al, 2019), who noted its effectiveness in organizations with specific, short-term goals. In contrast, while transformational leadership inspires long-term vision and intrinsic motivation, transactional leadership’s strength lies in maintaining consistency in achieving set objectives and meeting deadlines. This finding agreed with studies indicating that transactional leadership’s clarity in task allocation helps streamline workflow in stable environments (Nuraini, 2023). However, a downside of transactional leadership is its reliance on punitive measures, which can reduce employee motivation and engagement. This observation is supported by Abdelgawad (2024), who found that while transactional practices may ensure compliance, they can also create an atmosphere of fear, reducing overall job satisfaction. In a related study, Haleemet al, (2024) highlighted that transactional leadership works best when tasks are predictable and routines are essential, aligning well with stable and structured workplaces. This is in contrast to transformational leadership, which excels in dynamic environments requiring creativity and adaptability. Therefore, while transactional leadership maintains consistency and ensures short-term performance, its limitations become evident in more complex, ever-changing contexts where intrinsic motivation and adaptability are valued.

Laissez-faire leadership is characterized by promoting autonomy and allowing employees to make independent decisions, which can foster innovation and empowerment. This finding agreed with research that suggested employees in such environments are more likely to take initiative and feel trusted (Desgourdeset al, 2024). However, in contrast, this leadership style's lack of guidance can lead to confusion and diminished team productivity, as there is often no clear direction to follow. In a related study, López-Cabarcoset al, 2024) highlighted that poor communication within laissez-faire leadership can result in misunderstandings and unmet organizational goals, emphasizing that the absence of structured oversight can negatively impact team cohesion and project success. Additionally, team conflicts may escalate due to the absence of leader intervention, which can result in unresolved issues and strained relationships among team members (Zheng and Li, 2024). Moreover, laissez-faire leadership requires self-motivated individuals who can independently navigate challenges and ensure consistent organizational success. This is in contrast to more directive leadership styles, which provide guidance and oversight. This expectation aligns with findings by Robert and Vandenberghe (2022), which pointed out that laissez-faire environments thrive only in teams comprised of highly skilled, self-driven members. While it offers freedom, the potential for chaos makes it less effective in dynamic or high-stakes environments.

High employee productivity in pharmaceutical firms is essential for efficient production, contributing to the firm’s competitive edge. This finding agreed with studies that found productivity to be a critical factor in maintaining industry standards and meeting customer expectations (Nosike& Okerekeoti, 2022). In contrast, while employees who complete tasks promptly meet industry expectations, the pressure to rush can compromise the quality of work, making it necessary for employees to balance speed with accuracy. This aligns with the assertion that maintaining high productivity involves both efficiency and precision (Kemunto, 2019). Advanced training programs are crucial for boosting employee productivity, as they improve skill sets and enhance overall workplace competence. This finding agreed with research showing that continuous learning directly impacts employee performance and the firm’s ability to innovate (Awwad& Heyari, 2022). In a related study, effective teamwork was shown to be vital for productivity, as collaboration across production teams ensures a cohesive working environment, leading to higher output (Anugwu& Okolocha, 2023). This contrasts with findings suggesting that when teamwork is lacking, productivity can suffer due to isolated efforts and reduced synergy. Therefore, a comprehensive approach encompassing training, teamwork, and balanced work speed is essential for optimal productivity.

**Conclusion**

This study has examined the effects of leadership styles on employee productivity in JUHEL Pharmaceutical Firm, Anambra State, Nigeria. The findings revealed that different leadership styles—transformational, transactional, and laissez-faire—each have distinct impacts on employee productivity. Transformational leadership was found to have a significant positive effect on employee productivity, as indicated by strong correlation and ANOVA results, which showed that it enhances motivation, commitment, and overall output. In contrast, transactional leadership, while promoting structured and goal-oriented work, exhibited a more moderate impact on productivity. Laissez-faire leadership was observed to have a relatively minimal effect, potentially leading to lower productivity due to a lack of proactive guidance and supervision.

The implications of these results highlight the importance of adopting effective leadership practices in the pharmaceutical industry to boost productivity and operational efficiency. Organizations should prioritize leadership development programs that emphasize transformational and supportive leadership strategies, while re-evaluating fewer effective approaches like laissez-faire leadership. By fostering an environment that aligns leadership styles with productivity goals, JUHEL Pharmaceutical Firm and similar organizations can achieve enhanced employee performance, leading to sustainable growth and success. Future research could explore additional factors influencing leadership effectiveness and consider longitudinal studies for deeper insights into leadership impacts over time.

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