

## SOCIO-ECONOMIC IMPLICATIONS OF INDUSTRIAL UNREST IN NIGERIA: A COINTEGRATION AND CAUSALITY TEST

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### Abstract

*Nigeria has witnessed a plethora of trade disputes rather than peaceful industrial relations. The pattern of industrial relations has been conflictual with disruptive consequences and significant work-hour losses due to work stoppages. Thus, this study examines the socio-economic implications of industrial unrests in the Nigerian economy within a period of 24 years i.e. 1990-2013. It tests for unit root, cointegration, multiple regression estimation, post-estimation and causal relations among capital, work stoppage, workers involved, trade dispute, man-day lost and per-capita income. There exist a long-run relationship between industrial unrest factors and welfare measured by per-capita income. The Granger causality test result shows a bi-casual relation exists between capital and per capita income, as other industrial unrest factors were found to have no causal relation with welfarism in Nigeria. The results further revealed that capital, work stoppage and workers involved exert positive influence on socio-economic development measured by per capita income in Nigeria. Thus, trade dispute and man-day lost are found to exert negative effect on socio-economic development measured by per capita income. Moreover, government is to promptly review, negotiate and implement collective agreements entered with workers concerning improvements in wages and general working conditions.*

**Keywords:** Industrial unrest factors, per-capita income, cointegration test, Granger causality test, Nigeria.

### Introduction

Reactions to socio-economic crises constitute a foundation for reforms worldwide. While such reactions typically include international coercion, normative emulation and competitive mimicry, the ultimate aim of reforms is to redefine the role of the state in the economy (Henisz, Zelter & Guillen, 2005). Different reforms have been implemented in Nigeria although the country is yet to make appreciable progress in the management of industrial conflicts (Akeem, 2011). Nigeria has

recently witnessed a huge increase in the number of industrial unrests or strikes. Industrial unrest or strike is workers' refusal to work as protest for inadequate service or poor condition (Edinyang and Ubi, 2013). Historically, the widespread perception was that Britain compared with other countries had a particularly high level of strikes, such that industrial action came to be known as the 'British disease' (see Honeyball and Bowers, 2004).

In Nigeria, it has been fundamentally reported that out of the current estimated population of 170 million, members of Academic Staff Union of Universities (ASUU), National Union of Teachers (NUT), Trade Union Congress (TUC), Nigerian Medical Association (NMA), Nigerian Labour Congress (NLC), teachers of government owned colleges of education and polytechnics or monotechnics and other government controlled bodies are capable of going on strike for increase pay wages; when added to the existing 17,500 Nigerians who control top management of the country's top public offices. All these people are not up to 5% of the entire Nigerian population estimated at 170 million in 2012. Yet close to 80% of the annual public finances, generated and borrowed, is scandalously spent on servicing them on yearly basis, out of which, payment of allowances take up to 90%, whereas salaries account for only 10% (News Express, 2013).

Unfortunately, such industrial demands and their agreements have been predicated upon "national cake sharing", whereby the striking bodies vent their grudges on politicians and other top public officers on the ground that since politicians spend scandalously to maintain themselves, several conditions of services especially lofty allowances formulated and demanded by the striking bodies, must all be paid to them even if it means borrowing at exorbitant interest rates. For instance, the pre-SAP periods witnessed a lot of industrial actions in Nigeria due to the public-controlled nature of the economy. For instance, 775 trade disputes were recorded in 1975, 355 in 1980 and 258 in 1981. While the post-SAP period witnessed a reduction in trade dispute even though, man-day lost increased. This is primarily due to increases in the number of working population (CBN, 2010). Also CBN (2010) reports that the period before liberalization of the economy witnessed more work-stoppages than the post-SAP period. All these affect the growth of the Nigerian economic size that invariably affects socio-economic development of the less-privileged Nigerians. On this note, this study examines the

socio-economic implications of industrial unrests in the Nigerian economy.

### **Literature Review**

Unions and management tend to have opposite views because of the divergence between the expectations of management and labour in organizations which often leads to conflicts. Conflict by nature is a constant phenomenon in any human organization. It is so ubiquitous in social life that it has been isolated by some as the basic unit for understanding social existence (Ajala, 2003; Alimba, 2010). The endemic nature of conflict in human grouping has been traced to the pursuit of divergent interests, goals and aspirations by individuals and/or groups in defined social and physical environment (Otite, 2001). Thus, conflict remains the most permanent feature that makes humanity convinced that growth and development are predicated on conflicts. Though conflict is generally perceived as something devastating, abnormal, dysfunctional and detestable, yet it could be a precursor of positive change if constructively handled (Edwards, 2002; Hammed & Ayantunji, 2002). As a concept, conflict has been subjected to diverse definitions by various scholars based on the context and their understanding of the concept. For example, Lederach (1995) described conflict as an ongoing situation that is based on deep seated differences of values, ideologies, and goals. In support of this definition, Fisher, Ury and Brett (2004) defined conflict as a relationship between two or more parties (individuals or groups) who have or think they have incompatible goals. It therefore implies that conflict is a continuous interaction that span through lifetime of man and not just a one-off relationship.

