

EFFECT OF COLLECTIVE BARGAINING ON EMPLOYEE PRODUCTIVITY IN ELECTRICITY DISTRIBUTION COMPANIES OF NORTHWEST, NIGERIA.

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Abstract

This study sought to find out the effect of collective bargaining on employee productivity in electricity distribution companies of northwestern Nigeria. The target population of the study was 2856 staff in Kaduna Electricity Distribution Company through the four states covered by this company (Kaduna, Sokoto, Zamfara and Kebbi). A representative sample of 456 staff was obtained by using the Yamane formula which was complemented with a 30% increment to compensate for non-response. This study targeted staff with at least 3 years of working experience in Kaduna Electricity Distribution Company across the states based on simple random sampling technique. The study used a descriptive research design to measure the effect of bargaining coverage, bargaining level, and degree of coordination as proxies of collective bargaining on employee productivity. The study used structured questionnaire to collect data which was analyzed through Statistical Package for Social Sciences version 22. Inferential statistics were used to establish the relationships that existed among the variables. The correlation coefficient results found that collective bargaining had a positive significant effect on employee productivity. The study, therefore, found out that collective bargaining had a significant effect on employee productivity.

Key Words: bargaining coverage, bargaining level, collective bargaining, degree of coordination, and employee productivity.

1. Introduction

The relevance of employees to an organization is mainly captured through their contribution at work which translate to productivity. Productivity therefore constitute major factor with which an organization can be evaluated. Hence, employee productivity had sparked interest in the academic literature. It gains attention from the assumption that employee productivity is the bedrock for the development of an organization which subsequently is attributed to the main pointer for the reduction of cost and improvement in the quality of output in both developed and developing economy (Shivangi & Nirmala, 2022).

In recent time, developing countries have been experiencing lackadaisical and epileptic supplies of service and evidence reveals that employees are at the receiving end (Mollel-Ehphas, Maling & Razia, 2017). This have prompts organizations to design measures aiming at establishing an avenue to address the challenge of inadequate productivity in the service industries (Kosisochukwu, 2019). The attempts have call for a radical revolution to strengthen employee productivity.

However, despite the acknowledgement of collective bargaining as having possibility of curbing inadequacies in employee productivity with introduction of bargaining arrangements in the electricity sector, findings still reveals large proportion of employee in the electricity sector are still not satisfied with the working conditions and which translate to more attention into ways of mitigating employer- employee relationship at work for efficient employee productivity for which collective bargaining is imminent (Bello & Kinge, 2014). Evidence reveals that quite a notable number of organizations are battling with low productivity

(Morgan, 2021). This has create challenges on the part of the organization as low productivity leads to poor customer satisfaction in the electricity distribution company (Mulunda, Were & Muturi, 2018).

Various researchers such as Shahzadi, Javed, Pirzada, Nasreen and Khanam (2014), and Frese (2002) have highlighted that employee productivity is measured by quantity and quality of output; punctuality at work; helpful and accommodating nature: job effectiveness, helping work colleagues and being a reliable member of the organization; and the timeliness of service delivery and output production. Ferrira & Du Plessis (2009) indicated that productivity can be evaluated in terms of the time spent by an employee activity executing the job he or she was hired to do, in order to produce the desired outcomes expected from an employee's job description. Productivity is designated as a measure of the efficiency of a person, machine, factory, system etc., in converting inputs into useful outputs. Productivity is computed by dividing average output for a period by the total costs incurred or resources (capital, energy, material, personnel) consumed in that period. Productivity is a critical determinant of cost efficiency (Business Dictionary, 2016). As cited in Ravi Kumar, & Sai Taja Baza Wala, 2019) in the global level, employee productivity is measured in terms of commitment of employee and customer satisfaction, quality and quantity service and low labour turnover (Lai, 2011 as cited in Mollel-Ehphas, Milongs & Razia, 2017).

Employee productivity is the assessment of the efficiency of a worker or group of workers, in terms of the output of an employee in a specific period of time (Mollel-Ehphas, Muling & Razia, 2017). From the forgoing, Mollel-Ehphas, Muling & Razia (2017) posited that employee productivity isn't everything, but in the long run it is almost everything that an organization strive to uphold. However, workers are protected against exploitative acts by employers on wages, benefits, and working conditions as provided in the national labor relations act (Estlund, 2015) which marks the beginning of legal protections for workers under collective agreements (Estlund, 2015). Hence, collective bargaining if well embraced, can be used to resolve industrial conflicts, promote industrial harmony, increase productivity and as well the living standard of people (Bello & Kinge, 2014).

The term collective bargaining itself was coined by the British labor historian Beatrice Webb in 1891 (Hoffer). Collective bargaining is a social process that continually turns disagreements into agreements in an orderly fashion (Susan & Willy, 2018). Labour movement has a long colourful and turbulent history (Wayne, 1991). In United States, it began with the industrial revolution of the 19th century. Economically, the industrial revolution was a great boom to productive output and to capital accumulation by business owners, not so far, the average worker's wages were generally known and seen, the prevailing political philosophy of Laissez-faire (leave things along) resulted in little action by government to protect the lot of workers against this drop, it was inevitable that workers should organize collectively to improve their wages and working conditions.

