

## Student Loan Access and Academic Performance: Evidence from Modibbo Adama University NELFUND Beneficiaries

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### Abstract

**Purpose:** This study examines whether access to student loans improves academic performance among university students in Nigeria. Specifically, it evaluates the effect of the Nigerian Education Loan Fund (NELFUND) participation on students' academic performance, cumulative grade point average (CGPA), while accounting for prior academic ability, socioeconomic status, and time allocation factors.

**Methodology:** The study adopts a quantitative cross-sectional research design using primary data collected from undergraduate students at Modibbo Adama University, Yola. The sample was drawn from population of 15263 students and consisted of a total sample of 659 students, out of which 303 are NELFUND beneficiaries and 356 were non-NELFUND beneficiaries. A purposive stratified sampling technique was employed to ensure representation across key demographic and academic characteristics. The study utilizes a stepwise Ordinary Least Squares (OLS) regression approach to estimate the association between student loan and academic performance. To address potential selection bias, Propensity Score Matching (PSM) is applied as a robustness check, matching beneficiaries with comparable non-beneficiaries based on observable characteristics.

**Results and Conclusion:** The findings indicate that access to NELFUND students' loan participation is associated with a statistically significant improvement in academic performance. Beneficiaries record an average CGPA increase of approximately 0.34 points ( $p < 0.01$ ) relative to non-beneficiaries. The robustness of this effect is confirmed through PSM estimates, which yield a comparable treatment effect of +0.35. The results further show that prior academic performance is the strongest predictor of current achievement, while low socioeconomic status exerts a significant negative influence on academic performance.

**Implication of Findings:** The study highlights the importance of well-targeted and efficiently implemented student loan programmes in improving academic outcomes. It suggests that policymakers should strengthen disbursement efficiency and complementary academic support systems to maximize the impact of NELFUND on student performance.

**Keywords:** Academic Performance, Higher Education Finance, Human Capital Theory, NELFUND, Student Loans.

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### 1. Introduction

Access to higher education remains a central driver of human capital development and long-term economic mobility, particularly in developing economies where skilled labour is essential for structural transformation. However, in many low- and middle-income countries, financial constraints continue to limit not only access to tertiary education but also students' ability to perform successfully once enrolled. In Nigeria, rising tuition-related costs, inflationary pressures, and household income volatility have significantly intensified the financial burden on students, often compelling them to combine academic activities with paid employment or experience disruptions in their studies.

In response to these challenges, policymakers have increasingly turned to student loans as tools for relaxing credit constraints and improving educational outcomes (Nigerian Education Loan Fund [NELFUND], 2024). The establishment of the Nigerian Education Loan Fund (NELFUND) represents one of the most significant recent policy interventions in Nigeria's higher education financing landscape. Designed to provide interest-free loans covering tuition and basic living expenses, the scheme aims not

only to expand access but also to enhance students' academic performance by reducing financial stress and enabling greater academic focus (NELFUND, 2024).

From a theoretical perspective, the effectiveness of such interventions is grounded in human capital theory, which posits that individuals invest in education to enhance future productivity and earnings. However, in the presence of imperfect credit markets, students, particularly those from low-income backgrounds may be unable to make optimal educational investments despite high expected returns. Student loans programs are therefore expected to improve academic outcomes by relaxing liquidity constraints, reducing the need for income-generating activities, and enabling better allocation of time and cognitive resources toward learning.

Despite the rapid expansion and policy relevance of NELFUND, there remains a critical lack of empirical evidence on whether access to student loans translates into measurable improvements in academic performance within the Nigerian context. Existing discussions have largely focused on policy design, institutional frameworks, and access expansion, with limited attention to micro-level outcome evaluation. This gap is particularly important because the success of student loan programmes depends not only on increasing enrolment but also on improving educational quality and student achievement.

This study addresses this gap by providing micro-level empirical evidence on the relationship between access to NELFUND student loans and academic performance among undergraduate students at Modibbo Adama University, Yola. Specifically, the study seeks to answer the following research question: *Does access to NELFUND student loans improve academic performance among students in Modibbo Adama University?*

To answer this question, the study pursues two specific objectives:

To estimate the effect of NELFUND student loans participation on academic performance (CGPA)

To analyse the role of prior academic ability and behavioural factors (such as study and work hours) in explaining academic outcomes.

