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Effect of Labour Welfare on Economic Output in Nigeria

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ABSTRACT

This study examines the effect of labour welfare on economic output in Nigeria from 1990 to 2020. It explores how investments in worker well-being influence productivity and overall economic growth. Using relevant time series data, the study uses the Ordinary Least Squares (OLS)and Error Correction model techniques to assess the impact of key welfare components on national output. Findings reveal that improved welfare leads to higher productivity, but inefficient spending and structural challenges hinder optimal results. The study highlights the need for targeted policies that enhance welfare programs, ensure efficient resource allocation, and foster sustainable economic growth. It concludes with policy recommendations to strengthen labour welfare and drive economic progress.

ملخص

تتناول هذه الدراسة أثر رفاه العمال على الناتج الاقتصادي في نيجيريا خلال الفترة من 1990 إلى 2020، وتستكشف كيف تؤثر الاستثمارات في رفاهية العمال على الإنتاجية والنمو الاقتصادي العام. باستخدام بيانات السلاسل الزمنية ذات الصلة، تعتمد الدراسة على أسلوبي المربعات الصغرى العادية (OLS) ونموذج تصحيح الخطأ (ECM) لتقييم تأثير مكونات الرفاه الرئيسة على الناتج القومي. كشفت النتائج أن تحسين الرفاه يؤدي إلى زيادة الإنتاجية، إلا أن ضعف الكفاءة في الإنفاق والتحديات الهيكلية تحول دون تحقيق النتائج المثلى. توصي الدراسة بضرورة تبني سياسات مستهدفة لتعزيز برامج الرفاه، وتحسين تخصيص الموارد، وتعزيز النمو الاقتصادي المستدام، مع اقتراحات عملية لصنّاع السياسات لتعزيز رفاه العمال ودفع عجلة التنمية

RÉSUMÉ

Cette étude examine l'impact du bien-être des travailleurs sur la production économique au Nigeria entre 1990 et 2020. Elle explore comment les investissements dans le bien-être des travailleurs influencent la productivité et la croissance économique globale. À l'aide de données chronologiques pertinentes,

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l'étude utilise les techniques du modèle des moindres carrés ordinaires (OLS) et de la correction des erreurs pour évaluer l'impact des principaux éléments du bien-être sur la production nationale. Les résultats révèlent que l'amélioration du bien-être entraîne une augmentation de la productivité, mais que des dépenses inefficaces et des défis structurels empêchent d'obtenir des résultats optimaux. L'étude souligne la nécessité de mettre en place des politiques ciblées qui renforcent les programmes de bien-être, garantissent une allocation efficace des ressources et favorisent une croissance économique durable. Elle se termine par des recommandations politiques visant à améliorer le bien-être des travailleurs et à stimuler le progrès économique.

Keywords: Labour welfare, Economic output, productivity

JEL Classification: J28, O40, J30, J80, E24

1. Introduction

Nigeria, as Africa's most populous nation and one of its largest economies, continues to face significant challenges in translating its abundant human capital into sustainable economic growth. Despite a large labor force, the country grapples with low productivity, widespread underemployment, and persistently poor working conditions. Many workers, especially in the informal sector, lack access to basic welfare provisions such as healthcare, social protection, decent wages, and safe workplaces. These conditions not only undermine worker morale and health but also reduce overall economic efficiency and output. Moreover, Nigeria's productivity levels have remained stagnant or declined in key sectors, in part due to inadequate investment in labor welfare. Understanding the relationship between labor welfare and economic performance is, therefore, essential. By exploring this link, the study can provide evidence-based insights for policymakers and employers seeking to improve labor outcomes and, ultimately, drive more inclusive and sustainable economic development in Nigeria. Many related studies adopted basic economic growth models or welfare economics frameworks that primarily focus on short-term labor costs and output. In contrast, this study applies Human Capital Theory, which views labor welfare not just as a cost but as a long-term investment in human productivity. By framing welfare as a form of capital accumulation, this study shifts the focus from expenditure to returns on investment in human resources. Again, Nigeria's labor market is marked by a large informal sector, skill mismatch, and limited access to welfare services. Applying

Human Capital Theory in this context helps the study to highlight how investing in labor welfare can improve both formal and informal sector performance, offering a relevant framework for tackling systemic issues in Nigeria's economy

Labour welfare extends beyond basic entitlements such as fair wages and reasonable working hours, encompassing a wider range of factors that enhance employees' work environments—both physically and psychologically. Facilities like canteens, transportation, rest areas, and recreational spaces contribute to employee satisfaction and overall productivity. A well-structured, supportive work environment fosters a sense of security, motivation, and commitment, which translates into stronger employee engagement and improved organizational performance.