Collective bargaining in the private sector in a common parlance is used to conclude collective agreement, settle disputes or reach a common understanding on issues (Francis, Tunde & Mariam, 2011). Therefore, Parties draw procedural agreements which determine what matters to negotiate at the central level through the National Joint Industrial Council or Joint Negotiation Council and those to be treated at the company level (Francis, Tunde & Mariam, 2011). Collective bargaining in the Nigerian power sector has taken various forms right from its public ownership to the privatization of the defunct power holding of Nigeria

PLC in 2012 resulting in the formation of 11 distribution companies in Nigeria. This development led to the formation of Kaduna Electric that oversees the distribution of electricity to four states in the Northwest, Nigeria (Kosisochukwu, 2019).

However, Collective bargaining is the establishment by negotiation and discussion of agreement on matters of mutual concern to employers and unions covering the employment relationship and terms and conditions of employment (Armstrong & Taylor, 2014). This is as a result that collective bargaining is central to any industrial relations system since it is a tool through which regulated flexibility is achieved (Godfrey et al., 2007). Collective bargaining institutions thus enable workers to express their voice which in turn may improve efficiency notably through job and organizational changes (Andrea, Francois & Isabelle, 2018). Collective bargaining can be measured with variables other than union density to yield performance (Laroche, 2020) and can also be used to drive high performance work systems and practices through coordinated effort of unionism (Nana, 2017). Sunday & Ajibola (2014), Okpalibekwe, Onyekwelu, & Dike (2015), Hyginus, Amadi, & Merit (2020) reports that although collective bargaining in the Nigerian setting both public and private sector has mixed effect on employee productivity but electricity distribution companies still face the challenges of employee commitment which hampers the output of the organization. This is evident from the work of Kosisochukwu (2019) which reveals that the issue of employee productivity in electricity distribution companies is a continuous phenomenon that can be resolved through collective bargaining.

Consequently, the present study investigated the effect of bargaining coverage, bargaining levels, and bargaining degree of coordination on employee productivity in the electricity distribution companies in North western Nigeria. One of the most challenging problems facing service industries today is instability of employee productivity and this has led to persistent increase in the number of industrial conflict across industries (Hyginus, Goodluck and Okoh, 2020). Employee productivity open opportunities for organization to attain competitive advantage and in return, aid in satisfactory service discharge and goodwill of the organization (Bryson and Wilkinson, 2002).

Moreover, Kaduna Electricity Distribution Company (KEDC) is facing significant employee issues arising from the failure of the organization to implement national minimum wage and other agreements covered in the condition of service as agreed in the collective agreement (Punch Newspaper, 2025). However, this has caused a complete shutdown of KEDC operation resulting in blackouts across Kaduna state and surrounding areas. This conflicting interest has evolved for long without a promising lasting solution which makes the phenomenon open for ways of mitigating employer-employee relationship at Kaduna Electricity Distribution Company.

Theoretically, Studies such as Zvobgo (2019), Brandl & Braakmann (2021), and Cahuc & Zylberberg (2004) have showed collective bargaining to be effective at motivating employee productivity which results to the development of the business organization. Additionally, Mulunda, Were, and Muturi, (2018) found significant relationship between collective bargaining and employee productivity. On the other hand, studies such as Brandl & Braakmann (2021) found insignificant relationship between collective bargaining and employee productivity. The studies argue that collective bargaining takes new dimension in some Mediterranean countries and in liberal countries such as in the United Kingdom. In a nutshell, inconsistencies in the findings of previous studies have thus call for more studies on

such relationships to confirm previous findings, since previous studies are yet to establish a unified scale of measurement as determinants of employee productivity given that bargaining does not follow a single model across all developing countries (Lamarche, 2015). However, in literature, not much attention was given to bargaining levels, bargaining degree of coordination, and bargaining coverage in the electricity distribution companies. This is essential as employee productivity can be enhanced through strong collective bargaining that is all encompassing (Sunday & Ajibola, 2014). Consequently, improving on collective bargaining was acknowledged by many researchers as a solution to the problem of unstable employee productivity thereby indicating the importance of agreement reached through co-ordinated bargaining that cut across various levels in the organization (Lamarche, 2015).

Hence, it is important to find out the extent to which collective bargaining influence employee productivity through bargaining levels, bargaining coverage and bargaining degree of coordination in the electricity distribution companies in North-western Nigeria. The following hypothesis were developed for the study in order to meet the aforementioned goal:

Ho1: Bargaining coverage has no significant effect on employee productivity of electricity distribution companies in Northwest, Nigeria.

Ho2: Bargaining levels has no significant effect on employee productivity of electricity distribution companies in northwest, Nigeria.

Ho3: Bargaining degree of coordination has no significant effect on employee productivity of electricity distribution companies in northwest, Nigeria.