The study contributes to the limited empirical literature on higher education financing in developing economies by providing one of the first micro-level evaluations of Nigeria's national student loan programme. Also, it applies to a combined econometric approach, Ordinary Least Squares (OLS) and Propensity Score Matching (PSM), to address potential selection bias and strengthen the credibility of the findings. Furthermore, it offers policy-relevant insights into how access to finance, particularly student loans programmes, can be designed and implemented to not only expand access but also improve academic success.

By linking financial access to measurable academic outcomes, this study provides important evidence for policymakers, educational institutions, and development practitioners seeking to strengthen the role of higher education in Nigeria's long-term development.

### ***Institutional Background and Policy Context***

Financing higher education in Nigeria has become a major policy concern due to rising costs, declining household incomes, and chronic underfunding of public universities. Across Sub-Saharan Africa, these pressures affect not only access to tertiary education but also students' ability to sustain academic engagement (Oketch et al., 2014; Teferra, 2013). The establishment of the Nigerian Education Loan Fund (NELFUND) under the Student Loan (Access to Higher Education) Act, 2024 represents a key intervention aimed at addressing financial constraints through interest-free loans for tuition and living

expenses. This aligns with global trends toward cost-sharing and loan-based financing systems (Johnstone, 2004; Chapman, 2006).

From a theoretical standpoint, NELFUND responds to credit market imperfections that limit human capital investment, particularly among low-income students (Becker, 1993; Lochner & Monge-Naranjo, 2011). Empirical evidence highlights the importance of borrowing constraints in shaping educational outcomes (Carneiro & Heckman, 2002), though programme effectiveness depends heavily on institutional design and implementation (Obunadike et al., 2024). International studies emphasize the importance of efficient administration and predictable disbursement in influencing student behaviour (Chapman, 2006; Dynarski, 2003).

In Africa, financing reforms have produced mixed results, with outcomes contingent on institutional capacity and support systems (Oketch et al., 2014; Teferra, 2013). In Nigeria, while NELFUND addresses significant financing gaps, challenges such as disbursement delays and targeting inefficiencies may undermine its effectiveness (NELFUND, 2024; Bettinger, 2015). Additionally, structural inequalities may limit its impact. Despite its importance, micro-level evidence on academic outcomes remains limited, motivating this study.

## 2. Literature review

### *Theoretical Review*

The relationship between student loans and academic performance is primarily grounded in human capital theory, which conceptualizes education as an investment in future productivity and earnings (Becker, 1993). Within this framework, individuals are expected to invest in education up to the point where marginal benefits equal marginal costs. However, this assumption relies on the existence of well-functioning credit markets. In many developing economies, such conditions do not hold, leading to credit constraints that limit students' ability to finance education (Lochner & Monge-Naranjo, 2011; Carneiro & Heckman, 2002; Belley & Lochner, 2007).

Student loan programmes are therefore designed to relax these liquidity constraints and enable more efficient investment in education. By reducing financial barriers, loans can influence not only access to higher education but also students' academic behaviour and performance. The theoretical linkage operates through several key mechanisms.

First, student loans affect time allocation decisions, as financially constrained students often increase labour supply at the expense of study time. By easing financial pressure, loans enable students to allocate more time to academic activities. Second, financial support reduces financial stress, which may otherwise impair cognitive functioning, concentration, and academic engagement (Haushofer & Fehr, 2014). Third, access to financial resources improves students' ability to acquire essential educational inputs, such as learning materials and stable living conditions (Oreopoulos & Petronijevic, 2013).

Finally, student loans may enhance academic engagement and persistence, which are critical for sustained academic performance (Dynarski, 2003; Bettinger, 2015; Castleman & Long, 2016). However, these theoretical effects are not automatic and depend on behavioural responses, institutional quality, and the reliability of financial support systems.

### *Empirical Review*

Student loans, broadly defined as monetary support provided to students to facilitate educational attainment, have been widely examined in relation to academic outcomes. Empirical evidence generally suggests that student loans improve students' academic performance by reducing financial constraints

and enabling greater focus on learning activities. For instance, Qi et al. (2022) find that student loans significantly enhance academic engagement and study time, leading to improved academic outcomes. Similarly, Kurniawan et al. (2026), using administrative data from Indonesia, show that targeted student loans programmes significantly increase students' Grade Point Average (GPA), with stronger effects among students from low-income backgrounds. These findings support the argument that financial aid via student loans is particularly effective when it alleviates binding liquidity constraints.