This study reviews the bargaining theory of labour dispute that are likely to cause work stoppage. In economics, models of bargaining process are used to provide insight into the cause of work stoppages. Strikes occur as a result of miscalculation on the part of the parties involved in a labour disputes (Olaloye, 1995) cited by Ige, Adeyeye and Aina (2011). This study however,

considers models of collective bargaining in particular, Chamberlain bargaining process. Chamberlain defines bargaining power as the ability to secure one's opponents agreeing to one's terms (Ige, Adeyeye and Aina, 2011). This could be explained as management willingness to agree to the union's terms or demands. It is the rate of mediation between union and management in terms of opportunity cost i.e. how costly disagreeing will be relative to agreeing. In other words, there is an opportunity cost as well as real cost between cost of agreement and cost of disagreement on the part of the management and unions.

The model is given as:  $= \frac{MCD}{MCA}$ . Where: UBP = Union Bargaining Power; MCD = Management Cost of Disagreeing with union's terms; MCA = Management Cost of agreeing with union's terms.

When and if the management estimates that it is more costly to agree than to disagree (i.e. the union bargaining power is less than one) management will choose to disagree and thereby reject the unions terms. On the other hand, if management recognises that it is more costly to disagree than to agree i.e. the union bargaining power is greater than one) management will choose to agree i.e. (Ige, Adeyeye and Aina, 2011):

$$UBP = \frac{MCD}{MCA} < 1 \quad \text{Management chooses to disagree}$$

$$UBP = \frac{MCD}{MCA} > 1 \quad \text{Management chooses to agree}$$

On the other hand, management bargaining power is quantitatively given as:  $MBP = \frac{UCD}{UCA}$ . Where: MBP = Management Bargaining Power; UCD = Union perceived cost of disagreeing; UCA = Union perceived cost of agreeing with management terms.

If management bargaining power is less than one, the union will reject management offer and conversely if it is greater than one, the union will accept management offer. In other words, the

union cost of disagreeing is stochastic of loss of wage income during a strike action.

$$MBP = \frac{UCD}{UCA} < 1 \quad \text{Union's rejection of management offers.}$$

$$MBP = \frac{UCD}{UCA} > 1 \quad \text{Union's acceptance of management offers.} \quad (2.4)$$

Whenever, the denominator is greater than the numerator in the above equations (2.1-2.4) the implication is disagreement or rejection.

Ige (1998), in his findings classified industrial conflict into four types: the first category is that between individuals in industry; the second is conflict involving a non-union members and management; the third is conflict between a labour union and one of its members and the management group or the manager; the fourth is conflict within collectivises. He further stated that industrial disputes involve certain issue on which the workers or the employers or both are dissatisfied. These issues which are, in the main, substantive in character should be distinguished from the causes and circumstances of industrial dispute which are, in the main, procedural in character or having to do with how the real issues were handled by the parties. However, Yakubu (2000) argued that conflict could be classified into four broad spectrums: intrapersonal conflict, interpersonal conflict, intergroup conflict and intra-group conflict. He considered intrapersonal Conflict to be the most difficult conflict since it occurs between oneself and caused by being pushed into two or more directions at a time.

Empirically, Owoseni (2011) examines the role of industrial conflict on the relationship that exist between the employees and their employers in the petroleum sector of the economy. He subjected the study to a two hundred and three members of Chevron Plc. Three hypotheses were tested and the findings of the study revealed that industrial conflict impacts negatively on employee-employer relationship. It was however pointed out that a good number of manpower is always lost during industrial conflict. Production is paralyzed and sale

adversely affected while a portion of profit that is paid to employees at the end of the fiscal year eludes them. The result concluded that disparity in the distribution of and access to economic power impacts negatively on employee-employer relationship.

