

Piece Rate Pay and Employees Performance at Satcom Block Industry, Nasarawa-Nigeria

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Abstract— The human capital is the most important and most underutilize asset in an organization. The wage reward system could affect the employee's performance and also may reflect on the corporate and financial standing of the organization. Piece rate pay and employee's performance could be the solution for optimum employee's performance and reduction of inefficiencies and hence this study becomes very apt. The study adopts a survey research design. A census study was considered because the target population was small to sample hence the entire population of Satcom Block Industry employees totaling 25 were used for this study. The major technique used for data analysis is ANOVA and multiple regression. The result shows a positive effect of Equilibrium Piece Rate Pay and High Piece Rate Pay on Employee's Performance while the result shows a negative effect of Low Piece Rate Pay and Partial Piece Rate Pay on Employee's Performance. The study recommended that:- Piece rate pay-setting should be subjected to collective bargaining, piece-rate systems should be simple and transparent, rewards employees according to the difficulty and quality of their work, ensuring that workers can earn substantially more than the minimum wage. Employers should organize special training for workers to inspire confidence among workers and also improve the quality of their output.

Index Terms— Piece Rate Pay, Employee's Performance.

I. INTRODUCTION

Over the years, employers of labor have devised so many ways to maximize labor and reduce inefficiencies, yet so many companies go bankrupt due to nonperformance. It would be logical to look at Piece rate pay and employee performance perhaps one may be able to unravel the mystery bedeviling organizational growth and sustainability. Piece rate is defined as work paid according to the number of units produced (e.g. the number of T-shirts or bricks produced) instead of being paid based on time spent on the job (Borino, 2018). Piece rate pay is more appropriate in industries that are into toiletry and sanitary, garment, construction, and block industry. The piece-rate payment should be fixed in such a way that employees will be motivated to perform optimally. How remuneration is calculated for each piece produced or task completed needs to be fair to both parties: If the salary is set too low, discouragement will set in and the workers concerned will work long hours or very quickly and may ultimately feel burnt out by the system (Borino, 2018). According to Billikopf (2014), If the rate is not fair to the employer, the enterprise might fail.

Employee performance is the degree to which employees accomplish the work requirement. Employees' performance reflects the efficiency of the organization. Employees perform critical tasks for the survival of the organization. Performance refers to the aggregate effort comprises of abilities and task employees' expended on their jobs (Gberevbie, Osibanjo, Adeniji & Oludayo 2014). Performance is measured by productivity, quality of work and output (Bondream, 2007).

Satcom Block Industry is situated in Nasarawa, Nigeria. They produce blocks, concrete poles, rings for deep wells and interlocking bricks for floors and walls. The company has a strong brand and it is making a concerted effort to maintained it and also leverage it by recruiting the right personnel and retaining them. They have also upgraded their machines and equipment to enhance the quality of their product to remain relevant and a major player in the industry.

In recent years, there is a growing concern among employers of labor over how employees are prone to using work hours to carry out their activities (unofficial) which has no positive bearing on the company's business. Little wonder Japan and China have made a frantic effort to replace human labor with robots. I am of the view here that the human intellect and flexibility cannot be replaced with that of a robot. It may take only a day to make a significant adjustment in production with human labor but with robots, it may take months to reconfigure them to a new production pattern. Also, most management staff are of the view that hourly (time) rate pay encourages employee's laziness and non-performance.

Previous studies focused on piece-rate pay and working conditions in the export garment sector in countries such as Vietnam, Indonesia, Jordan, Haiti and Nicaragua (Borino, 2018) and also the consequence of a piece-rate on quantity and quality: evidence from a field experience conducted in China (Heywood, Siebert & Wei, 2013) However, this current study focuses on Piece Rate Pay and Employees Performance at Satcom Block Industry Nasarawa, Nigeria.

The objective of this study is to examine the effect of piece-rate pay on employee's performance at the Satcom Block Industry. Therefore, this paper sought to test the following fundamental hypothesis stated in the null form:

H01 Low piece-rate pay has no positive effect on employee's performance of the Satcom Block Industry, Nasarawa- Nigeria.