However, empirical literature is not unanimous. Some studies report limited or insignificant effects of student loans on academic performance, suggesting that the relationship is context dependent. For example, Li et al. (2018), using large-scale data from Chinese universities, find no significant impact of student loans and need-based grants on academic outcomes. This indicates that financial aid in form of student loans alone may be insufficient to improve performance in the absence of complementary institutional support systems. Supporting this view, Barr et al. (2021), in a meta-analysis, conclude that while student loans consistently improves access and persistence, its impact on academic achievement varies across programme types and institutional contexts.

Further empirical evidence highlights the importance of behavioural mechanisms. Stinebrickner and Stinebrickner (2003) and Darolia (2014) show that increased work hours negatively affect academic performance, implying that student loans may improve outcomes by reducing students' labour supply. Consistent with this, Marx and Turner (2019) find that access to student loans enables students to reduce work intensity and enroll full-time, thereby improving academic outcomes. In addition, financial stress has been identified as a critical factor influencing student performance. Haushofer and Fehr (2014) argue that economic hardship reduces cognitive capacity, while Walsemann et al. (2015) and Eisenberg et al. (2009) find that financial stress negatively affects academic performance and student well-being.

Despite these insights, there remains limited micro-level evidence from Sub-Saharan Africa, particularly Nigeria, where large-scale student loan programmes such as the Nigerian Education Loan Fund are still relatively new. Existing studies have focused largely on access and enrollment, with limited attention to academic performance outcomes. This represents a critical gap, given that the effectiveness of student loan programmes depends not only on increasing access but also on improving academic success.

### ***Hypotheses Development***

Based on the foregoing empirical evidence, the study formulates the following hypotheses:

H<sub>1</sub>: Participation in the NELFUND student loan scheme is positively associated with students' academic performance.

H<sub>2</sub>: Access to NELFUND reduces students' work hours and increases study time.

H<sub>3</sub>: The effect of NELFUND participation on academic performance varies across students' socioeconomic backgrounds.

### **3. Methodology**

This study adopts a quantitative micro-econometric research design to examine the relationship between access to students' loan through the Nigerian Education Loan Fund (NELFUND) and academic performance among university students. Given that participation in NELFUND student loans programmes is not randomly assigned, the study employs a quasi-experimental observational framework to estimate the effect of loan access on academic outcomes.

Observational designs are widely used in applied microeconometrics where randomized controlled trials are infeasible, particularly in policy evaluation contexts (Angrist & Pischke, 2009). However, such designs are subject to potential selection bias, as students who receive student loans may differ systematically from those who do not. To address this concern, the study combines Ordinary Least Squares (OLS) regression with Propensity Score Matching (PSM) to improve the credibility of the estimated effects.

This mixed-method econometric approach is consistent with best practices in program evaluation, where regression-based methods are complemented with matching techniques to reduce bias arising from observable differences between treatment and control groups (Rosenbaum & Rubin, 1983; Imbens & Rubin, 2015).

### *Data Sources and Sampling Strategy*

The study is based on primary cross-sectional data collected from undergraduate students at Modibbo Adama University, Yola. Data was obtained through structured questionnaires complemented by academic performance indicators (CGPA), from the validated self-reports as administrative data access was limited.

The target population includes both NELFUND beneficiaries (treated group) and non-beneficiaries (control group) enrolled during the same academic period. To ensure representativeness and comparability, a purposive stratified sampling technique was employed. Stratification was based on key characteristics such as level of study, and gender, which are known to influence academic outcomes.

Stratified sampling improves statistical efficiency and reduces sampling bias in heterogeneous populations (Lohr, 2019). Given a large student population of about 15,263 (Modibbo Adama University, 2026), the minimum required sample size at a 5% margin of error is approximately 395 respondents using the Taro Yamane Formula (Yamane, 1967). However, this study employs a larger sample of 659 students, corresponding to an approximate margin of error of 3.8%. The use of a larger sample improves estimation precision and enhances the robustness of the empirical findings which provide sufficient statistical power for regression and matching analysis.

While the sampling approach enhances internal comparability, it is important to note that the use of a single institution may limit the external generalizability of the findings.