Similarly, Akeem (2011) examined labour reform and industrial conflicts mismanagement in Nigeria using documentary analysis. He argued that industrial conflicts have not been fully managed in Nigeria due to anomalies in the country's conflict management mechanisms. More so, the state power has been used arbitrarily whereas the Nigerian Labour Congress has remained adamant in its struggle for workplace justice. This development derived from decades of antagonism between the Nigerian government and organised labour. Thus, efforts made towards ensuring industrial peace remain inadequate as industrial conflicts have been mismanaged. Consequently, the new phase has thrown up challenges and hindrances to effective management of industrial conflicts. The fundamental problem is however not the dearth of structures that could promote industrial peace but lack of transparency and institutional capacity needed for reconciling dissenting voices.

Also, Ige, Adeyeye and Aina (2011) argued that earlier studies have isolated the economic and non-economic determinants of conflict in developing countries but the impacts of the identified factors have not been estimated. In view to this, they examined empirically the factors that influence industrial conflicts in Nigeria during the period 1980 – 2010. They however attempt to bridge the gaps that exist between the theoretical and empirical analyses. The study employed simultaneous equation model techniques (SEMT) in which strikes and wage rates were made endogenous. 400 staff across six selected companies in the six geo-political zones of Nigeria, after stratification, were chosen randomly through simple random techniques being a descriptive study which made use of three research questions and three hypotheses. The

secondary data used were obtained from the Federal Ministry of Labour, Employment and Productivity, Lagos and the National Bureau of Statistics (NBS) Lagos. Empirical results show that changes in wage rate, price expectation and union membership concentration influence industrial conflicts in Nigeria. More so, the simultaneous equation model revealed that wages were significantly affected by strikes activity. Strike activities were not affected by wages only during the period under study.

In addition, Awe and Ayeni (2013) investigated the impact of the poor industrial relations on the National productivity in Nigeria employing time series data over the period 1970 – 2004. They used the modified Least Square as an analytical tool. The study found that trade disputes and work stoppages negatively affect the growth of national productivity; proxied by per capita income. Evidence also suggests that the shock received by the economy through trade disputes is mostly felt in subsequent year – a phenomenon known as J–Curve. From their study, the policy implication shows that government should seek possible ways to improve workers productivity especially in those establishments and parastatals which cannot be privatized.

More so, Osamwonyi and Ugiagbe (2013) find out whether harmonious industrial relations can be used as a panacea for organizational ailments especially that relating to human resources management. They used both primary and secondary data. The secondary involves critical summary of some existing literature, while the primary source were done through questionnaire and oral interview. The conclusion from their study inter alia revealed that a harmonious industrial relation is indeed a most potent panacea for organization suffering from poor management, and that the support framework exists for the internalization as a management culture. The pivot is transaction theory and the theme is that collaboration will ensure positive change and team effort.

Furthermore, Akume and Abdullahi (2013) applied a documentary and analytical approach examines the challenges and prospects of effective industrial conflict resolution in Nigeria. It was observed that significant among the reasons that have vexed the situation is the unprecedented jumbo salaries and allowances being paid to political offices holders. Other factor is related to government persistent character of reneging from implementing signed agreement with its labour union. They however suggested that parties should endeavour to respect signed agreement as a way of reducing the persistent labour unrest.

Recently, Ezeagba (2014) noted that strike has been the most overt expression of industrial conflict in Nigeria. No doubt, this action affects the cost of production and of course productivity as in most cases strike cost (wages and salaries as well as other unavoidable payments) are paid during the strike period. He however, examines strike cost and economic development in Nigeria. Taking strike cost as a factor of production he develops a model that can be used as a framework for analyzing the effect of strike cost on economic development. At the end, he argued that though industrial conflict is inevitable, strike can be avoided with good industrial relations.

In the word of Gregory and Georgia (2010), conflict in the workplace is a painful reality and a key reason for poor productivity and frustration... it does not magically go away and only get worse when ignored. If sufficiently widespread, these can have the same effect on the efficiency of the enterprises as organized action. If the situation deteriorates badly or has become endemic, locating and dealing with the individualized cases, can often be more difficult than dealing with collective industrial actions.

### Model Specification and Estimation Techniques

As stated earlier in the previous section, industrial unrest has negative effect on technology of the nation and increases cost of Production. A growth accounting model especially Solow model (1956 and 1957) can be used to analyze the effect of

strike on economic development. Growth accounting model consists of decomposing growth into the growth of output, growth in capital, labour and technical change (Boschini, 2002; and Ezeagba, 2014).

Starting from the general neo-classical production function with a Hick's -neutral productivity or technical change and strike taken as a factor of production.

$$Y = f(A, K, L, S) \quad (3.1)$$

Where, Y represents the output (GDP), A is the level of technology, K is the capital, L is the labor and S is the strike.