2. Literature Review

2.1 Employee Productivity

Productivity is the rate at which work is done (Okafor, 2005). Most organizations are faced with issue of how to improve employee productivity. Employee productivity is an assessment of the efficiency of a worker or group of workers. (Hanaysha, 2015). Gummesson's study, conducted in 1998 (as cited in Hanaysha, 2015), shows that productivity is a component which directly affects the company's profits and as a result success of an organization relies mainly on the productivity of its employees and that makes employee productivity an important objective for businesses. Evaluation of employee productivity is very complex as there is no one way of determining employee productivity. This is because many factors at work directly or indirectly hinder employee productivity. Employee productivity is based on the amount of time that an employee is physically present at his/her job, besides the extent to which he/she is "mentally present" or efficiently working during the presence at the job Sharma and Sharma, (2014) which contribute to increasing productivity of employees while carrying along better wages/salaries, working conditions and large employment opportunities (Hanaysha, 2015). However, in the context of this study, employee productivity simply refers to the sum total of efforts inserted by employees through diligent and dedication to service which directly impact the level of performance of the organization through customer satisfaction and goal actualization.

2.2 Collective Bargaining

Collective bargaining can be explained as the method which is used by workers to get organized and negotiated working conditions with their employees (Ale, 2002). Through the process of collective bargaining, trade unions negotiate terms of employment with their

employers, including salaries, benefits, and working conditions, on behalf of their members (American Federation of Labor and Congress of Industrial Organizations, 2016). Collective bargaining, according to Kochan (2012), is the working relationship between unions and their employers.

There are three specific elements of collective bargaining which characterize the functionality and importance of this phenomenon, such as: bargaining degree of coordination; bargaining coverage; and bargaining levels. Bargaining degree of coordination refers to the way unions and employers are organized to engage in discussions and negotiations which may have the form of individual union's negotiating separately or separate union's negotiating jointly, which is also known as single-table bargaining. The method of single-table bargaining attracted great attention and popularity over the last decades where collective bargaining rose from 40% in 1990 to 77% in 1998 as a prevalent method for industrial negotiations. The occurrence of this trend was not only resulted by the decreased multi-unionism but the desire of simplified methods of bargaining. However, it should be outlined that simplified bargaining arrangements are not only promoted by unions but also encouraged by employers (Blanpain, Langille & Landa, 2009).

Bargaining coverage is another component of collective bargaining and it defines the percentage of workers whose pay is determined by unions and employers bargaining negotiations. There are findings which indicate a significant decline in the collective bargaining coverage in unionized work environments since 1984 (Carrell & Hearvin, 2000). This trend has been particularly observed in the private sector and has resulted to the emergence of many unionized work environments with no or low collective bargaining. Another reason for this trend could be proposed to be the declining union density. There are other suggestions which outline that the declining union coverage may have been even resulted by the decreased support of employees (Carell & Hearvin, 2009). In addition, bargaining levels can be described as the pay bargaining which occurs at different workplace levels which is part of a multi-site organization. Workplace level bargaining is also recognized to have decreased over the last years, whereas multi-site employer level bargaining has significantly grown (Blanpain, Langille & Landa, 2009).

In addition, collective bargaining means the true working relationship established through negotiation, custom, practice and legislation between organization and accredited representative and their employees. Collective agreement is the process of arriving or attempting to arrive at a collective agreement (Nwokocha, 2015). Fashoyin (2011) defined collective bargaining as "machinery for discussion and negotiation, whether formal or informal between the employer(s) and worker's representatives aimed at reaching an agreement or understanding on the general employment relationship between the employer(s) and workers". It can also be defined as negotiation of working conditions and terms of employment between employers, a group of employers or one more employer's organization on the other to reach an agreement. (International Labour Organisation, ILO, 2013).

Reaching agreement is perhaps what makes negotiations equal to bargaining. Otherwise, when negotiations go on endlessly without a concrete agreement, no meaningful bargaining could have been struck. Flanders (2016) concentrated collective bargaining as one of the several methods used by trade unions to further their basic purpose of maintaining or improving the conditions of their member's working lives. Flanders further defines bargaining as the process by which the antithetical interests of supply and demand of buyers and sellers

are finally adjusted to end in the act of exchange. Moreover, collective bargaining can be described as a process whereby the terms and conditions of work are peacefully agreed upon through negotiation between the employers Union. It also extends to agreement on procedure to follow for solving dispute. It involves offer and counter offer. This is because in the meeting, the union makes certain demand and the management makes counter offer, the two sides thereafter try to work out an agreement.

However, issues covered in collective bargaining agreement such as wages, work hours, benefits, union activities and responsibilities, grievance handling and arbitration, employee right and security etc are motivating factors that if well conducted through consideration of employees grievances across the levels in the organization and with absolute degree of coordination, have tendency of enhancing employees attitude to work and which absolutely can be measured through employee productivity.

2.3 Bargaining Coverage

More than 60 percent of the workforce of the OECD is covered by collective agreements (Brandl and Braakmann, 2020). Coverage is over 70 percent in most of Western Europe with over 90 percent coverage in Austria, Belgium, Sweden, Finland, and France. Union density rates are significantly lower in most countries, and are not always correlated with bargaining coverage. A comparison of bargaining coverage and union density shows three patterns. One group of countries has high bargaining coverage and high union density. Most of these are Nordic (e.g. Finland, Denmark, and Sweden). They typically rely on high union membership rates to secure high coverage and bargaining power, and have other institutions, such as union involvement in social insurance provision, that provide additional incentives for membership (Lamarche, 2015).