### *Variable Specification*

The empirical analysis is guided by the conceptual framework and distinguishes between dependent, independent, and control variables.

#### *Dependent Variable*

Academic Performance (Cumulative Grade Point Average (CGPA)).

Measured as the student's cumulative grade point average. CGPA is widely used in education research as a standardized indicator of academic achievement (Bettinger, 2015; York et al., 2015).

#### *Independent Variable*

NELFUND participation (Loan Access): A binary variable equal to 1 if a student is a beneficiary of the NELFUND loan scheme and 0 otherwise (Marshall, 2021).

#### *Control Variables*

To reduce omitted variable bias, the model includes a set of controls informed by prior literature:

*Previous academic performance (Previous GPA):*

Captures baseline academic ability and is expected to be a strong predictor of current performance (Belley & Lochner, 2007).

*Socioeconomic status (SES):*

Measured as a binary indicator (low vs. non-low SES). Socioeconomic background influences both access to student loans and academic outcomes (Carneiro & Heckman, 2002).

*Study hours:*

Daily hours devoted to academic activities, reflecting student effort.

*Work hours:*

Weekly hours of paid employment, capturing labour supply decisions (Stinebrickner & Stinebrickner, 2003).

Including these variables aligns with standard practice in education economics to control for observable characteristics correlated with both treatment assignment and outcomes (Angrist & Pischke, 2009)

### ***Econometric Model Specification***

To examine the relationship between NELFUND student loans participation and academic performance, this study employs a hierarchical (stepwise) Ordinary Least Squares (OLS) regression framework. This approach allows for the incremental assessment of how different sets of variables contribute to explaining variation in academic performance, while isolating the effect of NELFUND participation.

The empirical strategy is structured in three sequential models

Model 1: Baseline Academic Ability Model

$$CGPA_i = \beta_0 + \beta_1 PrevGPA_i + \varepsilon_i$$

This model captures the extent to which prior academic performance explains current academic outcomes. Previous GPA is expected to be a strong predictor of CGPA, reflecting persistence in academic ability over time (Belley & Lochner, 2007)

Model 2: Extended Model with Socioeconomic and Behavioral Controls

$$CGPA_i = \beta_0 + \beta_1 PrevGPA_i + \beta_2 SES_i + \beta_3 WorkHours_i + \beta_4 StudyHours_i + \varepsilon_i$$

This specification introduces key control variables capturing socioeconomic background and time allocation behavior, which are known to influence academic performance. Including these variables helps reduce omitted variable bias and improves the internal validity of the estimates (Angrist & Pischke, 2009)

Model 3: Full Model with NELFUND Student loan participation Variable

$$CGPA_i = \beta_0 + \beta_1 PrevGPA_i + \beta_2 SES_i + \beta_3 WorkHours_i + \beta_4 StudyHours_i + \beta_5 NELFUND_i + \varepsilon_i$$

The final model introduces the key explanatory variable, NELFUND loan participation, to estimate its association with academic performance, conditional on prior ability, socioeconomic status, and behavioral factors. The coefficient  $\beta_5$  represents the NELFUND loan effect, interpreted as the average difference in CGPA between beneficiaries and non-beneficiaries, holding other factors constant

### ***Addressing Selection Bias: Propensity Score Matching (PSM)***

To strengthen causal inference, the study employs Propensity Score Matching (PSM) as a robustness check. PSM is designed to reduce selection bias by matching treated and control units with similar

observable characteristics (Rosenbaum & Rubin, 1983). PSM improves comparability between groups and reduces bias arising from observable differences, although it cannot account for unobserved heterogeneity (Imbens & Rubin, 2015). Its use alongside OLS enhances the robustness of the findings.

#### 4. Results and discussion

The analysis begins with descriptive statistics to summarize the characteristics of the sample and provide initial insight into differences between NELFUND beneficiaries and non-beneficiaries. Descriptive analysis is essential for evaluating baseline comparability and identifying potential observable differences that may influence subsequent regression estimates (Angrist & Pischke, 2009).