Increasingly, employers, trade unions, and policymakers recognize that employee well-being is integral to business success. Labour welfare, as emphasized by the International Labour Organization (ILO), plays a crucial role in improving job satisfaction, reducing stress, and enhancing morale factors directly linked to productivity. Modern workforce expectations, particularly among younger employees, now include mental health support, flexible work arrangements, and career development opportunities. Organizations that invest in these areas report lower absenteeism, reduced turnover, and increased output (Isham et al., 2021; Adebayo et al., 2021).

Economically, labour welfare is a powerful driver of growth. Workers with access to comprehensive welfare programs are more productive, creative, and loyal, leading to better business outcomes and national economic gains. Conversely, the absence of such programs can result in poor health, low morale, and decreased efficiency, undermining both firm-level performance and broader economic stability. Research consistently shows that employee engagement and financial performance are positively correlated in organizations that prioritize welfare (Williams et al., 2021; Ogunkoya et al., 2023).

Occupational health and safety remain central components of welfare policy. Ensuring a safe workplace is both a legal duty and a strategic imperative. According to the National Safety Council (2022),

organizations that prioritize health and safety report fewer accidents, reduced insurance costs, and higher productivity.
Beyond individual organizations, labour welfare is vital for national development. Governments that invest in robust welfare frameworks foster a healthier, more resilient workforce key to achieving sustained economic growth. OECD studies highlight that economies prioritizing human capital through welfare initiatives benefit from reduced unemployment and improved living standards.

The evolving work landscape, shaped by globalization, digitalization, and demographic shifts, calls for adaptive welfare strategies. The COVID-19 pandemic underscored this need, as firms with strong employee support systems demonstrated greater resilience and engagement (Deloitte, 2021). As remote and hybrid work models grow, welfare programs must be reimagined to support mental health, work-life balance, and digital inclusion. Labour welfare is increasingly linked to Corporate Social Responsibility (CSR). Companies that integrate welfare into their CSR strategies not only enhance their public image but also gain a competitive edge in talent attraction and retention. Porter and Kramer (2020) argue that welfare-driven CSR can lead to both higher profitability and long-term sustainability.

This study expands our understanding of the relationship between labour welfare and economic output by employing a more nuanced analytical model that captures both short-term and long-term effects; an approach that is often overlooked in existing literature. While many previous studies have focused on immediate outcomes, such as changes in output or productivity following welfare interventions, they often fail to account for the long-run impact of sustained investments in human capital. By integrating time-sensitive dynamics into the analysis such as through autoregressive distributed lag (ARDL) model, this study is able to distinguish between transitory responses and lasting structural effects**.**

In the short term, improvements in labour welfare may reduce absenteeism, increase job satisfaction, and boost worker morale, which can lead to immediate gains in productivity. In the long term, however, welfare measures such as access to healthcare, continuous training, education, and safe work environments contribute to a more skilled, healthier, and resilient workforce, which enhances output capacity and innovation over time. By capturing this dual impact, the study not only deepens our

theoretical and empirical understanding of how labor welfare contributes to economic growth but also provides richer insights for policymakers and employers. It helps answer critical questions about the timing and sustainability of returns on welfare investments, which is crucial for designing effective labor and economic development policies in Nigeria. The study employs Human Capital Theory that offers a compelling conceptual basis for examining labour welfare as an economic driver, with the ARDL model providing a robust empirical tool to analyze its dynamic effects over time. Together, they form a coherent framework that aligns perfectly with the research question, offering both theoretical justification and methodological precision in assessing the impact of labour welfare on Nigeria's economic output.

Despite growing awareness of the relationship between labour welfare and economic output, a significant knowledge gap remains particularly in developing countries like Nigeria regarding the specific impact of welfare initiatives on productivity. Many Nigerian organizations prioritize profit over employee well-being, resulting in poor working conditions, limited health and safety measures, and inadequate support systems. These shortcomings contribute to low morale, high turnover, and reduced productivity, ultimately hindering economic growth.

A key challenge is the lack of comprehensive data focused specifically on welfare programs, as most existing research emphasizes broader employment trends. Additionally, uneven implementation of welfare initiatives especially in the informal sector creates disparities that further limit economic progress. Many workers are also unaware of their rights, reducing the effectiveness of available programs. Yusof and Rahman (2018) provide evidence that welfare programs like healthcare, pensions, and skills development contribute to inclusive growth and job creation, underscoring the need for reform in Nigeria's informal and formal sectors.