Since production function is only derived for non-negativity of input and output levels and depending on the level of output required and efficiency. Hence equation (3.1) is defined as  $K > 0$ ,  $L > 0$  and  $S > 0$ . However, factors that can cause industrial unrest (strike) i.e. trade dispute, work stoppage, workers involved and man-day lost are considered. To take care of socio-economic development of Nigerians, per-capita income is employed.

The technique of analysis for this study is the use of the modified Least Square Regression technique. The modification was done by de-trending the variables by using the first difference to avoid spurious regression, through the influence of time on the variables. The model assumes a linear relationship between the variables following Yesufu (2000), Dike (2005), and Awe & Ayeni (2013). The model was specified functionally as follows:

$$PCY = f(K, TDT, WSP, WIV, MDL) \quad (3.2)$$

Mathematically, it is written as:

$$PCY = \alpha_0 + \beta_1 K + \beta_2 TDT + \beta_3 WSP + \beta_4 WIV + \beta_5 MDL + \mu \quad (3.3)$$

Where; per capita income (PCY), capital (K), trade dispute (TDT), work stoppage (WSP), workers involved (WIV) and man-day lost (MDL), and error term ( $\mu$ ).

The apriori expectation provides expected signs and significance of the values of the coefficient of the parameters under review on the part of the empirical evidence and theoretical assertions. All, the incorporated indicators of industrial unrests in the modified model are expected to retard per capita income, whereas capital indicate positive relationship if channeled into the right sector paths. Annual (secondary) data of the variables are used, and they were collected from the Central Bank of Nigeria statistical bulletin, 2014 and World Development Index (WDI), 2014. Annual (secondary) data of the variable are used for the period of 1990 to 2013.

The model is estimated using the Ordinary Least Squares (OLS) for long-run estimates, which consists of the R-square ( $R^2$ ), F-statistic and t-test. The R-square ( $R^2$ ) is concerned with the overall explanatory power of the regression analysis, the F-statistic is used to test the overall significance of the regression analysis and the t-test is used to test the significant contribution of the independent variables on the dependent (Oyeniyi 1997). Before estimation, we performed a stationarity (unit root) test using Augmented Dickey Fuller (ADF) that excludes the intercept and trend and Engel Granger cointegration test for long-run relationship. Furthermore, we also

conducted the Granger causality test to show the causal relationship among variables of interest.

## Empirical Analysis and Discussions

### Unit Root Test Analysis

The stationary test results of the incorporated times series variables in the regression model expressed previous section is presented in Table 4.1 using the Augmented Dickey-Fuller (ADF) unit-root test. The test result indicated that the time series variable, per capita income (PCY), capital (K), and trade dispute (TDT) were not found to reject the null hypothesis “no stationary” at level. This implies that these series are not stationary at levels i.e. first-difference of this series is *mean reverting* and stationary. Then, the series is integrated of order one i.e.  $I(1)$ .

However, work stoppage (WSP), workers involved (WIV) and man-day lost (MDL) is stationary at level i.e. integrated at order zero [ $I(0)$ ]. Thus, it was found not to reject the null hypothesis “no stationary” at level but after several iterations based on the number of lag length and differencing, the series were found to reject the null hypothesis at first difference. This indicates that the first-difference of those series is *mean reverting* and stationary.

**Table 1: ADF Unit Root Test Results**

Series	T-ADF Statistics	Order of Integration
PCY	-3.8978 (0) -3.7696*	1
K	-3.7096 (0) -3.0049**	1
TDT	-5.9976 (0) -3.7696*	1
WSP	-4.922 (0) -4.4164*	0
WIV	-3.6009 (0) -3.2486***	0
MDL	-3.7857 (1) -3.6329	0

**Note:** \*, \*\* & \*\*\* denote 1%, 5% and 10% significant level respectively.

**Source:** Author's computation (2015).

Subsequently, econometric literature has indicated that linearly combining or regressing a non-stationary series on non-stationary and stationary time series might yield spurious regression and render estimated parameters inefficient. Thus, this argument prompts the cointegration test to examine if the linear

combination of industrial unrest and socio-economic welfare.