The welfare of workers should be of the utmost priority at all times in an organization as this will be an incentive to improve the efficiency and dedication of the employees within the organization (Bharathi & Padmaja, 2018). Without a doubt, a happy and satisfied employee will reciprocate by giving the best performance. Hence, the rate of Collective bargaining coverage is an industrial practice that can help to enhance harmony by mutual settlement of trade disputes between an employer and workers or their respective unions (Sylvia, 2015).

2.4 Bargaining Levels

Majority of past literatures pointed out three levels at which bargaining takes place in organizations ranging from the company, the sector, and the national level. (Braakmann & Brandl, 2020) However, company and higher level bargaining are not necessarily exclusive and bargaining can take place simultaneously on the company and a higher level. (Braakmann & Brandl, 2020). In such multi-level bargaining systems, either the same or different issues can be negotiated on different levels. Thus, employees can be covered simultaneously by more than one collective agreement (Braakmann & Brandl, 2020).

Peter, Ellen, Marian, Richard & Block (2013), as cited in (Olive, 2015), conducted a comparison study at industry level assessing the effect of unions on firm productivity and cost whereby the effects of union on productivity vary by industry and by period under consideration. Lamarche (2015), purported that the two main aspects of collective bargaining are the level at which bargaining takes place and the coverage rate. However, the processes and institutional structures in which collective bargaining is embedded also play crucial role

in determining employee productivity (Braakmann and Brandl, 2020). While collective bargaining is not as multifaceted in developing countries as in developed countries, there are still fundamental differences among developing countries in the level of negotiation of collective bargaining and its coverage, with trends also varying as level at which bargaining occurs has implications for productivity (Lamarche, 2015). Bargaining at higher levels of organization, for example, entails issues of coordination, including costs for employers represented in the negotiations whereas predominant level of collective bargaining negotiations differ considerably by country (Lamarche, 2015). While in some developing countries the negotiating level has remained fairly stable over time, with a slight tendency toward decentralization, other countries have experienced large changes in recent years (Lamarche, 2015). However, in developing countries, collective bargaining agreements have taken drastic transformation from industry level through sectoral to firm level over years (Lamarche, 2015).

2.5 Bargaining Degree of Coordination

Coordination refers to the extent to which different units at the same or at different levels are integrated (Brandl & Braakmann, 2020). collective bargaining provides sufficient amplitude to compass all the facets of working with dignity under any economic conditions (Brandl & Braakmann, 2020). There are different ways to achieve coordination in wage bargaining: through direct means, as an explicit goal of peak business and labor associations or through state intervention; or through more informal means, such as pattern agreements led by bargaining agents at large firms or in leading industries (Brandl & Braakmann, 2020). However, Countries with company or establishment-level bargaining, such as the US and Canada, are typically viewed as having uncoordinated systems (Brandl & Braakmann, 2020) whereas informal coordination is common in countries with sectoral bargaining systems, such as Germany, in which peak associations are weaker and employer associations at the industry level negotiate agreements with industry-based unions. Coordination in this case relies on strong and relatively encompassing associations that are able to exert control over their members (Brandl & Braakmann, 2020).

Overt or direct coordination takes different forms. For example, in Belgium economy- wide agreements are negotiated between the main employer and union confederations at the national level, which then establish a framework for negotiations at industry and cross-industry level. In other countries, such as Spain and Portugal, national accords between peak associations and the government have been important at different periods in standardizing wage increases and ensuring member organizations do not deviate from those agreements. In Japan, the main union confederations set minimum objectives for the annual spring bargaining round, and unions adjust their company- level demands based on negotiation outcomes in the biggest companies (Brandl & Braakmann, 2020). According to Visser (2011), only three OECD countries.

Belgium, Germany, and Ireland, were characterized by national or central bargaining in 2010, complemented by sectoral and local or company bargaining. Other continental European countries, together with Australia and Israel, had predominantly sectoral bargaining; while local or company bargaining was dominant in the Anglo-American countries, several central and eastern European countries (Slovakia, Poland, and Estonia), and the Asian and Latin American countries: Japan, Korea, Mexico, and Chile. However, these broad categories show considerable diversity: for example, ‘centralized’ bargaining in Ireland was based on tripartite

social partnership agreements, which collapsed in 2010. Wages determination is fundamental to employee engagement in any productive activities as their activities are planned around the wages. Hence, bargaining degree of coordination of collective bargaining with respect to employee productivity is crucial. Many researchers have examined the effects of bargaining coordination on employee productivity through various collective bargaining measures but with varying results (Bell, 1997). Kim & Choi's study, conducted in 2018 (as cited in Alam, Hassan, Bowyer & Reaz, 2020), shows that an enhancement in bargaining coordination can enhance employee productivity leading to an improvement in employee productivity. Gunawan & Amalia (2015) also concluded that effects of bargaining coordination on employee productivity are constant. Traxler, Brandl & Glassner, 2008 as cited in (Brandl & Braakmann, 2020) posited that collective bargaining is coordinated as either peak employers' and trade union organizations (sometimes together with the state) that impose certain rules, such as ranges and corridors for agreements, either formally or informally upon bargaining units, or alternatively, by a voluntary coordination through informal processes and norms such as through sectoral pattern bargaining.