H02 Equilibrium piece-rate pay has no positive effect on employee's performance of the Satcom Block Industry,

Nasarawa- Nigeria.

H03 high piece-rate pay has no positive effect on employee’s performance of the Satcom Block Industry, Nasarawa- Nigeria.

H04 Partial piece-rate pay has no positive effect on employee’s performance of the Satcom Block Industry, Nasarawa- Nigeria.

II. LITERATURE REVIEW

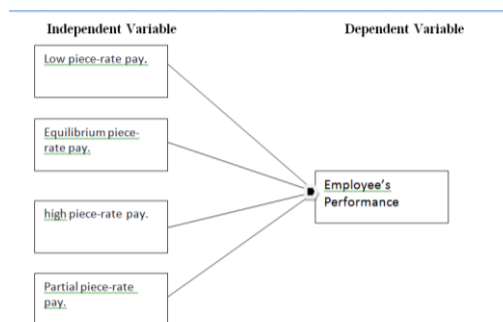
A. Empirical Literature

Borino (2018) defined piece-rate pay as work paid according to the number of units produced (e.g. the number of T-shirts or bricks produced) instead of being paid based on time spent on the job. According to Roddy (2016), this kind of payment system is independent of the bounds of time and is completely based on the result produced. Zine (2020) captured piece-rate pay as the term referring to a compensation arrangement whereby the employee is paid for each action performed or unit of work produced. The concept of piecework has been around since the time of the Industrial Revolution, and it was used in garment factories and other manufacturing jobs to pay workers based on production (Laureen, 2019). A piecework system may encourage workers to be more productive and time-efficient. Paying per piece can motivate employees to produce more and work harder (Maria, 2018).

The degree of an achievement to which an employee fulfills the organization’s mission at the workplace is called performance (Cascio,2006). Millcorvich and Bondream (2007) considered employees performance as the degree to which employees accomplish work requirements. To them, employees performance in effect reflects the efficiency of the organization. Performance refers to the aggregate effort comprises of abilities and task employees’ expended on their jobs (Gberevbie, Osibanjo, Adeniji & Oludayo 2014). Employees perform critical tasks for the survival of the organization (Qaisar, Abdul & Aamer 2011). Performance is measured by productivity, quality of work and output (Bondream, 2007). According to Smith (2009), identifying the strength of an employee and maximizing it can go a long way to increase his output. Effective employee training/coaching is necessary for improved performance (Organ & Ryan, 2008). Performance is perceived differently by various researchers however; most of the scholars relate performance with measurement of transactional, efficiency and effectiveness toward the organizational goal (Stannack, 2006; Barney, 1991). Piece rates provide direct performance incentives, but present tradeoffs if the employer values quality as well as quantity of output (Raymond, Guiteras.& Kelsey 2017)

When employers set the amounts they pay workers for each operation in the production process (the “piece rates”) too low, workers are unable to earn a decent wage or the legal daily minimum wage on a regular workday, as the law requires (Borino, 2018). Raymond, Guiteras, and Kelsey

