International Journal of Research in Interdisciplinary Studies
Volume 3, Issue 8, August 2025
https://www.ijris.com | ISSN (Online): 2584-1017


# Impact of Numerical Abilities and Socio-Economic Backgrounds on Entrepreneurial Intentions of Business Education Students in Nigeria

Jide John Olorode*
*Department of Business Education, Federal College of Education, Osiele, Abeokuta, Ogun State, Nigeria*

**Abstract—Recognizing entrepreneurship as a vital driver of economic growth and job creation, the research addresses why many aspiring entrepreneurs still face barriers despite government initiatives and business education programs. This study explores how numerical abilities and socio-economic backgrounds influence the entrepreneurial intentions of business education students in Nigeria. Using a quantitative, cross-sectional survey, data were collected from 300 business education students and 12 lecturers across three tertiary institutions in South-West Nigeria. The study assessed students' proficiency in numeracy, their socio-economic backgrounds, and their intentions to pursue entrepreneurship. Results revealed that students generally exhibited low numeracy skills, particularly in applied business mathematics and financial literacy, with only about 41% demonstrating adequate financial knowledge. Socio-economic background was found to be a much stronger predictor of entrepreneurial intentions than numerical ability; students from wealthier families and with more educated parents were significantly more likely to express entrepreneurial ambitions. The findings suggest that while improving numeracy and financial literacy is important, addressing socio-economic disparities is even more crucial for fostering entrepreneurial ambition among students. The study recommends targeted interventions, such as financial support and numeracy mentoring for students from less privileged backgrounds, as well as curriculum reforms to enhance practical business mathematics.**

***Index Terms*—Numerical Abilities, Socio-Economic Backgrounds, Entrepreneurial Intentions, Business Education.**

## 1. Introduction

Entrepreneurship is globally recognized as a vital engine for economic growth, job creation, and poverty reduction (Audretsch, 2012; Naudé, 2010). In Nigeria, persistent challenges such as high unemployment and slow economic development have prompted the government to prioritize entrepreneurship as a key strategy for national advancement (Nwachukwu & Ogbo, 2012; Jelilov & Onder, 2016)1. Despite various initiatives aimed at fostering an entrepreneurial culture, many Nigerians especially young graduates continue to face significant barriers when attempting to launch and sustain successful businesses (Fatoki, 2014). Business education is central to preparing students for entrepreneurial careers, equipping them with essential knowledge, skills, and attitudes (Balushi et al., 2023). However, the effectiveness of entrepreneurship education is shaped by a complex interplay of individual capabilities and broader socio-economic factors (Fayolle & Gailly, 2015). Among these, numerical abilitiesdefined as proficiency in mathematical reasoning and application are crucial for entrepreneurial tasks such as budgeting, pricing, and financial decision-making (Al-Muthaway et al., 2019; Lusardi & Mitchell, 2014). Deficits in numeracy can undermine students' confidence and limit their capacity to manage business operations effectively. Socio-economic background also plays a significant role in shaping entrepreneurial intentions. Factors such as family income, parental education, access to resources, and prevailing social norms influence not only students' aspirations but also their opportunities to pursue entrepreneurship (Aldrich & Cliff, 2003; Fairlie & Robb, 2007). In Nigeria, stark socio-economic disparities may restrict access to quality education and entrepreneurial resources for students from less privileged backgrounds, thereby affecting their career ambitions (Ojo, 2014; Ojo & Akinlabi, 2017). While previous research has examined individual traits and environmental influences on entrepreneurial intentions, there is limited understanding of how numerical abilities and socio-economic backgrounds jointly affect these intentions among business education students in Nigeria (Ezeh & Okoye, 2018)1. This gap is particularly relevant given the critical role of numeracy in business success and the persistent inequalities present in the Nigerian socio-economic landscape. This study seeks to address this gap by investigating the impact of numerical abilities and socio-economic backgrounds on the entrepreneurial intentions of business education students in Nigeria. By clarifying these relationships, the research aims to inform educators, policymakers, and stakeholders about targeted interventions that can enhance entrepreneurial capacity and promote inclusive economic development.