Collective bargaining is therefore said to be uncoordinated if none of the above process of coordination can be observed in a country, i.e. if bargaining units are fragmented and not committed or bound to any norm and coordination guideline (Brandl & Braakmann, 2020). Countries also may have different forms of board-level participation rights, which require large companies to include worker representatives in consultation or decision-making bodies, such as supervisory boards. Properly measuring the association between work practices covered in collective bargaining agreements and productivity requires examining practices and effects in a country with high collective bargaining coverage rates and in which the bargaining system has changed (Lamarche, 2015). Garnero, Francois & Terraz (2018) determined the effect of collective bargaining agreements on wage and productivity of Belgian linked employer-employee panel data for a period of 1999 to 2010 covering large part of private sector. Wages and productivity are examined in the presence of dummies involving establishments, sectorial affiliation and the degree of product market competition using two stage least squares (2SLS). It was revealed that collective bargaining at firm level has effect on both wages and productivity. This study could however have been improved through variable inclusion such as bargaining coverage, and degree of coordination and may also yield different result if conducted in another economy.

Brackmann and Bernd, (2020) conducted a study on the effects of collective bargaining systems on the productivity function of firms by analyzing bargaining structures and processes through the implications on policy making. The hypothesis were tested using representative workplace-level data for all member states of the European union and the result revealed that performance of coordinated sector collective bargaining systems is higher than all other forms of collective and individual bargaining so used for demographic profile of the respondent. The finding revealed that wages has significant effect on employee productivity but the quality of this work could have been enhanced through variable inclusion such as bargaining levels, bargaining coverage, and degree of coordination to measure collective bargaining. Musa, Bakure, Abubakar, Akinbode and Oyelude, 2024. Conducted a study on employee job satisfaction and employee productivity in Nigerian federal civil service using communication as metric for measuring job satisfaction. The study implore survey design and purposive non-probability sampling technique to collect data from 2,836, respondents and data analyzed using multiple and logistic regression and correlation through SPSS. The

finding revealed that employee productivity is strongly affected by communication. This study only examined public sector and communication without highlighting the medium through which the communication can be enhanced to achieve employee productivity. Hence, the need to channel the communication through bargaining levels, bargaining coverage, and degree of coordination in the private sector can help to further discover the effect of collective bargaining on employee productivity.

2.6. Theoretical Framework

Pluralist theory of Fox served as the foundation for the study. The concept of pluralist is that industrial relation is a pluralist society. Fox (1966), (as cited in Armstrong (2012), says that industrial relation is a plural society having a related but different interest and objectives which must be brought to equilibrium. These separate interest and objectives are always in conflict with each other. The conflicts in the organization disrupt peace and efficiency. In order to have industrial harmony, this conflict is dealt with through collective bargaining which is viewed as very necessary if well managed.

The existence of management (employers) and employees in electricity distribution companies require proper co-ordination for mutual relationship in the organization. The issue of co-ordination resulting in the co-existence of management and the workers is evidenced in pluralist theory which envisage on interaction based on rules and regulations. The existence in the electricity distribution companies is not also devoid of conflicts involving terms and conditions of service, hence, workers formed a union to negotiate collectively with the management to achieve a common goal which is the tenet on which pluralist theory is founded. Hence, Fox's theory of pluralist is the underpinning theory for this study.

3. Methodology

The research adopted a descriptive survey design and Cross sectional approach. This design was considered appropriate because of the randomness nature of the sample group being observed as it helps for clear understanding about population under study (Schindler, 2014). Researchers such as Dallal, (1998), and Consuelo, (2010) also are of the opinion that this method often help to avoid element of bias and as such ensure validity of results. The research targeted 2856 employees of Kaduna Electricity Distribution Company covering Kaduna, Zamfara, Sokoto, and Kebbi in the Northwest, Nigeria.

The sample of this research is calculated by using Taro Yamane (Yamane, 1967) formula with 95% confidence level. (According to 2856 employees from the data obtained from electricity distribution companies in the northwest, Nigeria). The sample size calculated is 351 employees. However, the sample size was increased by 30% to compensate for non-response so as to obtain larger response required for the desired level of confidence and precision (Israel 1992). Hence, the sample size is 456 employees of the electricity distribution companies in the northwest, Nigeria.

The research targeted 2856 employees of Kaduna Electricity Distribution Company covering Kaduna, Zamfara, Sokoto, and Kebbi in the Northwest, Nigeria.

State	Population of employees
Kaduna	1980
Kebbi	384
Sokoto	301
Zamfara	191
Total	2856

Source: (Talent Management Office, 2024)

For the instrument of the study, the researcher adopted 5 items, on bargaining coverage from the work of Dribbusch, Bispinck, and Tijdens (2005), 5 items on bargaining levels from the work of Michel (2006), 5 items on bargaining degree of coordination from the work of Dribbusch, Bispinck, and Tijdens (2005) and 5 items that are modified on the Employee Productivity of Buuri (2015) that comprises 11 statements that tackle productivity.