Although labour welfare policies exist in Nigeria, weak enforcement allows employers to bypass standards. Economic pressures often lead firms to cut welfare investments, worsening employee insecurity and stress. In an increasingly competitive global environment, companies that neglect worker welfare risk declines in productivity, innovation, and talent retention. Moreover, the rise of remote and gig work presents new challenges in extending welfare benefits to non-traditional employees. Addressing these issues is essential for achieving inclusive, sustainable

economic development, as improved labour welfare can drive growth, reduce poverty, and enhance social stability.

2. Literature Review

Labor welfare programs play a crucial role in enhancing employee motivation, which directly influences overall productivity. By providing healthcare, job security, training, and work-life balance initiatives, these programs address employees' basic needs and foster an emotional connection to their work. Olujimi and Okafor (2024), Brown-Nelson (2024) found that employees with health benefits, pensions, and job security were more motivated and focused, reducing personal stress. Similarly, Adewale and Akinwale (2018) highlighted how monetary benefits like competitive salaries, bonuses, and non-monetary incentives such as career development boosted motivation in the Nigerian public sector.

Global theories support these findings. Herzberg's Two-Factor Theory propounded in 1959 emphasizes motivators like achievement, recognition, and personal growth as key factors for engagement. Vroom's Expectancy Theory in 1964 further suggests that employees are motivated when they believe their efforts will lead to desired rewards. The importance of psychological welfare, such as mental health support and work-life balance, is also emphasized by Hughes and Thomas (2019), and Deci and Ryan's Self-Determination Theory (1985) stresses that environments fostering autonomy and competence drive intrinsic motivation. Akinwale, Kuye and Akinwale (2023) and Akintoye (2008) note that addressing employee welfare needs in Nigerian industries enhances retention and motivation. Additionally, Maslow's Hierarchy of Needs (1943) suggests that when basic needs like financial security are met, employees can focus on higher-level goals, including self-actualization.

Welfare programs also contribute significantly to organizational productivity. Olujimi and Okafor (2024), found that health benefits and pensions in Nigerian manufacturing companies led to improved employee productivity, while Adewale and Akinwale (2018) demonstrated that public sector employees showed better productivity when offered competitive salaries and bonuses. Studies by Pfeffer (1998) and Huselid (1995) indicate that welfare initiatives such as profit-sharing and flexible

work arrangements enhance employee loyalty, reduce turnover, and improve organizational outcomes. Hughes and Thomas (2019) and Mordi, Ajonbadi and Adekoya (2023) stress that mental health and work-life balance initiatives lead to better employee efficiency, while Maslow's (1943) theory shows that meeting employees' basic needs allows them to focus on productivity.

Globally, welfare programs are recognized as drivers of economic growth. Adewale and Akinwale (2018), Olajide and Omotosho (2024) found that welfare initiatives like healthcare and skill development programs in Nigeria contribute to economic growth by improving employee health and motivation, which enhances productivity. Amartya Sen's 'Development as Freedom' (1999) supports this by highlighting that investments in health and education empower individuals, contributing to economic growth. Similarly, Lindert (2004) demonstrated that robust welfare systems in OECD countries led to higher GDP growth, with nations like Germany and Sweden out-performing others economically.

In Nigeria, welfare programs are linked to reduced unemployment and greater economic contributions. Akinwale, Kuye and Akinwale (2023) highlighted that job creation and training initiatives improve workforce quality, leading to increased productivity and economic growth. Bakir and Aysan (2019) also explored how social protection spending influences labour productivity and economic efficiency across developing countries. This supports the central thesis that targeted welfare interventions particularly in health and education which enhance productivity. A skilled, employed population boosts tax revenue, reduces dependency on social support systems, and stimulates consumer spending, which drives growth.

Welfare programs also foster innovation. Pfeffer (1998) notes that flexible working conditions and paid leave encourage creativity. Global companies like Google and Microsoft invest in employee welfare, which leads to innovations that drive economic progress. Maslow's theory further supports this, showing that when basic needs are met, employees can focus on achieving higher-order goals like creativity, benefiting industrial growth and national development. Singapore's investment in employee welfare, particularly in housing, education, and healthcare, transformed the nation's economy, illustrating how prioritizing worker welfare can elevate a developing country to global competitiveness.

Abdallah and Harb (2020) examined the linkage between human capital development and long-run economic growth in OIC member states. Their findings align closely with this paper's theoretical framework on labour welfare as a component of human capital and support the argument that welfare investments yield substantial long-term macroeconomic returns. On the other hand, neglecting welfare can lead to stagnant economic growth and social unrest, as seen in some developing nations.