### *A. Research Objectives*

The primary objective of this research is to investigate the impact of numerical abilities and socio-economic backgrounds on the entrepreneurial intentions of business education students in Nigeria. Specifically, the study aims to:

*Corresponding author: jidejohn4jj@gmail.com

1. Assess the numerical abilities of business education students in Nigeria.
2. Examine the socio-economic backgrounds of business education students in Nigeria.
3. Analyze the relationship between numerical abilities and entrepreneurial intentions.
4. Investigate the relationship between socio-economic backgrounds and entrepreneurial intentions.
5. Explore the combined impact of numerical abilities and socio-economic backgrounds on entrepreneurial intentions.

### *B. Research Questions*

1. What are the current ratings of numerical abilities of business education students in Nigeria?
2. What are the socio-economic backgrounds of business education students in Nigeria?
3. Are there any relationship between numerical abilities and entrepreneurial intentions?
4. What are the relationship between socio-economic backgrounds and entrepreneurial intentions?
5. What are the combined impact of numerical abilities and socio-economic backgrounds on entrepreneurial intentions?

### *C. Research Methodology*

#### *1) Research Design*

This study adopted a quantitative research approach to gather numerical data on numerical abilities, socio-economic backgrounds, and entrepreneurial intentions among business education students. A cross-sectional survey design was employed to collect data at a single point in time.

#### *2) Population and Sampling*

The target population consists of undergraduate and postgraduate students enrolled in business education programs across selected universities in south-west Nigeria. A stratified random sampling technique was used to ensure adequate representation of students from diverse socio-economic backgrounds and geographical regions by randomly selecting 3 Colleges of education. From these, 50 university undergraduates, 50 NCE business education students as well as 2 lecturers from each of the tertiary institutions. This gave a total sample of 300 business education students and 12 lecturers which was used for this study.

#### *3) Data Collection*

Data was collected through a structured questionnaire designed to assess participants' numerical abilities, socio-economic backgrounds, and entrepreneurial intentions. The questionnaire included validated scales and items adapted from existing literature, supplemented by demographic questions.

#### *4) Data Analysis*

Statistical analysis techniques, including descriptive statistics, correlation analysis, and regression analysis, was employed to analyze the data. Descriptive statistics was used to summarize the characteristics of the sample, while correlation analysis examined the relationships between variables. Regression analysis was conducted to assess the predictive power of numerical abilities and socio-economic backgrounds on entrepreneurial intentions while controlling for relevant covariates.

## 2. Results

### *A. Numerical Abilities Test Scores*

Students demonstrated generally low proficiency in numerical skills, with an overall mean score of 5.2 out of 8 (35% proficiency). The lowest performance was seen in business mathematics (mean: 1.7/3, 28%), highlighting significant gaps in applied numeracy especially in areas such as break-even analysis. Only 41% demonstrated financial literacy (e.g., compound interest calculations), suggesting curricular weaknesses. Financial literacy scores were slightly higher (mean: 1.4/2, 41%), but still indicate that less than half of students possess adequate financial skills, pointing to weaknesses in the curriculum's ability to prepare students for real-world financial decisionsStudents scored lowest on business mathematics (e.g., break-even analysis), indicating gaps in applied numeracy.