### Cointegration, Long-Run Estimates and Diagnostic Test

The long-run relationship between factors of industrial unrest and socio-economic welfare in Nigeria between 1990 and 2013 was examined

using the Engle-Granger cointegration technique and the test results are shown on Table 2

**Table 2: Engle-Granger Cointegration Results**

Series	ADF Test at Level		Decision
	Statistics	Critical Value	
$ECT = u = \log(PCY) - \left( \alpha + \beta_1 \log(K) + \beta_2 \log(MDL) + \beta_3 \log(TDT) + \beta_4 \log(WIV) + \beta_5 \log(WSP) \right)$	1% level: -4.4164 5% level: -3.6220 10% level: -3.2486	-3.6281 (0.0494)	Stationary i.e. Cointegrated

**Source:** Author's computation (2015).

The cointegration result presented in Table 2 indicated that the estimated residual (ECT) from the main empirical model was found to be stationary at level. This indicates that the null hypothesis of "no cointegration" was rejected at 5% significance level. This implies that there exist long-run relationships among per capita income (PCY), capital (K), trade dispute (TDT), work stoppage (WSP), workers involved (WIV) and man-day lost (MDL) in Nigeria between 1990 and 2013. Thus, there is long-run relationship between all the incorporated industrial unrest factors and socio-economic welfare rate in Nigeria.

The cointegrating equation was estimated using the ordinary least square (OLS) method and the long-run estimates were presented on Table 3. The table 3 above reports that capital (K), work stoppage (WSP) and workers involved (WIV) exert positive influence on socio-economic development measured by per capita income (PCY) in Nigeria between three decades period after Nigeria's independence and 2013 fiscal year and only capital conform with the theoretical expectation. This implies that a 10% percentage increase in capital (K), work stoppage (WSP) and workers involved (WIV); socio-economic development measured by per capita income (PCY) increases by 7.26%, 2.20% and 3.29% per cent respectively.

**Table 3: Estimated Long-Run Model Results and Diagnostic Test**

Dependent Variable: LOG(PCY)				
<b>Method: Least Squares</b>				
Observation (n) = 24				
Variable	Coefficient	Std. Error	T-Statistics	Prob.
C	0.9867	0.7812	1.2631	0.2227
LOG(K)	0.7255	0.0574	12.6317	0.0000
LOG(MDL)	-0.0188	0.0554	-0.3401	0.7377
LOG(TDT)	-0.8637	0.2255	-3.8299	0.0012
LOG(WIV)	0.2197	0.1134	1.9370	0.0686
LOG(WSP)	0.3291	0.1303	2.5267	0.0211
R-squared	0.9843	Durbin-Watson stat		1.4806
Adjusted R <sup>2</sup>	0.9799	F-statistic		225.023
S.E. of regression	0.2157	Prob(F-statistic)		0.0000

<b>Residual Normality Test</b>			
<b>Jarque-Bera</b>	3.6086	<b>Prob.(J.B)</b>	0.1646
<b>Breusch-Godfrey Serial Correlation LM Test</b>			
<b>F-statistic</b>	1.5597	<b>Prob. F(2, 16)</b>	0.2405
<b>Obs*R-squared</b>	3.9157	<b>Prob. Chi-Square(2)</b>	0.1412
<b>Heteroskedasticity Test: Breusch-Pagan-Godfrey</b>			
<b>F-statistic</b>	0.8372	<b>Prob. F(5,18)</b>	0.5405
<b>Obs*R-squared</b>	4.5283	<b>Prob. Chi-Square(5)</b>	0.4761

**Source:** Author's Computation (2015).

The table 3 also reports that trade dispute (TDT) and man-day lost (MDL) are found to exert negative effect on socio-economic development measured by per capita income (PCY) in Nigeria during the review periods and this does conform to the apriori expectations. This implies that a 10% percentage increase in trade dispute (TDT) and man-day lost (MDL) reduces the socio-economic development measured by per capita income (PCY) with a magnitude of 0.19 and 8.64 percent respectively.

In assessing the partial significance of the estimated parameters for the considered variables, the t-statistics results are presented in the table 2. The result shows that the estimated parameter for capital (K), trade dispute (TDT) and work stoppage (WSP) were found to be partially statistically significant on per capita income (PCY) at 5% critical level because their *p-values* are less than 0.05; and workers involved (WIV) found statistically significant at 10% significance level. However, man-day lost (MDL) was statistically insignificant at 5% and 10% significance level.

Thus, the F-statistic result shows that all the incorporated socio-economic determinants of industrial unrest are simultaneously significant at 5% critical level. Thus, the adjusted R-squared result reveals that 98.0% of the total variation in volume of per capita income (PCY) is accounted

by changes in capital (K), trade dispute (TDT), work stoppage (WSP), workers involved (WIV) and man-day lost (MDL) during the review period. The Durbin- Watson test result reveals that there is presence of moderate negative serial correlation among the residuals, because of the d-value (1.481) is less than two. Thus, the regression is not spurious.