In Nigeria, Nnamani, Ngoka, Okoye and Nwoke emphasized that adopting global best practices like universal healthcare, skill development, and employee pensions could foster a more robust workforce, improving individual well-being and industrial output. Adewale and Akinwale (2018) and Bedir (2016) further argued that these investments would lead to sustained national development and bring innovation that will bring robustness in firms. Labor welfare programs are also critical for job satisfaction, a key factor in employee retention and organizational performance. Programs that provide healthcare, housing, and educational benefits enhance overall job satisfaction. Adewale and Akinwale (2018), Adewale, Adeyemo and Lawal (2024), Agu and Odu (2018) found that Nigerian workers with welfare benefits reported higher satisfaction levels, reducing turnover and boosting morale. Similarly, Ojo et al (2022) noted that career development opportunities and financial incentives led to higher job satisfaction and reduced turnover in Nigerian manufacturing firms.

Studies like Locke's (1976) emphasize that welfare programs like paid leave and healthcare improve job satisfaction. Hofstede's (1980) cultural dimensions' theory suggests that welfare programs aligned with cultural values, such as collective healthcare in Nordic countries, lead to greater job satisfaction. Akinwale, Kuye and Akinwale (2023) also found that Nigerian employees with access to welfare benefits such as housing support and healthcare experienced higher job satisfaction, fewer absences, and improved performance. Global corporations like Google and Amazon invest heavily in employee welfare, leading to high job satisfaction and creativity. Scandinavian countries, known for strong welfare systems, also report higher job satisfaction levels.

Overall, labor welfare programs are essential for fostering job satisfaction, which is critical for employee motivation, engagement, and productivity. Local and global research underscores the importance of

these programs in creating a supportive, valued, and motivated workforce, benefiting both employees and the organizations they serve. This study focuses on how labor welfare impacts employee commitment and economic growth in Nigeria, demonstrating that effective welfare programs not only enhance individual performance but also strengthen organizational loyalty and contribute to positive economic outcomes.

3. Data and Methodology

The Human Capital Theory serves as the theoretical foundation emphasizing the pivotal role of investments in human resources such as education, healthcare, and welfare programs in driving economic growth. Human capital theory is complemented by Endogenous Growth Theory, which suggests that economic growth is driven by factors internal to the production process, such as technological innovation and human capital development and employs auto-distributed lag models to determine the long and short run effects.

The production function derived from these theories can be expressed as:

$$Y = A \times F(K, L, H)$$

Where:

Y, A, K, L and H represent economic output (GDP growth rate), total factor productivity, capital investment, labor input and human capital (labor welfare programs) respectively. This framework underscores that labor welfare programs, as components of human capital development, are not merely costs but investments that yield significant economic returns.

3.1 Model Specification

This study specifies the baseline model to examine the effect of labour welfare on economic output in Nigeria.

$$GDP = \beta_0 + \beta_1 WLF + \beta_2 EDU + \beta_3 HLTH + \beta_4 GFCF + \beta_5 RECEX + \mu$$

Where:

- GDP = Gross Domestic Product, representing the overall economic output.
- WLF = Labour Welfare, capturing various welfare measures that influence worker productivity and efficiency.

- EDU = Education, measured by government expenditure on education, representing human capital development.

- HLTH = Health, measured by government expenditure on healthcare, indicating the impact of health investment on workforce productivity.

- GFCF = Government Fixed Capital Formation, representing long-term investment in infrastructure and capital projects that contribute to economic growth.

- RECEX = Recurrent Expenditure, representing continuous government spending on wages, salaries, and other welfare-related expenditures.

- β_0, β_1, β_2, β_3, β_4, β_5 = Coefficients to be estimated, representing the relationship between each independent variable and GDP.

- μ = Error term capturing unobserved factors.

Labour welfare is included as a key explanatory variable to assess its role in improving economic output. Education and health expenditures reflect human capital investments that contribute to workforce efficiency. Government Fixed Capital Formation (GFCF) represents infrastructure investments that enhance economic productivity. Recurrent expenditure accounts for sustained government spending on public sector wages and welfare-related programs, which may influence economic growth.

3.1.1 Model Specification for Objective Two

To further analyze the impact of labour welfare components on economic growth, this study adopts the following model:

$$GDP = \beta_0 + \beta_1 HLTH + \beta_2 EDU + \beta_3 GFCF + \beta_4 RECEX + \mu$$

Where:

GDP = Gross Domestic Product, serving as a measure of economic growth.

HLTH = Health, measuring government investment in healthcare and its effect on economic output.

EDU = Education, reflecting the role of government spending on skill development and workforce quality.