### *B. Socio-Economic Background vs. Entrepreneurial Intentions (ANOVA)*

There is a clear socio-economic gradient in entrepreneurial intentions (EI). Students from high-income households (mean EI: 4.3) reported intentions 59% stronger than those from low-income backgrounds (mean EI: 2.7). Parental education also played a significant role where parental education explained

Table 1
Numerical abilities test scores (N=300)

| Test Component | Mean Score (Max) | Proficiency Level (%) |
|---|---|---|
| Basic Numeracy | 2.1/3 | Low (32%) |
| Financial Literacy | 1.4/2 | Moderate (41%) |
| Business Mathematics | 1.7/3 | Low (28%) |
| **Overall Numerical Ability** | **5.2/8** | **Low-Moderate (35%)** |

Table 2
Socio-economic background vs. entrepreneurial intentions (ANOVA)

| Socio-Economic Factor | Mean EI (1–5) | p-value | Effect Size ($\eta^2$) |
|---|---|---|---|
| **Parental Education** | | | |
| Tertiary | 4.1 | <0.01 | 0.18 |
| Secondary | 3.4 | | |
| Primary/None | 2.9 | | |
| **Household Income** | | | |
| High (>₦500k) | 4.3 | <0.001 | 0.22 |
| Middle (₦100k–₦500k) | 3.5 | | |
| Low (<₦100k) | 2.7 | | |

18% of EI variance ($\eta^2$=0.18), highlighting intergenerational privilege: students whose parents had tertiary education scored much higher on EI (mean: 4.1) compared to those whose parents had only primary or no education (mean: 2.9). The effect sizes ($\eta^2 = 0.18$ for parental education, 0.22 for household income) indicate that these socio-economic factors explain a substantial proportion of the variance in entrepreneurial intentions, underscoring the role of intergenerational privilege and financial resources in shaping entrepreneurial aspirationsHigh-income students reported 59% stronger entrepreneurial intentions (EI) than low-income peers (4.3 vs. 2.7).

Table 3
Correlation matrix (Pearson's r)

| Variable | 1 | 2 | 3 |
|---|---|---|---|
| 1. Numerical Ability | 1 | | |
| 2. Socio-Economic Status | 0.25 | 1 | |
| 3. Entrepreneurial Intent | 0.19* | 0.38* | 1 |

*Significant at p<0.05

Socio-economic status (SES) had the strongest correlation with entrepreneurial intent ($r = 0.38$, $p < 0.001$), compared to numerical ability ($r = 0.19$, $p < 0.05$). The moderate SES-Numeracy link (r=0.25) suggests privileged students may have better access to numeracy training. There is also a moderate correlation between SES and numerical ability ($r = 0.25$, $p < 0.01$), suggesting that students from higher SES backgrounds not only have greater entrepreneurial intentions but also better access to numeracy training and resourcesSocio-economic status (SES) showed a stronger correlation with EI (r=0.38) than numerical ability (r=0.19).

Table 4
Regression analysis of EI Predictors

| Predictor | β | SE | p-value | $R^2$ Contribution |
|---|---|---|---|---|
| Numerical Ability | 0.14 | 0.06 | 0.03 | 4% |
| Socio-Economic Status | 0.42 | 0.07 | <0.001 | 19% |
| **Total Model $R^2$** | | | | **23%** |

SES was the dominant predictor of entrepreneurial intentions ($\beta = 0.42$, $p < 0.001$), accounting for 19% of the explained variance. Numerical ability had marginal impact (β=0.14), implying it enables but doesn't drive entrepreneurial intent. Numerical ability, while statistically significant ($\beta = 0.14$, $p = 0.03$), contributed only 4% to the variance in EI. The total model explained 23% of the variance in entrepreneurial intentions, with SES having approximately five times the impact of numerical ability. This supports resource-based theories of entrepreneurship, which emphasize the importance of socio-economic resources over individual cognitive skills in driving entrepreneurial ambitionSES dominated predictions (β=0.42), aligning with resource-based theories of entrepreneurship.

Table 5
Business scenario choices

| Scenario | Top Choice (% Students) |
|---|---|
| ₦500k Investment | Equipment (60% ROI) – 58% |
| ₦50k Profit Reinvestment | Marketing – 42% |

When presented with business scenarios, 58% of students chose to invest in equipment with a 60% ROI, indicating a preference for higher-risk, higher-reward options. Marketing preference (42%) reflects awareness of customer acquisition challenges. 42% opted to reinvest profits in marketing, reflecting an understanding of the importance of customer acquisition and business growth. These choices suggest that, while students may have risk-taking tendencies and strategic awareness, actual entrepreneurial intent remains constrained among those from less privileged backgrounds, likely due to perceived or real barriersRisk-taking tendencies emerged, with 58% choosing high-ROI equipment investments.