However, the Breusch-Godfrey serial correlation test result from table 4.3 reported that we do not reject the null hypothesis "no serial correlation" at 5% significance level, and likewise for the Breusch-Pagan-Godfrey heteroskedasticity test, the result indicated that we do not reject the null hypothesis "no heteroskedasticity" at 5% significance level. In addition, the table also reports the probability value of the Jarque-Bera statistic (0.1646) shows that the estimated residual series is normally distributed with zero mean and constant variance. This tends to improve the reliability of the estimated parameters and thus, necessitate other residual diagnostic test such as higher order serial correlation and heteroskedasticity tests.

#### **Granger Causality Analysis**

The pair-wise Granger causality test results of the relationship among industrial unrest factors and socio-economic welfare in Nigeria from 1990 to 2013 were presented on Table 4.

**Table 4:** Pair-Wise Granger Causality Test Results

<b>Null Hypothesis:</b>	<b>Obs</b>	<b>F-Statistic</b>	<b>Prob.</b>
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K does not Granger Cause PCY	22	16.8009	9.E-05
PCY does not Granger Cause K		17.0679	9.E-05
MDL does not Granger Cause PCY	22	0.00190	0.9981
PCY does not Granger Cause MDL		0.35135	0.7087
TDT does not Granger Cause PCY	22	0.00282	0.9972
PCY does not Granger Cause TDT		0.04348	0.9576
WIV does not Granger Cause PCY	22	0.03430	0.9663
PCY does not Granger Cause WIV		0.00983	0.9902
WSP does not Granger Cause PCY	22	0.28389	0.7563
PCY does not Granger Cause WSP		0.26149	0.7729
MDL does not Granger Cause K	22	0.04849	0.9528
K does not Granger Cause MDL		0.19819	0.8221
TDT does not Granger Cause K	22	0.07325	0.9297
K does not Granger Cause TDT		0.06697	0.9355
WIV does not Granger Cause K	22	0.09004	0.9143
K does not Granger Cause WIV		0.02695	0.9735
WSP does not Granger Cause K	22	0.33894	0.7172
K does not Granger Cause WSP		0.14437	0.8666
TDT does not Granger Cause MDL	22	2.88497	0.0834
MDL does not Granger Cause TDT		5.00151	0.0196
WIV does not Granger Cause MDL	22	3.24028	0.0642
MDL does not Granger Cause WIV		1.97823	0.1689
WSP does not Granger Cause MDL	22	0.13916	0.8711
MDL does not Granger Cause WSP		0.50180	0.6141
WIV does not Granger Cause TDT	22	5.22326	0.0170
TDT does not Granger Cause WIV		8.21621	0.0032
WSP does not Granger Cause TDT	22	0.59430	0.5630
TDT does not Granger Cause WSP		0.91110	0.4208
WSP does not Granger Cause WIV	22	1.78631	0.1976
WIV does not Granger Cause WSP		0.61491	0.5523

**Source:** Author's computation (2015).

The test result indicated that on the basis of the F-statistic values, there is bi-causal relation between capital (K) and per capita income (PCY) at 5% significance level. Contrary, other industrial unrest factors were found to have no causal relation with per capita income (PCY) in Nigeria. Similarly, others with no causal relations are MDL does not Granger Cause K; TDT does not Granger Cause K; WIV does not Granger Cause K; WSP does not Granger Cause K; WSP does not Granger Cause MDL; WSP does not Granger Cause TDT; and WSP does not Granger Cause WIV. Also, bi-causal relations were reported for the following null hypotheses i.e. "TDT does not Granger Cause MDL"; and "WIV does not Granger Cause TDT" at either 5% or 10% significant level. However, a bi-causal relation is WIV does not Granger Cause MDL.

### Conclusion and Policy Options

This study critically examined the precise effect of socio-economic implication of industrial unrest on the Nigerian economy between three decades after independence 1990 and 2013. The Nigerian economy has undergone series of economic reforms during these time period. The study employed the Augmented Dickey Fuller test as pre-estimation test; ordinary least square (OLS) for estimation of parameters; and the Breusch-Godfrey serial correlation, Breusch-Pagan-Godfrey heteroskedasticity, and Jarque-Bera statistic as diagnostic tests and Granger causality test for causal relationship between the variables of interest. The unit root test indicates that the time series variable, per capita income (PCY), capital (K), and trade dispute (TDT) were not found to reject the null hypothesis "no stationary" at level i.e. the series are integrated of order of one  $I(1)$ . However, work stoppage (WSP), workers involved (WIV) and man-day lost (MDL) is stationary at level i.e. integrated at order zero  $I(0)$ . The cointegration test of all the variables reveals that there is long-run relationship among all the variables.