GFCF = Government Fixed Capital Formation, representing investments in infrastructure and capital projects that support economic growth.

RECEX = Recurrent Expenditure, covering government operational spending, including salaries and social benefits.

β_0, β_1, β_2, β_3, β_4 = Coefficients to be estimated, representing the impact of each variable on GDP.

μ = Error term, accounting for unobserved influences on economic growth.

This model examines how labour welfare factors, alongside capital investment and government recurrent spending, contribute to economic expansion. The inclusion of healthcare, education, and government investment aligns with economic theories that emphasize the role of human capital and infrastructure in fostering sustainable growth.

3.1.1.1 Pre-estimation tests

Table 1: Unit roots test

Variable	**ADF @ level**		**ADF @ 1st difference**		**Order of integration**
	ADF Statistic	ADF Critical @ 5%	ADF Statistic	ADF Critical @ 5%	
GDP	-2.047215	-3.562882	-4.538431	-3.557759	I(1)
WLF	-1.699704	-4.273277	-9.061229	-3.557759	I(1)
EDU	-3.225196	-3.552973	-7.628177	-3.557759	I(1)
HLTH	-2.962960	-3.552973	-6.252401	-3.562882	I(1)
GFCF	-1.952832	-3.552973	-4.232589	-3.557759	I(1)
RECEX	-2.245989	-3.552973	-8.470695	-3.557759	I(1)

Source: Author's computation with results from E-views 10

As can be seen from the table, the ADF t-statistics of all the variables become greater than their corresponding 0.05 critical values only after their first difference is taken. Therefore, the null hypothesis of the test for all variables is rejected only after their first difference is taken, which implies that all the variables are stationary at first difference, or are integrated of the first order I (1).

Table 2: Johansen Co-Integration Approach

No. of CE(s)	Eigenvalue	Trace statistic	0.05 critical value	Probability
None*	0.785821	148.3525	117.7082	0.0002
At most 1*	0.728052	99.04231	88.80380	0.0075
At most 2	0.521089	57.37366	63.87610	0.1561
At most 3	0.391574	33.81395	42.91525	0.2971
At most 4	0.284730	17.91381	25.87211	0.3497
At most 5	0.201253	7.190758	12.51798	0.3250

Source: Author's computation with results from Eviews 10

A critical look at the results in table 3 above shows that there are at least two cointegrating equations between the variables in the model. These cointegrating equations exist at the first and second equations where the probability values are 0.0002 and 0.0075 respectively. Overall there exists the presence of a long-run relationship in the variables. Therefore, it is safe to estimate a long-run as well as an error correction model using the variables (Engle & Granger, 1987).

Table 3: OLS long-run and Error Correction Model (ECM) results
Dependent variable: logGDP

Variable	Coefficient	Std. Error	t-statistic	Probability
Long-run Results				
logWLF	0.105072	0.029786	3.527508	0.0015
logEDU	0.065057	0.0580339	1.120912	0.2718
logHLTH	0.190111	0.054440	3.492137	0.0016
logGFCF	-0.201155	0.031155	-6.456628	0.0000
logRECEX	0.015894	0.034816	0.456505	0.6515
C	9.107887	0.129573	70.29181	0.0000
Short-run and ECM Results				
ΔlogWLF	0.042996	0.021063	2.041286	0.0515
ΔlogEDU	0.025075	0.03584	0.819879	0.4197
ΔlogHLTH	0.052344	0.030615	1.709734	0.0992
ΔlogGFCF	-0.116758	0.046683	-2.501111	0.0190
ΔlogRECEX	-0.009450	0.02240	-0.419275	0.6785
RESID01(-1)	-0.429177	0.135382	-3.170124	0.0039
R-squared	0.964519			
Adjusted R^2	0.958183			
F-statistic	152.2301			
Prob(F-statistic)	0.000000			

Source: Author's computation with results from Eviews 10.

4 Empirical Results

Economic and Statistical criteria.

- *Labour Welfare (logWLF / ΔlogWLF):* *Labour welfare has a positive and statistically significant impact on economic output in the long run, with a coefficient of 0.1051 and a p-value of 0.0015, indicating that a 1% increase in labour welfare leads to a 0.11% increase in GDP. In the short run, the effect remains positive but is not statistically significant (p = 0.0515), suggesting that welfare interventions take time to influence output meaningfully.*

- Education Expenditure (*logEDU / ΔlogEDU*): *Government spending on education shows positive but statistically insignificant effects on GDP in both the short and long run (p-values = 0.2718 and 0.4197). This suggests that current investments in education are inadequate to generate significant productivity gains, potentially due to underfunding, misallocation, or systemic issues like brain drain and unemployment.*

- Health Expenditure (logHLTH / ΔlogHLTH): Health spending has a significant positive impact in the long run**,** with a coefficient of 0.1901 (p = 0.0016), meaning a 1% increase in health expenditure raises GDP by 0.19%. Although the short-run effect is also positive, it is not statistically significant (p = 0.0992), indicating that the full benefits of health investments accrue over time.