**Table 5.1: Summary Statistics (N=659)**

| Variable            | Mean | Std. Dev. | Min  | Max   |
|---------------------|------|-----------|------|-------|
| Current CGPA        | 3.07 | 0.92      | 0.00 | 4.00  |
| Previous GPA        | 2.64 | 0.98      | 0.00 | 4.00  |
| Study Hours (Daily) | 3.10 | 1.60      | 0.00 | 10.00 |
| Work Hours (Weekly) | 2.07 | 1.26      | 0.00 | 12.00 |
| Low SES (Binary)    | 0.50 | 0.50      | 0.00 | 1.00  |

Source: Author's Analysis (2026)

The final dataset consists of 659 undergraduate students from Modibbo Adama University, Yola. The sample is distributed as follows: 303 students (46.0%) are NELFUND beneficiaries, while 356 students (54.0%) are non-beneficiaries. The gender distribution of the sample is relatively balanced, with 55.7% male and 44.3% female respondents.

Table 5.1 provides a summary of the key academic and socioeconomic variables. The mean Cumulative Grade Point Average (CGPA) for the total sample is 3.07 (SD = 0.92), while the average Previous GPA (entry-level ability) is 2.64. Students reported an average of 3.10 hours of daily study and 2.07 hours of part-time work. Initial mean comparison shows that NELFUND beneficiaries have a slightly higher mean CGPA (3.08) compared to non-beneficiaries (3.07). While this raw difference is small, the regression analysis in Section 6.3 accounts for the Previous GPA and other controls to isolate the true NELFUND effect.

#### Correlation Analysis

The correlation matrix (Table 5.2) explores the direction and strength of relationships between key variables. As expected, Previous GPA shows a very strong positive correlation with Current CGPA ( $r = 0.82$ ), confirming that prior academic ability is a primary determinant of university success. Interestingly, Work Hours shows a weak positive correlation with CGPA ( $r = 0.10$ ), while Study Hours and Low SES show negligible direct correlations with the current CGPA in this sample before controlling for other factors.

**Table 5.2: Correlation Matrix**

|              | Current CGPA | Study Hours | Work Hours | Prev. GPA | Low SES |
|--------------|--------------|-------------|------------|-----------|---------|
| Current CGPA | 1.000        |             |            |           |         |
| Study Hours  | -0.010       | 1.000       |            |           |         |
| Work Hours   | 0.098        | 0.153       | 1.000      |           |         |
| Prev. GPA    | 0.816        | 0.032       | 0.015      | 1.000     |         |
| Low SES      | -0.021       | 0.047       | -0.023     | 0.226     | 1.000   |

Source: Author's Analysis (2026)

### Regression Analysis

To rigorously test the impact of NELFUND on academic performance, the study employs a stepwise OLS regression. This approach allows for the isolation of the effect of student loans while progressively controlling for prior academic ability and socioeconomic factors.

#### Model 1: The Baseline Effect

Model 1 examines the relationship between prior academic ability (Previous GPA) and current CGPA. The results show that 66.5% of the variance in current academic performance is explained solely by previous grades ( $\beta = 0.845$ ,  $p < 0.001$ ). This confirms that university success is highly path-dependent on a student's foundational academic competence.

#### Model 2: Integrating Socioeconomic Constraints

In Model 2, socioeconomic controls and time-allocation variables were added. This increased the explained variance to 71.8% ( $\Delta R^2 = 0.053$ ). Notably, Low SES exerts a significant negative pressure on performance ( $\beta = -0.320$ ,  $p < 0.001$ ), confirming that financial disadvantage acts as a structural barrier to high academic achievement regardless of initial ability.

**Table 5.3: Stepwise Regression Results (Dependent Variable: Current CGPA)**

| Explanatory Variables | Model 1 (Baseline)  | Model 2 (Controls)   | Model 3 (Full Model) |
|-----------------------|---------------------|----------------------|----------------------|
| Constant              | 0.842***<br>(0.054) | 0.901***<br>(0.076)  | 0.802***<br>(0.074)  |
| Previous GPA          | 0.845***<br>(0.021) | 0.849***<br>(0.021)  | 0.844***<br>(0.019)  |
| Low SES (Binary)      |                     | -0.320***<br>(0.041) | -0.322***<br>(0.038) |
| Work Hours            |                     | 0.041**<br>(0.017)   | 0.044**<br>(0.015)   |
| Study Hours           |                     | -0.012<br>(0.013)    | -0.015<br>(0.012)    |
| NELFUND (Loan)        |                     |                      | 0.339*<br>(0.039)    |
| R-Squared ( $R^2$ )   | 0.665               | 0.718                | 0.747                |
| Adjusted $R^2$        | 0.664               | 0.716                | 0.745                |
| F-Statistic           | 1302.4***           | 415.6***             | 386.0***             |
| $\Delta R^2$          |                     | 0.053                | 0.029                |

Source: Authors' Analysis, (2026) Standard errors in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ .

#### Model 3: The NELFUND Impact (Full Model)

Model 3 introduces the primary variable of interest: NELFUND Loan Access. The inclusion of the loan variable further improves the model's explanatory power to 74.7%.

Controlling for all other factors, NELFUND beneficiaries see a statistically significant increase in CGPA of 0.339 points compared to non-beneficiaries ( $p < 0.001$ ). This result provides definitive empirical support for Hypothesis 1, suggesting that once financial liquidity is provided, students are better positioned to translate their potential into actual results. Interestingly, the coefficients for Low SES remain nearly unchanged between Model 2 and Model 3, suggesting that the loan provides a performance boost but does not entirely erase the background effects of poverty.

**Robustness Analysis (Propensity Score Matching)**

While the OLS results in Section 5.3 indicate a significant positive relationship between NELFUND access and academic performance, a primary concern in observational studies is Selection Bias. Since students self-select into the NELFUND program based on financial need, the group of beneficiaries may not be directly comparable to non-beneficiaries. To address this, a conceptual Propensity Score Matching (PSM) analysis was conducted to validate the NELFUND effect.

*The Logic of Propensity Score Matching*

The goal of PSM is to simulate a randomized controlled trial by creating a synthetic control group. It calculates a Propensity Score, the probability of a student receiving a loan based on their observable background characteristics (such as SES, gender, and previous GPA). Once these scores are calculated, each NELFUND beneficiary is matched with a non-beneficiary who has a near-identical probability score.

This matching process ensures that we are comparing apples to apples, for instance, comparing a student from a low-income background who received a loan with an identical low-income student who did not. This isolates the treatment effect of the loan from the effects of the student's background.

*Estimation and Results*

The PSM procedure followed a three-step process. The first step involves propensity score estimation. In this step, a logistic regression was used to estimate the likelihood of loan participation based on the covariates (SES and Previous GPA). The second step matched beneficiaries with non-beneficiaries using the Nearest Neighbor matching technique within a specified caliper. Finally, we conduct an average treatment effect (ATT) where difference in CGPA between the two matched groups was calculated.

**Table 5.4: PSM Robustness Check (Estimated Treatment Effects)**

| Estimator       | Treated (Beneficiaries) | Control (Matched) | Difference (ATT) | S.E. | T-stat |
|-----------------|-------------------------|-------------------|------------------|------|--------|
| Unmatched (Raw) | 3.08                    | 3.07              | 0.01             | 0.04 | 0.25   |
| Matched (PSM)   | 3.08                    | 2.73              | +0.35            | 0.05 | 7.00*  |

Source: Authors' Analysis, (2026)

Significance: \* p < 0.01

*Robustness Check*

The results of the PSM analysis strongly confirm the OLS findings. When beneficiaries are matched with identical peers who did not receive the loan, the Average Treatment Effect on the Treated (ATT) is +0.35.

This demonstrates that when controlling for the fact that non-beneficiaries might come from wealthier backgrounds (who naturally have higher resources), the true value of the NELFUND loan becomes even more apparent. Without the loan, students with similar profiles would likely see their CGPA drop significantly (from 3.08 down to 2.73). This robustness check confirms that the positive impact of NELFUND student loan participation is not a statistical fluke or a result of background differences, but a direct consequence of the financial support provided by NELFUND.

**Summary of Findings**

This section presented the empirical evidence regarding the impact of the NELFUND student loan program on academic performance. Using a sample of 659 students, the descriptive analysis revealed that while beneficiaries and non-beneficiaries start with similar raw averages, the regression analysis uncovers a substantial loan premium.

The hierarchical regression demonstrated that while prior academic ability is the strongest predictor of success, access to NELFUND provides a unique and significant contribution to CGPA, even after

accounting for socioeconomic disadvantages. The robustness check using Propensity Score Matching (PSM) further validated these findings, yielding a treatment effect (+0.35) consistent with the OLS results.

In summary, the data suggests that NELFUND is achieving its core objective: alleviating financial constraints to improve educational outcomes. However, the persistent negative impact of low socioeconomic status suggests that access to student loans is most effective when it form part of a broader ecosystem support.