(2017) in their study established that a higher piece rate gives a worker a clear incentive to work faster, however, sheer quantity is not the only desired outcome: incorrect sorting of beans lowers the value of the final product. Raymond, Guiteras, and Kelsey (2017) also discovered that while higher piece rates encourage more effort, they also – surprisingly – attract workers that are slightly less productive, on average, though the negative relationship is economically small and not very robust. Findings from the studies of Raymond et al, (2017) show that high piece rates are less attractive from the perspective of the employer. Billikopf (2014) established in his study that how remuneration is calculated for each piece produced or task completed needs to be fair to both parties: if the salary is set too low, discouragement will set in and the workers concerned will work long hours or very quickly and may ultimately feel burnt out by the system. If the rate is not fair to the employer, the enterprise might fail. Borino (2018) observed that Involving employees before implementing a piece-rate pay system will increase transparency and confidence, so a crucial role should be played by trade unions. This would lead to an equilibrium piece-rate pay where both employers and employee’s reach to a compromise point or fair deal. In partial piece-rate pay, management pays a base salary irrespective of production output and, if a certain output threshold is reached (ILO, Minimum Wage Policy Guide). There is a higher variability of wages of partial pieceworkers, notably when the base salary is very low and the incentive pay, based on the output, is obtained only if a certain (high) output threshold is reached. Partial piece-rate harms workers’ self-reported physical and emotional health as well as on workers’ concern for accidents or injuries in the factory (Borino, 2018). The extent to which piece-rate can be of benefit for both employers and workers depends on how it is designed and regularly maintained afterward. Fair and effective, piece-rate systems should be simple and transparent, rewards employees according to the difficulty and quality of their work, ensuring that workers can earn substantially more than the minimum wage (ILO, Minimum Wage Policy Guide). According to Borino (2018), it is crucial for the government to regulate piece rates and piece-rate work and for enterprises to implement sound piece-rate systems. Lazear (2000) In his study established that a large auto glass company in the USA, which changed the compensation method for its workforce, moving them from hourly wages to piece-rate pay. Results show that the firm benefitted from a 44-percent increase in productivity,



Performance is the art to complete the task within the

defined boundaries. Millcorvich & Bondream (2007) considered employee performance as the degree to which employees accomplish work requirements. To them, employee performance in effect reflects the efficiency of the organization. There are lots of factors that affect the performance of employees (Saeed, 2013). Good practice requires employers to keep pace with inflation by rewarding employees with salaries that are market-related to avoid strikes and poor performance by workers (Armstrong, 2003).

Low piece-rate pay may affect performance. If the salary is set too low, discouragement will set in and the workers concerned will work long hours or very quickly and may ultimately feel burnt out by the system (Borino, 2018). When employers set the amounts they pay workers for each operation in the production process (the "piece rates") too low, workers are unable to earn a decent wage or the legal daily minimum wage on a regular workday, as the law requires (Borino, 2018). Deb (2008) reasons that employees do not trust the management because management makes reward decisions behind closed doors without any explanations of how or why they have been made.

Equilibrium piece-rate tries to strike a balance between employees and employers of labor interest. Fair and effective, piece-rate systems should be simple and transparent, rewards employees according to the difficulty and quality of their work, ensuring that workers can earn substantially more than the minimum wage (ILO, Minimum Wage Policy Guide). Borino (2018) observed that Involving employees before implementing a piece-rate pay system will increase transparency and confidence, therefore a crucial role should be played by trade unions. This would lead to an equilibrium piece-rate pay where both employers and employee's reach to a compromise point or fair deal. Guffey and Loewy (2012) warn employers to communicate and educate employees on the salaries that they receive and how the decision was reached. According to (Onyanha, Chales & Willy, 2014), compensation packages should be well thought out before implementation.

High piece-rate pay enhances the worker's earnings. Raymond et al, (2017) in their study established that a higher piece rate gives a worker a clear incentive to work faster, however, sheer quantity is not the only desired outcome: incorrect sorting of beans lowers the value of the final product. Findings from the studies of Raymond et al, (2017) show that high piece rates are less attractive from the perspective of the employer. Raymond et al, (2017) also discovered that while higher piece rates encourage more effort, they also – surprisingly – attract workers that are slightly less productive, on average, though the negative relationship is economically small and not very robust.

Partial piece-rate pay seems ideal but in practice, it favors employers mostly leaving employees with very low pay. There is a higher variability of wages of partial pieceworkers, notably when the base salary is very low and the incentive

pay, based on the output, is obtained only if a certain (high) output threshold is reached. Partial piece-rate harms workers' self-reported physical and emotional health as well as on workers' concern for accidents or injuries in the factory (Borino, 2018). In partial piece-rate pay, management pays a base salary irrespective of production output and, if a certain output threshold is reached (ILO, Minimum Wage Policy Guide).