- Infrastructure Investment (logGFCF / ΔlogGFCF): Public infrastructure spending has a negative and statistically significant effect on GDP in both the long run (coefficient = -0.2012, p = 0.0000) and short run (coefficient = -0.1168, p = 0.0190). This suggests inefficiencies in capital investments such as abandoned or poorly managed projects are dragging down economic performance. These findings align with Abou-Zaid (2020), who notes the macroeconomic risks of ineffective public spending.

- Recurrent Expenditure (logRECEX / ΔlogRECEX): Recurrent government spending has a positive effect in the long run and a negative effect in the short run**,** though neither is statistically significant (p-values = 0.6515 and 0.6785). This implies short-term fiscal pressure, with long-term gains possible through tax returns or increased public service productivity, though not strong enough to yield measurable growth in this model.

Model Diagnostics:

- Constant/Intercept: The constant term (9.108) suggests that, even in the absence of the independent variables, output would continue to grow, driven by other factors not captured in the model.

- Error Correction Term (RESID01(-1))**:** The ECM term is negative and statistically significant (-0.4292), confirming the model's validity. It indicates that about 43% of deviations from equilibrium are corrected annually, meaning the system stabilizes over time.

- F-statistic: The model is highly statistically significant overall, with an F-statistic of 152.23 (p = 0.0000), affirming its suitability for economic inference.

- R-squared & Adjusted R-squared: The model explains 96.45% of the variation in GDP ($R^2 = 0.9645$), and the adjusted R^2 (0.9582) confirms a strong model
- fit with minimal overfitting.

4.1 Econometrics Criteria

Table 4: Post Estimation tests

Test measurement	**Probability value**
Normality Test: Jarque-Bera	0.550775
Autocorrelation Test: Breusch-Godfrey Serial Correlation LM Test	0.0017
Heteroscedasticity Test: Breusch-Pagan-Godfrey	0.7427
Specification Test: Ramsey RESET Test	0.3414

Source: Author's computation with results from Eviews 10

The table above shows the results of the residual diagnostics for normality, autocorrelation, and heteroscedasticity. The table also shows the test for errors in model specification. For normality of the residual term, the Jarque-Bera probability value (0.550775 > 0.05) suggests that the errors in the model are normally distributed. The Breusch-Godfrey serial correlation LM test probability value (0.0017 < 0.05) suggests the presence of serial autocorrelation in the residual term of the model. This problem is however corrected using the Newey West HAC option for robustfulness of the errors. The Breusch-Pagan-Godfrey probability value (0.7427 > 0.05) shows that the error term is homoscedastic. The

probability value of the Ramsey RESET test F-statistic (0.3414 > 0.05) indicates that the model is free from specification errors. By implication the model satisfies most of the assumptions of the classical linear regression. Therefore, the model is fit for economic and statistical inference.

Model Stability Diagnostics

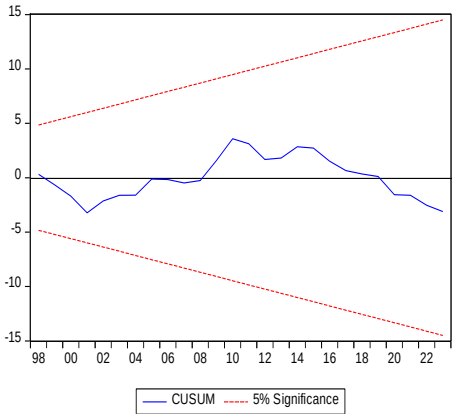

Figure 1

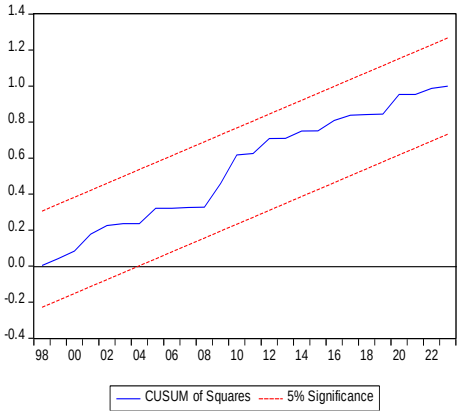

Figure 2

Figures 1 and 2 show the stability diagnostics of the model using the CUSUM and CUSUM of Squares graphs. Both graphs suggest that the model is stable since the sample paths of both the CUSUM and CUSUM of squares lie between the symmetric lines.