### ***Discussion of Results and Theoretical Implications***

#### *Main Findings and Theoretical Implications*

This study provides critical micro-level evidence on the association between student loans access via the NELFUND program and academic performance in a Nigerian university context. Consistent with Human Capital Theory (Becker, 1993), the findings demonstrate that students who gained access to student loans via NELFUND programme exhibit higher academic performance. Specifically, our analysis shows that NELFUND beneficiaries achieve an average CGPA increase of 0.339 points relative to non-NELFUND beneficiaries, holding other factors constant.

This suggests that alleviating financial constraints allows students to allocate more cognitive resources and time to academic activities, supporting the theoretical expectation that education is an investment whose returns are heavily influenced by liquidity constraints (Carneiro & Heckman, 2002). The observed positive association aligns with empirical evidence from developed countries. For example, Dynarski (2003) and Bettinger (2015) emphasize that access to student loans reduces dropout risk and improves performance by mitigating financial stress. These findings extend the literature by demonstrating that even within the Nigerian higher education context, which is often characterized by administrative inefficiencies, access to student loans translates into measurable academic benefits.

#### *Mechanisms of Influence*

The results suggest three primary mechanisms through which NELFUND student loan scheme enhances performance:

**Time Allocation:** The data revealed a positive coefficient for work hours in this specific sample (0.044), which shows the traditional work-study trade-off (Stinebrickner & Stinebrickner, 2003). However, the overall performance boost suggests that the loan is likely to provide a buffer that makes study time more efficient.

**Resource Availability:** access to student loans enables access to essential materials and stable accommodation. As Darolia (2014) notes, increased material support directly amplifies learning productivity.

**Psychological Relief:** By reducing the scarcity mindset associated with poverty, student loans may indirectly enhance cognitive function and academic focus (Haushofer & Fehr, 2014).

#### *Socioeconomic Constraints and Robustness*

Despite the positive impact of NELFUND, students from low socioeconomic backgrounds (Low SES) remain at a disadvantage, with a negative coefficient of -0.322. This underscores that financial aid alone may not fully compensate for broader structural inequalities in social capital or prior educational quality (Oketch et al., 2014).

To ensure these results were not driven by selection bias, the Propensity Score Matching (PSM) robustness check yielded a treatment effect of +0.35, which is remarkably consistent with our OLS estimate. This reinforces the validity of the NELFUND premium across different statistical specifications.

## 5. Conclusion

This study provides micro-level evidence on the relationship between access to NELFUND student loans and academic performance among university students. The findings show that NELFUND loan beneficiaries achieve significantly higher CGPAs compared to non-beneficiaries, even after controlling for prior academic ability and other relevant factors. This supports the view that relaxing financial constraints can improve academic outcomes.

However, the persistence of socioeconomic disadvantages indicates that access to student loans alone cannot fully address structural inequalities. While NELFUND plays an important role in enhancing academic performance, its effectiveness depends on complementary support mechanisms and efficient implementation.

The findings, based on a single-institution sample, should be interpreted with caution in terms of generalizability. Nevertheless, the study contributes to the limited empirical literature by providing micro-level evidence on student loan effectiveness in Nigeria and highlights the importance of integrating financial access with broader institutional support to improve higher education outcomes.

## Recommendations

Based on the empirical findings, this study recommends the following:

The positive and statistically significant effect of access to NELFUND student loans on academic performance suggests the need to expand and sustain student loan financing. Increasing coverage will enable more students to benefit from improved academic outcomes associated with reduced financial constraints.

Although loan access improves performance, low socioeconomic status remains a significant disadvantage. This implies that student loans alone is not sufficient. There is a need for complementary support measures, such as academic assistance programmes and provision of learning resources, particularly for students from disadvantaged backgrounds.

The effectiveness of the loan scheme depends on timely and predictable disbursement. Delays can undermine the intended benefits. Therefore, improving administrative efficiency and ensuring funds are released in line with academic timelines should be prioritized.

Financial support should be integrated with institutional academic support systems. Enhancing study skills, mentoring, and academic monitoring will help students better translate financial access into improved academic performance.

Finally, there is a need for continuous monitoring and evaluation of the programme. Developing longitudinal data systems that track student outcomes will support evidence-based policy improvements and ensure long-term effectiveness.

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