III. METHODOLOGY

The design of this study is a Survey research design because the study makes use of primary data. The questionnaire was used to sample the opinion of the entire population. For this research the entire staff s of the Satcom block industry. totaling 25 forms the population of this study. A census study was considered because the target population was small to sample hence the entire population was considered for the research study.

The Statistical Software Package for Social Sciences (SPSS, version 21) software was used. Content analysis was used to analyze collected qualitative data. It involves observation and detailed description of objects, items or things that comprise the study (Mugenda & Mugenda, 2003). Also, inferential statistics and regression were done. Regression analysis was carried out to establish the relationship between piece-rate pay and employee's performance.

The multiple regression model is used when the effect of independent variables on the dependent variable is to be studied. Borino (2018) utilized a multiple regression analysis in a similar work in Switzerland. Statistically, it is represented by the following regression model:

Specifications

$$Y = 0 + 1 X_1 + 2 X_2 + 3 X_3 + 4 X_4 + \varepsilon$$

Where Y is the dependent variable represented by the employee's performance.

X₁, X₂, X₃, X₄ Represent the independent variable.

ε Denotes error term.

β_0 is the intercept of the equation.

β_1 , β_2 , β_3 and β_4 are the coefficients of the independent variables

X₁= Low Piece Rate Pay.

X₂= Equilibrium Piece Rate Pay

X₃= High Piece Rate pay.

X₄ = Partial Piece Rate Pay

IV. RESULTS AND DISCUSSION

Table 1
Model Summary

| Model | R | R 2 Model | Adjusted R Square | Std. Error of the Estimate | R Square Change | F Change | df1 | df2 | Sig. F Change |
|-------|---------|-----------|-------------------|----------------------------|-----------------|----------|-------|------|---------------|
| 1 | .822(a) | .724 | .833 | 0.721 | 0.804 | 311.532 | 2.470 | 1.33 | .01(a) |

a. Predictors: (Constant) Low Piece Rate Pay, Equilibrium Piece Rate Pay, High Piece Rate and Partial Piece Rate Pay b.
Dependent: Employees Performance
Source Field: Field Research (2020).

Table 2
ANOVA (b)

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|-------|------------|----------------|----|-------------|--------|---------|
| 1 | Regression | 3.4332 | 1 | 3.4332 | 1.5264 | 0.01(a) |
| | Residual | 4.3261 | 23 | .133 | | |
| | Total | 7.7593 | 24 | | | |

a. Predictors: (Constant) Low Piece Rate Pay, Equilibrium Piece Rate Pay, High Piece Rate and Partial Piece Rate Pay b.
Dependent: Employees Performance
Source Field: Field Research (2020).

Table 3
Regression Coefficients

| Model | | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. |
|-------|----------------------------|-----------------------------|------------|---------------------------|-------|------|
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.433 | .000 | | 2.231 | .002 |
| | Low Piece Rate Pay | .431 | .410 | .321 | 3.452 | .062 |
| | Equilibrium Piece Rate Pay | .842 | .815 | .377 | 2.162 | .001 |
| | High Piece Rate Pay | .622 | .311 | .492 | 2.926 | .002 |
| | Partial Piece Rate Pay | .356 | .431 | .326 | 2.111 | .070 |

a. Predictors: (Constant) Low Piece Rate Pay, Equilibrium Piece Rate Pay, High Piece Rate and Partial Piece Rate Pay b.
Dependent: Employees Performance
Source Field: Field Research (2020).

The regression equation is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + e$$

Where: Y=Employees Performance, X1= Low Piece Rate Pay, X2= Equilibrium Piece Rate Pay, X3= High Piece Rate Pay, X4= Partial Piece Rate Pay and e = Error Term. β_0 is the intercept of the equation while β_1 , β_2 , β_3 , and β_4 are the coefficients of the independent variables.

$$Y = 1.526 + .431X_1 + .842X_2 + .622X_3 + .356X_4$$

Table 1 shows the value of adjusted r-square 83% which is relatively high which means a good representation of the data and hence a good fit. However, the remaining 17% is due to other predictive variables not included in the model and other errors in the measurement of Employees Performance.