4. Findings

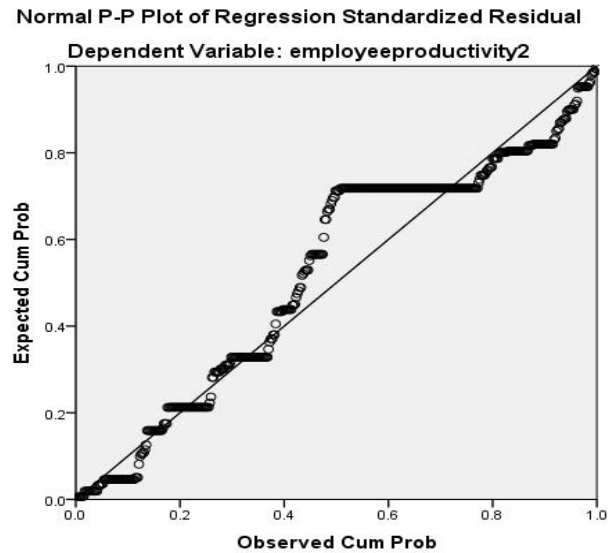
4.1 Response Rate

The researcher issued 456 questionnaires. Out of those questionnaires, only 22 were found to be unusable because they were not filled. The rest were found to be in order. The response is as shown by table 1 below.

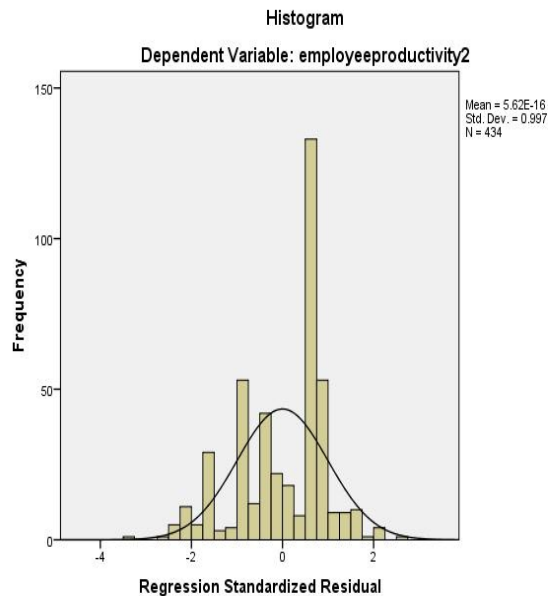
Table 1: Response rate

Number of Questionnaires Issued	Number of Questionnaires returned and filled	Response rate (%)
456	434	95

Since the questionnaires were self-administered they were pre-tested to ensure elimination of vague questions for ease of understanding by giving 47 questionnaires representing 10% of the total sample which is considered appropriate by researchers such as (Baker,1994) to some of the employees before the actual study. The responses obtained from these initial questionnaires guided the. In order to detect the multivariate outliers in the study, nomal p-p plot of regression standardized residual is extracted to reveal the concentration of responses from the respondents as shown in below:



To assess the normality of the distribution of scores, Kolmogorov-Smirnov test and graphical method approach were used. When non-significant results (> 0.05) are obtained for a score it shows the data fits a normal distribution (Tabachnik & Fidell, 2007). The data in Figure 4.4 below shows the results of the Kolmogorov-Smirnov. The results indicate that the data in relation to each variable is normally distributed as the significance value in all cases is greater than 0.05. This implies the data was suitable for analysis using correlation and regression analysis. Graphical method results are shown in the table below and the results indicate that the residuals are normally distributed.



The frequency distribution and percentage of participants are presented based on their demographic characteristics. Particularly, the demographic variables examined in this study include gender of the respondents, age bracket, as well as educational level of the respondents.

4.2 Descriptive Statistics

The descriptive statistics of the latent variables of this study are presented which includes the mean and standard deviation of the study's variables as shown in Table 2.

Table 2: Descriptive Statistics of Construct: Mean and Standard Deviation

	Mean	Std. Deviation	N
Employee productivity	3.7546	1.06537	434
Bargaining coverage	4.3598	.88808	434
Bargaining level	3.6310	1.09922	434
Degree of coordination	4.0357	.77309	434

Source: SPSS output

4.3 Correlation Results

The correlation matrix is used to determine the degree of association between independent variable and dependent variable. It is also used to identify whether there is relationship among the independent variables themselves and to be able to detect if multi-collinearity problem exists. The result shows that the independent variables (BC, BL, and DC) are fairly correlated with the dependent variable (EP). The summary of the person correlation coefficients of the study is presented in table 3 as follows.

Table 3:

Variables	EP	BC	BL	DC
EP	1.000			
BC	.691	1.000		
BL	.805	.639	1.000	
DC	.759	.833	.779	1.000

Source: SPSS OUTPUT

4.5 Regression Analysis

A regression model was run on the indicators of collective bargaining. The results in table 3 show the fitness of the model used in explaining the strength of the relationship between the constructs of collective bargaining and employee productivity. The collective bargaining indicators bargaining coverage, bargaining level, and degree of coordination were found to be satisfactory variables in determining employee productivity. This implies that bargaining coverage, bargaining level and degree of coordination explain 70.3 % variation in employee productivity. This was supported by the coefficient of determination also known as R-square value of 0.703. Thus, based on this coefficient, other factors that were not considered in study amount to 29.7 % ($1-0.703=0.297$ expressed as percentage) of the variability in employee

productivity in electricity distribution companies in northwestern states (Kaduna, Kebbi, Sokoto, and Zamfara), Nigeria. The results are presented in table 4 below.