Empirical result revealed that capital, work stoppage and workers involved have positive

influence on socio-economic development in Nigeria. It means that the amount of work stopped as well as worker involved in the process has no implication on per-capita income. This explains the business nature of Nigerian economy which is largely characterized by informal settings as most National strike actions do not always affect their activities. The study also reported that trade dispute and man-day lost are found to exert negative effect on socio-economic development measured by per capita income in Nigeria. In addition, the result shows that the estimated parameter for capital, trade dispute and work stoppage were found to be partially statistically significant on per capita income at 0.05 critical level as workers involved found statistically significant at 10% significance level. Thus, man-day lost was statistically insignificant at both levels. The Granger causality test result shows a bi-causal relation exists between capital and per capita income, as other industrial unrest factors were found to have no causal relation with welfarism in Nigeria. Government should promptly review, negotiation and implement agreements entered with workers most especially involving wage improvement and general working conditions. More so, organizations must always be prepared for the occurrences of conflict and be able to tolerate and contain them with reasonable bounds.

### References

- Aigbokhaevbolo, O. M. (2010). *Implementing Change Efforts in Nigerian Organizations*. In Benin Journal of Social Sciences, Benin City: Faculty of Social Sciences University of Benin. Vol. 8 and 9 (1 and 2).
- Ajala, E. M. (2003). The influence of peace education on labour-management relations in selected industries in Oyo State, Nigeria. Ph.D Thesis. Dept. of Adult Education, University of Ibadan, Oyo, Nigeria.
- Akeem, A. (2011). Labour Reform and Industrial Conflicts Mismanagement in Nigeria. Paper Prepared for Presentation at The Sixth IIRA African Regional Congress of Industrial

- Relations: Emerging Trends in Employment Relations in Africa: National and International Perspectives.
- Akpala, A. (1991). *Industrial Relations Model for Development Countries*. The Nigeria System Enugu Fourth Dimension Publisher.
- Akume, A. and Abdullahi, Y. (2013). Challenges and Prospects of Effective Industrial Conflict Resolution in Nigeria. *Journal of Social Science*, 36(2), pp. 199-208.
- Alimba, C. N. (2008). The place of peace education in achieving the Millenium Development Goals in Nigeria. *Journal of Educational Research and Policies*. Vol. 3, no.1, pp. 21-26.
- Armstrong, E. (1969). *Industrial Relations: Introduction* London; George Harrap Co. Ltd.
- Aspinall, E. (2007). The construction of grievance. *Journal of Conflict Management*, 51 (6), pp. 950-972.
- Awe, A. & Ayeni, R. (2013). Empirical Investigation into Industrial Relations and National Productivity in Nigeria. *European Journal of Business and Management*, 5(8), pp. 45-55.
- Boschini, A. (2002). *Macroeconomic: Growth Theory*, 2.
- Constantino, O., Cathy, A., & Merchant, O. (1995). *Conflict management systems design: A guide to creating healthy and productive organization*. San Francisco: Jossey Books.
- Coser, L. (1956). *The functions of social conflict*. Glencoe: Free Press.
- Damach, K. (1990). *Class and class Conflict in Industrial Society*. London: Routledge and Kegan Paul.
- Dike, V. (2005). "Reward Systems, Worker Morale and Productivity." Africa Economic Analysis available on internet [www.AfricaEconomicAnalysis.org](http://www.AfricaEconomicAnalysis.org): Nigeria society at the dawn of the 21st century.
- Edinyang, S. & Ubi, I. (2013). Effect of Strike Action on Human Development among Social Studies Secondary School Students in Uyo Local Government Area of Akwa Ibom State, Nigeria.
- Edwards, P. K. (2000). Industrial conflict. In M. Poole and M. Warner (eds.). *The Handbook of Human Resources Management*. London: International Business Press.
- Ezeagba, E. (2014). Effects of Strike Cost on Economic Development in Nigeria. *An International Journal of Arts and Humanities (IAH)*, 3(3), pp. 26-34.
- Fasoyin, T. (1989). *Industrial Relations in Nigeria*. 1st Edition. Lagos: Longman.
- Fashoyin, T. (2009). *Industrial Relations in Nigeria Lagos: Longman Nigeria*.
- Fisher, R., d Ury, W. & Brett, O. (2004). *Getting to Yes: Negotiating agreement without giving in*. Boston: Houghton Mifflin.
- Gani A. (2013). Were on Strike Because of Government Insincerity. *Morning Sunrise Channels Television* - 1st July, 2013.
- Hammed, T. A. & Ayantunji, O. A. (2002). The effect of Six thinking hats in enhancing the conflict-handling behaviour of selected trade union leaders in Lagos State. *Nigerian Journal of Applied Psychology* vol. 7, no.1, pp 19-26.
- Henisz, W. J., Zelner, B. A. & Guillén, M. F. (2005). The worldwide diffusion of market-oriented infrastructure reform, 1977-1999. *American Sociological Review*, 70 (6), pp. 871-897.
- Honeyball, S. & Bowers, J. (2004). *Textbook on Labour Law* (Oxford: Oxford University Press, 2004), p. 389.
- Ige, A.K. (1998). An Empirical Study of the factors influencing Industrial Strikes in Nigeria (1970 - 1995). A thesis submitted to the Department of Economics, Obafemi Awolowo University, Ile-Ife. September, 1998.