Table 3 shows a negative coefficient of .431 and a p-value of .062 which is higher than the significant level 0.05, therefore the null hypothesis that says low Piece Rate

Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa- Nigeria was accepted. Table 3 shows a positive coefficient of .842 and a p-value of .001 which is lower than the significant level 0.05, therefore the null hypothesis that says Equilibrium Piece Rate Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa - Nigeria was rejected. Table 3 shows a positive coefficient of .622 and a p-value of .002 which is lower than the significant level 0.05, therefore the null hypothesis that says High Piece Rate Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa - Nigeria was rejected. Table 3 shows a negative coefficient of .356 and a p-value of .070 which is higher than the significant level 0.05, therefore the null hypothesis that says Partial Piece Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa- Nigeria was accepted.

Table 4

| <i>Hypothesis</i> | <i>Significant (P<0.05)</i> | <i>Decision</i> |
|--|--------------------------------|-----------------|
| H01: low Piece Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa- Nigeria | .062 | Accepted |
| H02: Equilibrium Piece Rate Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa – Nigeria | .001 | Rejected |
| H03: High Piece Rate Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa – Nigeria | .002 | Rejected |
| H04: Partial Piece Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa- Nigeria | .070 | Accepted |

A. DISCUSSION OF FINDINGS.

The hypotheses tested in the foregoing sections show results which are as follows;

The null hypothesis which states that low Piece Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa- Nigeria was accepted. This result is consistent with the findings of Borino (2018) that If the salary is set too low, discouragement will set in and the workers concerned will work long hours or very quickly and may ultimately feel burnt out by the system and would affect employees performance

The null hypothesis which states that Equilibrium Piece Rate Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa – Nigeria was rejected. This result gives credence to Guffey and Loewy (2012) who warn employers to communicate and educate employees on the salaries that they receive and how the decision was reached. It also agrees with Onyancha et al, (2014) that Compensation packages should be well thought out before implementation. This further confirms (ILO, Minimum Wage Policy Guide) that piece-rate systems should be simple and transparent, rewards employees according to the difficulty and quality of their work, ensuring that workers can earn substantially more than the minimum wage.

The null hypothesis which states that High Piece Rate Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa – Nigeria was rejected. The result gives credence to the findings of Raymond et al (2017) who

in their study established that a higher piece rate gives a worker a clear incentive to work faster.

The null hypothesis which states that Partial Piece Pay has no positive effect on employee performance at Satcom Block Industry, Nasarawa- Nigeria was accepted. The result agrees with the findings of Borino (2018) which indicates that the Partial piece rate has impacted negatively on workers’ self-reported physical and emotional health as well as on workers’ concern for accidents or injuries in the factory. The result is also supported by the report of (ILO, Minimum Wage Policy Guide) that there is a higher variability of wages of partial pieceworkers, notably when the base salary is very low and the incentive pay, based on the output, is obtained only if a certain (high) output threshold is reached.

V. CONCLUSION AND RECOMMENDATIONS

The study shows that male respondents are 96% while the female is 4%. This is an indication that the block industry is male-dominated. The study also reveals that 60% of the respondents are within the age group of 18-33. Also, 40% are within the age group of 34 – 49 and 0% represent respondents within 50 years and above. This implies that the block industry is dominated by the young and able body since the industry is energy demanding. The study also reveals that 68% had O level while 32% had a Primary school certificate. This is an indication that most of the workers either drop out of school or are awaiting admission to higher institutions of learning. This also implies that job turnover in this sector is extremely high.

The results of the various test carried out in this study, shows that low piece-rate pay and partial piece-rate pay impact negatively on employees performance at Satcom block industry (null hypotheses accepted) while equilibrium piece-rate pay and high piece-rate pay had a positive effect on employees performance at Satcom block industry (null hypotheses rejected).