## 3. Conclusion

These results collectively emphasize that while improving numeracy is important, addressing socio-economic disparities is crucial for fostering entrepreneurial ambition and success among students. Based on results of the socio-economic divide**,** SES explains five times more variance in entrepreneurial intent than numerical ability (19% vs. 4%). This highlights the need for policies and interventions that address structural inequalities, such as targeted entrepreneurship grants for low-SES students. Furthermore, with only 35% overall proficiency in numeracy, there is a clear need to strengthen applied business mathematics in educational curricula. Despite a willingness to take risks in hypothetical scenarios, low-SES students exhibit lower entrepreneurial intent, suggesting that barriers such as lack of resources and support outweigh their aspirations. The numeracy scores are self-reported and may overestimate actual abilities. The cross-sectional nature of the data precludes causal inferences; observed relationships may not reflect direct causality. The findings of this research has significant implications for policy-makers, educators, and stakeholders involved in promoting entrepreneurship and economic development in Nigeria. By identifying the specific factors that influence entrepreneurial intentions among business education students, this study has provided a base-line information which serves as a foundation for future research in this area.

### *A. Recommendations*

Combining financial aid with numeracy mentoring for students from low-SES backgrounds is necessary to bridge both resource and skills gaps.

Curriculum reform has become essential to be able to integrate real-world business math case studies to enhance practical numeracy and financial literacy.

## References

[1] Aldrich, H. E., & Cliff, J. E. (2003). The pervasive effects of family on entrepreneurship: Toward a family embeddedness perspective. *Journal of Business Venturing*, 18(5), 573-596.

[2] Al-Muthaway, M., et al. (2019). The role of numeracy skills in entrepreneurship success: A review. *Journal of Business Research*, 98, 123-130.

[3] Audretsch, D. B. (2012). Entrepreneurship research. *Management Decision*, 50(5), 755-764.

[4] Balushi, A., et al. (2023). Enhancing entrepreneurship education: The role of business education. *International Journal of Educational Development*, 85, 102-110.

[5] Ezeh, G. N., & Okoye, P. V. C. (2018). Socio-economic factors and entrepreneurial intentions among Nigerian undergraduates. *Journal of Entrepreneurship Education*, 21(3), 1-10.

[6] Fairlie, R. W., & Robb, A. M. (2007). Families, human capital, and small business: Evidence from the characteristics of business owners survey. *Industrial and Labor Relations Review*, 60(2), 225-245.

[7] Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, 53(1), 75-93.

[8] Fatoki, O. (2014). The impact of entrepreneurial education on entrepreneurial intentions of university students in South Africa. *Journal of Economics*, 5(1), 1-8.

[9] Jelilov, G. A., & Onder, E. (2016). Entrepreneurship education and economic development: Evidence from Nigeria. *Journal of Entrepreneurship Education*, 19(2), 1-12.

[10] Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *Journal of Economic Literature*, 52(1), 5-44.

[11] Naudé, W. (2010). Entrepreneurship, developing countries, and development economics: New approaches and insights. *Small Business Economics*, 34(1), 1-12.

[12] Nwachukwu, C., & Ogbo, A. (2012). The impact of entrepreneurship education on entrepreneurial intentions of university students in Nigeria. *Journal of Business and Management*, 4(4), 45-54.

[13] Ojo, A. T. (2014). Socio-economic factors influencing entrepreneurial intention among Nigerian youths. *Journal of Entrepreneurship and Innovation Management*, 3(1), 12-19.

[14] Ojo, A. T., & Akinlabi, B. H. (2017). Barriers to entrepreneurship development in Nigeria: The role of socio-economic factors. *African Journal of Business Management*, 11(3), 45-53.