5 Conclusion

This study aims to assess the impact of labour welfare on Nigeria's economic output, alongside evaluating the roles of education, healthcare, infrastructure investment, and recurrent government spending. Specifically, it investigates how these variables labour welfare (WLF), education expenditure (EDU), health expenditure (HLTH), government fixed capital formation (GFCF), and recurrent expenditure (RECEX) interact with GDP, the dependent variable.

To examine these relationships, the study employs econometric techniques, including unit root testing (Augmented Dickey-Fuller), Johansen cointegration, and Ordinary Least Squares (OLS) regression. Pre-estimation tests confirm that all variables are integrated at the first

difference. The Johansen test identifies a long-run equilibrium relationship among the variables.

OLS results reveal that labour welfare (WLF) has a positive and statistically significant long-run effect on GDP: a 1% increase in WLF leads to a 0.11% rise in GDP. Health expenditure (HLTH) also shows a significant positive long-run effect, while education (EDU) and recurrent expenditure (RECEX) are not statistically significant in either time frame. Surprisingly, government fixed capital formation (GFCF) exhibits a negative effect on GDP in both the short and long run.

The Error Correction Model (ECM) indicates a 43% annual adjustment rate toward equilibrium, suggesting moderate correction speed of economic imbalances. The model is robust, with an R-squared of 0.9645, meaning that 96% of GDP variation is explained by the included variables. Post-estimation diagnostics confirm normality, homoscedasticity, and correct model specification, though serial correlation was corrected using robust standard errors.

This study examined the effect of labor welfare (WLF) on economic growth in Nigeria between 1990 and 2024. It found that labor welfare has a positive and statistically significant impact on economic growth, with a 1% increase in labor welfare leading to a 0.11% increase in GDP. However, education (EDU) and health (HLTH) spending had a less significant effect, with education showing no statistical significance and health showing marginal significance. The study also revealed that government fixed capital formation (GFCF) has a negative long-term impact on economic growth, with a 1% increase in infrastructure spending resulting in a 0.20% decrease in GDP. Recurrent expenditure (RECEX) showed positive long-term effects but did not significantly affect economic growth in the short term. The results emphasize the importance of managing inflation and government spending efficiently. A stable macroeconomic environment, supported by policies that improve labor welfare, education, healthcare, and infrastructure, can foster sustainable economic growth.

Policy Implications and Projections

The findings underscore the economic importance of labour welfare, particularly through healthcare and education, as catalysts for growth. It is estimated that improvements in welfare could boost GDP growth by 3–5% annually, with healthcare and education contributing 1–2% each and infrastructure 1–2%. Conversely, neglecting labour welfare could reduce GDP by 1–2% per year, driven by declines in productivity and workforce health.

Ultimately, the study highlights that aligning fiscal policy with human capital development is key to unlocking Nigeria's growth potential. The robustness of the econometric model supports the reliability of these findings and provides a solid foundation for evidence-based policymaking aimed at inclusive and sustainable development.

Policy Recommendation

To enhance labour welfare and stimulate economic growth, the government should increase investment in programs that directly support worker well-being. This includes expanding access to health insurance, pensions, housing support, and fair wages not only for formal employees but also for the large informal workforce. Inclusive welfare coverage fosters a healthier, more motivated labour force and strengthens economic resilience.

Investing in education is equally vital, as it equips workers with the skills needed to adapt to changing industries and drive productivity. Similarly, strengthening healthcare systems ensures a healthier population, reducing absenteeism and boosting workforce efficiency. Infrastructure development particularly in transportation and energy should also be prioritized, with an emphasis on transparency and accountability to ensure impactful economic outcomes in Nigeria.

References

Abdallah, K., & Harb, N. (2020). Human Capital and Economic Growth in the OIC Countries. Journal of Economic Cooperation and Development, 41(3), 1–24.

Abou-Zaid, A. (2020). Public Expenditure Efficiency and Economic Performance in Developing Countries. Journal of Economic Cooperation and Development, 41(4), 59–84.

Adebayo, A., Oduntan, O. O., Fasola, B. O., & Adebisi, B. S. (2021). Psychological stress of covid-19 and teacher job performance in Ogun State, Nigeria. UNILAG Journal of Curriculum and Instruction, 2(1), 142-152.