Given the findings and conclusions from this study, the following recommendations are made:

Piece rate pay should not be set low. Employee's performance will be negatively affected if their monthly earnings are below the minimum wage; therefore, management should set piece-rate pay that will encourage performance Piece rate pay-setting should be subjected to collective bargaining. Employers should carry their workers along whenever they are fixing the piece rates. The final rate fixed should favor both the workers and employers since the company needs more funds to survive and the employee's as well need a leaving wage to survive and function effectively.

Fair and effective, piece-rate systems should be simple and transparent, rewards employees according to the difficulty and quality of their work, ensuring that workers can earn substantially more than the minimum wage.

Employers should organize special training for workers. This would inspire confidence among workers and also improve the quality of their output. No matter how highly motivated a worker is if he is not well trained his performance will be negatively affected.

REFERENCES

[1] Armstrong, M. (2003). A handbook of human resource management practice, 9th Ed. London, UK: Cambrian Printers Ltd.

[2] Barney, J.B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, 1 (17): pp. 99-120

[3] Billikopf, G.E., (2014). Labor management in agriculture: Cultivating personnel productivity. The University of California, Division of Agriculture and Natural Resources, Agricultural Issues Center.

[4] Cascio, W. F. (2006). *Managing Human Resources: Productivity, Quality of Life, Profits*. McGraw-Hill Irwin

[5] Deb, T. (2008). *Performance Appraisal and Management*. New Delhi: Excel Books.

[6] Guffey, E., & Loewy, D. (2012). *Essentials of Business Communication*, 9th Ed. USA: South-Western Cengage Learning.

[7] ILO (2014), Minimum wage systems, International Labour Conference Session, 103rd Session, 2014, InternationalLabourOrganizationavailableat: http://www.ilo.org/wcmsp5/groups/public/d_norm/---relconf/documents/meetingdocument/wcms_235287.pdf

[8] Laureen, M. (2019) What Is a Per-Piece Pay Rate or Piecework. Available at: <https://www.thebalancecareers.com/what-is-per-piece-work-3542479>

[9] Lazear, E. P. (2000). Performance pay and productivity. *American Economic Review*, 90(5), pp.1346-1361.

[10] Maria,T.(2018).WhatisPiecework.Availableat: <https://www.patriotsoftware.com/blog/payroll/piecework-pay/>

[11] Onyancha, N. Chales, M. Willy, M (2014). Effect of Remuneration on Employees Performance in the Ministry of Internal Security: A Case of Kisii County 2014, Vol. 4, No. 1

[12] Organ, D. W., & Ryan, K. (2008). A meta-analytic review of attitudinal and Dispositional predictors of organizational citizenship behaviors. *Personnel Psychology*, 48 (4), pp.775–802.72 Ensher, Grant-Vallone, Donaldson

[13] Qaisar, A; Abdul, H; Aamer, W. (2011). Gender Discrimination & Its Effect on Employee Performance/Productivity. *International Journal of Humanities & Social Science*;Oct2011, Vol. 1 Issue 15, pp.170

[14] Raymond, P. Guiteras, Kelsey J. (2017). Productivity in piece-rate labor markets: Evidence from rural Malawi *Journal of Development Economics* 131 pp.42 – 61

[15] Roddy (2016). Piece Rate Pay: Advantages and disadvantages. Available at: <https://content.wisestep.com/advantages-disadvantages-piece-rate-pay>

[16] Saeed R., Mussawa S., Lodhi R.N., Iqbal A., Nayab H.H and Yaseen S. (2013). Factors Affecting the Performance of Employees at Work Place in the Banking Sector of PakistanMiddle-East *Journal of Scientific Research* 17 (9):pp.1200-1208,

[17] Sankaran K., (2015). Piece Rated Minimum Wages, ILO

[18] Stannack, P. (2006). Perspective on Employees Performance. *Management Research News*, 119(4/5), pp.38- 40

[19] Zine, M. (2020). Piece Rate Pay System. Available at: <https://www.money-zine.com/definitions/career-dictionary/piece-rate-of-pay/>