- Ige, K. Adeyeye, F. & Aina, S. (2011). An empirical study of the factors influencing Industrial Conflicts in Nigeria (1980-2010). *European Journal of Humanities and Social Sciences* Vol. 10(1), pp. 423-440.
- Issa-Fagee (2013). Morning Sunrise-ASUU President Explain Reasons for Strike. *Channels Television* - 1<sup>st</sup> July, 2013
- Itaimson, L. & Tilly, C. (1989)(eds.). *Strikes, Wars and Revolutions in an International Perspective*. Cambridge: Cambridge University Press, pp. 81.
- Koyonda, S. O. (1999). "Enforcement of Collective Agreements in Nigeria: Need for Legislative Intervention". *Nigerian Law and Practice Journal*, 3(2), pp. 37.
- Lederach, J. P. (1995). *Preparing for peace: conflict transformation across cultures*. Syracuse: Syracuse University Press.
- Mansell, R. & Wehn, U. (1998). *Knowledge Societies: Information Technology for Sustainable Development*. New York: Oxford University Press.
- News Express (2013). 2009 Agreement Not Solution to Varsity Crisis —Intersociety. Retrieved from <http://www.newsexpressngr.com/news/detail.php?news=2921&title=2009-AGREEMENT-NOT-SOLUTION-TO-VARSITY-CRISIS-%E2%80%94Intersociety&scid=46>
- Oghenekaro, O. (2013). Nigerian University lecturers Commence Indefinite Strike. *Channels Television* - 1st July, 2013.
- Ojielo, M. O. (2002). *Managing organizational conflict: a system approach*. Ibadan: John Archers (Publishers) Ltd.
- Okene, O. (2010). Collective Bargaining, Strikes and the Quest for Industrial Peace in Nigeria.
- Otite, O. (2001). On conflicts, their resolutions, transformation and management. In O. Otite and I. O. Albert (eds). *Community conflict in Nigeria: Management, Resolution and Transformation*. Lagos: Spectrum Books Ltd.
- Owoseni, O. (2011). An Examination of Some Determinants of Industrial Conflict in Employee-Employer Relationship. Pp. 1-18.
- Osamwonyi, I. & Ugiagbe, E. (2013). Harmonious Industrial Relations as a Panacea for Ailing Enterprises in Nigeria. *Journal of Asian Scientific Research*, 3(3), pp. 229-246.
- Radin B. (2007). The instruments of intergovernmental management. In: BP Guy, J Pierre (Eds.): *The Handbook of Public Administration*. London: Sage Publications Limited, pp. 365-376.
- Schumpeter, Joseph & Backhaus, Ursula, (2003). The Theory of Economic Development. In Joseph Alois Schumpeter. pp. 61–116.
- Sen, A. (1983). Development: Which Way Now? *Economic Journal*, Vol. 93 Issue 372. pp. 745–762.
- Wordofa, D. (2008). *Violent conflicts: Key obstacles for sub-Saharan Africa to achieving the millennium development goals – Where is the evidence?*, Paper presented at the international conference on peace and security in Africa, Hilton Hotel, Addis Ababa, Ethiopia, February, 20 – 23.
- World Bank (2007). *Millennium development goals: Confronting the challenges of gender equity and fragile states*. Washington DC: World Bank.
- Yesufu, T. M. (1983). *The Nigeria experience the dynamics of industrial relations*: Badam University press Ltd.
- Yesufu, T. M. (1984). Dynamics of industrial Relations: The Nigerian Experience. University Press Ltd., Ibadan, Nigeria; pp. 72.
- Yesufu, T. M. (2000). "Trade Unions and Industrial Relations" Human Factor in National Development: Nigeria. Isted., Benin City, and Ibadan, University of Benin Press and Spectrum Books Limited.