Adewale, A. A., Adeyemo, A. A., & Lawal, S. B. (2024). Effect of employee's satisfaction on performance of Nigerian microfinance banks. The Journal of VN Karazin Kharkiv National University. Series: International Relations. Economics. Country Studies. Tourism, (19), 36-46.

Akinwale, O. E., Kuye, O. L., & Akinwale, O. E. (2023). Trajectory of brain-drain and quality of work-life amongst Nigeria's university lecturers: academic staff union of universities (ASUU) incessant strike in retrospect. International Trade, Politics and Development, 7(2), 115-137.

Agu, C. E., & Odu, E. S. (2018). The impact of employee welfare schemes on productivity: Evidence from Nigerian firms. Journal of Economics and Social Studies, 7(4), 45–62.

Akintoye, I. R. (2008). Reducing unemployment through the informal sector: A case study of Nigeria. European Journal of Economics, Finance and Administrative Sciences, 11, 97–106.

Bakir, C & Aysan, A.F. (2019). Social Protection Expenditures and Economic Growth: Evidence from Developing Economies. Journal of Economic Cooperation and Development, 40(2),75-98.

Bedir, S. (2016). Healthcare expenditure and economic growth in developing countries. Advances in economics and business, 4(2), 76-86. Maslow, A. H. (1943). A theory of human motivation. Psychological Review, 50(4), 370–396.

Brown-Nelson, D. (2024). Relationship Between Job Satisfaction and Turnover Intention Among Nonprofit Employees (Doctoral dissertation, Valdosta State University).

Deloitte. (2021). Labour welfare and organizational performance in post-pandemic times. Deloitte Insights.

Engle, R. F., & Granger, C. W. J. (1987). Cointegration and error correction: Representation, estimation, and testing. Econometrica, 55(2), 251-276.

Gallup. (2022). The effect of employee engagement on economic productivity. Gallup Press.

Hassan, K. I., Fatile, J., & Hunga, O. V. (2023). Work ethics as a hallmark of employees' productivity in the public sector: a study of ojo local government, Lagos state, Nigeria. BVIMSR Journal of Management Research, 15(2).

Herzberg, F. (1966). Work and the nature of man. World Publishing.

Hughes, R., & Thomas, D. (2019). The role of social welfare programs in employee motivation. Journal of Organizational Behavior, 24(3), 119-131.

International Labour Organization. (2019). Labour welfare: Improving workplace conditions. International Labour Organization.

Isham, A., Mair, S., & Jackson, T. (2021). Worker wellbeing and productivity in advanced economies: Re-examining the link. Ecological Economics, 184, 106989.

Mordi, C., Ajonbadi, H. A., & Adekoya, O. D. (Eds.). (2023). Employee relations and trade unions in Africa: a critical approach. Springer Nature.

National Safety Council. (2022). The business case for workplace safety and health. National Safety Council.

Nnamani, K. E., Ngoka, R. O., Okoye, K. M., & Nwoke, H. U. (2024). The Nigerian state and the realities of managing COVID-19 pandemic: whither political restructuring and economic diversification? African Identities, 22(2), 366-387.

Ogunkoya, O., Adebayo, A., & Soremekun, O. (2023). Effect of Knowledge Management (KM) on Organization Performance in Nigerian Manufacturing Sector. Modern Management Review, 28(3), 45-61.

Ojo, T. J., Adelowokan, O. A., Adebiyi, M. A., Omojuwa, O., & Egbukichi, E. O. (2022). Institutional Quality and Environmental Degradation Linkage: Asymmetric Approach for Nigeria. Journal of Economics and Policy Analysis, 7(2), 15-34.

Olujimi, V. A., & Okafor, E. E. (2024). Employee motivation through financial and non-financial incentives: insights from a Nigerian business process outsourcing firm. African Journal of Social and Behavioural Sciences, 14(6).

Olajide, O. S., & Omotosho, O. E. (2024). An examination of the causal relation between unemployment, economic growth and poverty in Nigeria (1980-2020). UMYUK Journal of Economics and Development (UJED), 1(1), 19-36.

Porter, L. W., Steers, R. M., Mowday, R. T., & Boulian, P. V. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. Journal of Applied Psychology, 59(5), 603–609.

Williams, A., Johnson, B., & Smith, C. (2021). The impact of labour welfare on productivity. Journal of Economic Studies, 28(4), 456-472.

World Health Organization. (2020). Healthy work environments and employee well-being. World Health Organization.

Yusof, M., & Rahman, N. A. (2018). Social Protection and Employment Generation in Developing Economies: A Panel Data Analysis. Journal of Economic Cooperation and Development, 39(2), 25–50.