Table 4: Model Summary for Collective Bargaining

Model	R	R square	Adjusted R square	Standard error of the estimate
1	.840	.705	.703	.58028

Predictors: (constant), collective bargaining

Further tests on ANOVA as showed in the table 4 revealed that the F-cal 343.182 was greater than the F-crit 5.80 and the P value 0.000 which was less than the level of significance 0.005 implying the results were statistically significant and there was goodness of fit of the model fitted for this relationship. The results also mean that bargaining coverage, bargaining level and degree of coordination are good predictors of employee productivity.

Table 5: Analysis of Variance

Model	Sum of squares	DF	Mean square	F	Sig.
Regression	346.672	3	115.557	343.182	.000
Residual	144.791	430	.337		
Total	491.463	433			

a. Dependent variable: employee productivity
b. Predictors: (Constant), bargaining coverage, bargaining level, degree of coordination.

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Bargaining Coverage	.254	.031	.212	7.771	.000
Bargaining Level	.532	.041	.549	13.129	.000
Degree of Coordination	.213	.080	.155	2.663	.008

Dependent variable: employee productivity

Based these, the regression model fitted as: $EP = -0.145 + 0.254BC_i + 0.532BL_{ii} + 0.213BCR_{iii} + 0.155$. Therefore holds true. The following regression model was postulated; $EP = -0.145 + 0.254BC_i + 0.532BL_{ii} + 0.213BCR_{iii} + 0.155$. The findings obtained in the study imply that for every one unit change in collective bargaining, employee productivity increases by 0.254, .532 and .213 hence, implying a positive impact of collective bargaining on employee productivity. These findings align with the findings posited by Cole (2005) that strong bargaining in collective bargaining is central to any industrial relations system since it is a tool through which regulated flexibility is achieved. When it is adhered to by the management, it influences employee productivity. Similar results were postulated by Budd et al. (2008) who determined that when the collective bargaining is adhered to by those in management, it achieves a workable relationship with management, found on mutual respect, in which tangible benefits are realized on agreed terms and not just on management's whim.

4.6 Hypothesis Testing

The dependent variable (employee productivity) was regressed on predicting variables of bargaining coverage, bargaining levels, and bargaining degree of coordination. The independent variables significantly predict employee productivity, $F(3,430)=343.182$, $p<.001$, which indicates that the three factors under study have a significant effect on employee productivity.

Moreover, the $R^2=.705$ depicts that the model explains 70.5% of the variance in employee productivity. Additionally, coefficients were further assisted to ascertain the influence of each of the factors on the criterion variable (employee productivity). It evaluates whether coverage significantly and positively affects employee productivity. The results revealed that bargaining coverage has a significant and positive impact on employee productivity ($B=.254$, $t=4.47$, $p<.001$). Hence H_{01} was rejected. H_{02} evaluates whether bargaining level has a significantly positive effect on employee productivity. The results show that bargaining level has a significantly positive effect on employee productivity ($B=.549$, $t=13.129$, $p<.001$). Consequently, H_{02} was rejected. H_{03} evaluates whether degree of coordination has a significantly positive effect on employee productivity. The results show that degree of coordination has significantly positive effects on employee productivity ($B=.155$, $t=2.663$, $p=.008$). Hence, H_{03} was rejected. This finding is consistent with that of Akhaukwa, Maru & Byaruhanga (2013), Ushie, Godwin, Ekpenyong and Violet, (2019) who assert that collective bargaining affects productivity. The results are presented in table 4.11

Table 7: Hypotheses results

Hypotheses	Regression weights	B	T	P - value	Results
H_{01}	BC>EP	.254	4.471	.000 *	Rejected
H_{02}	BC>EP	.549	13.129	.000*	Rejected
H_{03}	DC>EP	.122	2.663	.008	Rejected
R		.705			
F(3, 430)		343.182			

Note: $p<0.05$. Bc; Bargaining coverage, Bc; bargaining level,

Dc; Degree of coordination, ep; employee productivity

4.7 Discussion of Findings

The findings of the study confirms that the measurement and the structural properties of the research model had been adequate. The study proves significant effect of collective bargaining on employee productivity. Moreso, results from the statistical regression analysis of the hypotheses H_{01} , H_{02} , H_{03} , that were developed based on research question one, two, three and objective one, two and three were all rejected.

Generally, this study has portrays that bargaining coverage, bargaining level, and degree of coordination enhances employee productivity since all the three variables are significantly related to employee productivity of distribution companies in the northwest, Nigeria. The

study had also establishes the importance of well-structured collective bargaining in building and developing employee productivity. Hence, collective bargaining will be the ultimate avenue for addressing the productivity situation especially in electricity distribution companies of North West, Nigeria.

The primary objective of this study is to investigate the effect of collective bargaining on the relationships between bargaining coverage, bargaining level and degree of coordination. The empirical findings supports all the hypotheses develop and also supports the key theoretical positions upon which the present study had been drawn. In addition, the research findings are consistent with a number of previous empirical studies conducted in the domain of current research underpinning theories. While there are some studies that had investigates the effect of collective bargaining on employee conflict management, the present study specifically addressed the identified theoretical gaps of bargaining coverage, bargaining level and degree of coordination as antecedents of employee productivity. Such findings were theoretically supported by pluralist theory. Specifically, the empirical results add to the body of knowledge particularly on how bargaining coverage, bargaining level and degree of coordination exert influences on the relationships between collective bargaining and employee productivity.

Hence, the study concludes with some avenues for future research directions. Thus, the conclusion of the study was drawn based on the research hypotheses in chapter one. The finding reveals that bargaining coverage had significant positive influence on Employee productivity of electricity distribution companies of northwest, Nigeria. Therefore, this study concludes that in order to enhance employee productivity, there is need to improve the level of employee fair representation in the bargaining agreement. In other words, the higher the coverage rate, the higher the level of commitment on the part of employee in terms of service discharge.

Additionally, the finding further reveals that bargaining level had significant positive influence on employee productivity of electricity distribution companies of northwest, Nigeria. Therefore, this study concludes that in order to enhance employee productivity, there is need to stimulate and ensure that all bargaining agreements both company, state and national levels are strictly adhered to. In other words, the higher the functionality of different bargaining levels, the higher the level of employee productivity. The final finding of the study shows that degree of coordination had significant positive influence on employee productivity. This implies that in order to gain employees confidence, unbiased and transparent well-coordinated bargaining agreement is essential to motivate them and as such enhance their productivity.

5. Conclusions

The primary objective of this study is to investigate the effect of collective bargaining on the relationships between bargaining coverage, bargaining level and degree of coordination. The empirical findings supports all the hypotheses develop and also supports the key theoretical positions upon which the present study had been drawn. In addition, the research findings are consistent with a number of previous empirical studies conducted in the domain of current research underpinning theories. While there are some studies that had investigates the effect of collective bargaining on employee conflict management, the present study specifically addressed the identified theoretical gaps of bargaining coverage, bargaining level and degree of coordination as antecedents of employee productivity. Such findings were theoretically supported by pluralist theory. Specifically, the empirical results add to the body of knowledge

particularly on how bargaining coverage, bargaining level and degree of coordination exert influences on the relationships between collective bargaining and employee productivity.

The study concludes with some avenues for future research directions. Thus, the conclusion of the study was drawn based on the research hypotheses in chapter one. The finding reveals that bargaining coverage had significant positive influence on Employee productivity of electricity distribution companies of northwest, Nigeria. Therefore, this study concludes that in order to enhance employee productivity, there is need to improve the level of employee fair representation in the bargaining agreement. In other words, the higher the coverage rate, the higher the level of commitment on the part of employee in terms of service discharge. Additionally, the finding further reveals that bargaining level had significant positive influence on employee productivity of electricity distribution companies of northwest, Nigeria. Therefore, this study concludes that in order to enhance employee productivity, there is need to stimulate and ensure that all bargaining agreements both company, state and national levels are strictly adhered to. In other words, the higher the functionality of different bargaining levels, the higher the level of employee productivity.

Finally, findings of the study shows that degree of coordination had significant positive influence on employee productivity. This implies that in order to gain employees confidence, unbiased and transparent well-coordinated bargaining agreement is essential to motivate them and as such enhance their productivity.

6. Recommendations

In line with the findings and conclusion of the study, the following recommendations were made:

- i. Based on the finding which reports that bargaining coverage significantly influence employee productivity of electricity distribution companies of northwest, Nigeria, it is recommended that both employers and employees understand the role bargaining coverage plays in motivating individual to their increases productivity. This will enable the employers and policy makers to direct resources and thoughts on target employee in electricity distribution companies with the aim of strengthen their commitment at work as it will lead to enhancement of employee productivity. Hence, understanding the antecedent of employee productivity can help in stimulating productivity.
- ii. Similarly, based on the second finding which reports that bargaining level significantly affect employee productivity of electricity distribution companies of northwest, Nigeria, Management and employees understand the role played by bargaining level in motivating individual towards proper attitude to work to increase employee productivity. This will enable the management and the policy makers to direct views and resources on employees, who is involved in productivity. Therefore, knowledge of active bargaining level can help in fostering good representation, thus, discovering the best ways to foster productivity, as well as enhance the likelihood of the ultimate employee productivity of new business start-up.
- iii. Based on the third finding which establishes that degree of coordination had significant positive influence on employee productivity in electricity distribution companies of northwest, Nigeria. In line with the findings, it is recommended that government, employers and policy makers should devote adequate means of enhancing proper

degree of coordination of collective bargaining as the construct was found to be a determinant of the successful conduct of collective bargaining agreement which can in no small measure facilitate employee productivity in electricity distribution companies in Nigeria.

- iv. Additionally, while this research targeted all employees irrespective of position at work, there is a need to examine the employee productivity of the employees based on their departments and position at work. Hence, the study is limited by neglecting the fact that employee productivity can differ according to department and position of employees at work. Future studies should consider investigating employee productivity in other distribution companies in Nigeria and probably take cognizance of department and position of employees into consideration, which may provide more in-depth results. Although the results may not differ if conducted in other parts of the distribution companies in the country, since the condition and terms of service is similar, it will nonetheless increase the confidence in the research model. Hence, future studies should replicate this study in other parts of the country.

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