



BEHAVIORAL ECONOMICS IN THE CLASSROOM: TEACHING STUDENTS TO ADDRESS COGNITIVE BIASES IN FINANCIAL DECISION-MAKING

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Abstract

Cognitive biases significantly influence financial decision-making, often leading to suboptimal outcomes in personal and professional contexts. This study evaluates the effectiveness of incorporating behavioral economics principles into the classroom to teach secondary school students in Enugu State, Nigeria, how to recognize and mitigate cognitive biases in financial decision-making. A 10-week intervention was implemented with 180 students across two schools, integrating interactive lessons on biases such as anchoring, loss aversion, and overconfidence, alongside practical exercises like budgeting simulations and investment scenarios. A quasi-experimental design compared the intervention group to a control group receiving standard Economics Education. Quantitative results revealed a 41% improvement in bias identification accuracy and a 35% enhancement in rational decision-making skills among the intervention group. Qualitative feedback from students and Educators indicated increased confidence in financial planning and heightened awareness of psychological influences. Challenges included limited access to digital tools for simulations and the need for teacher training in Behavioral Economics. This study highlights the potential of Behavioral Economics Education to empower students with critical financial literacy skills, advocating for its integration into curricula while addressing resource and training barriers.

Keywords: Behavioral Economics, Cognitive Biases, Financial Decision-making, Financial Literacy.

Introduction

Financial decision-making is a critical life skill, yet it is often undermined by cognitive biases systematic errors in thinking that distort rational judgment (Kahneman, 2011). These biases, such as anchoring, loss aversion, and overconfidence, lead individuals to make suboptimal choices in budgeting, saving, and investing, with long-term consequences for personal and societal economic well-being (Thaler & Sunstein, 2008). In Educational settings, traditional Economics curricula emphasize theoretical models of rational choice, often neglecting the psychological factors that shape real-world financial behavior (Bazerman & Moore, 2013). Behavioral Economics, which integrates insights from psychology and Economics, offers a framework to address these gaps by teaching individuals to recognize and mitigate cognitive biases (Ariely, 2008).

The need to equip young people with financial literacy skills is particularly pressing in developing economies like Nigeria, where economic volatility and limited access to financial education exacerbate poor decision-making (Odean, 1998; Lusardi & Mitchell, 2014). Secondary school students, at a formative stage of cognitive and financial development, are an ideal target for interventions that foster critical thinking about financial choices (Mandell, 2008). Recent studies underscore the efficacy of behavioral Economics in enhancing financial literacy among adolescents by addressing psychological barriers to rational decision-making (Lührmann et al., 2015; Amagir et al., 2020). For instance, interventions incorporating experiential learning, such as simulations and scenario-based exercises, have been shown to improve students' ability to identify biases and make informed choices (Heinberg et al., 2014).



In Nigeria, financial Education is often limited to basic budgeting and savings concepts, with little attention to the psychological underpinnings of decision-making (Okeke & Okeke, 2020). This gap is particularly evident in Enugu State, where resource constraints and traditional teaching methods dominate secondary Education (Udeh & Eze, 2022). Integrating behavioral Economics into the classroom offers a promising approach to empower students with the tools to navigate complex financial landscapes. This study evaluates a 10-week intervention designed to teach secondary school students in Enugu State, Nigeria, how to recognize and mitigate cognitive biases in financial decision-making, contributing to the growing body of literature on behavioral Economics Education (Besharat et al., 2021; Thaler, 2016).

Literature Review

Behavioral economics challenges the classical economic assumption of Homo economicus, positing that individuals are predictably irrational due to cognitive biases (Kahneman & Tversky, 1979). Anchoring, the tendency to rely heavily on initial information when making decisions, can lead to distorted financial judgments, such as overpaying for goods based on an initial price quote (Tversky & Kahneman, 1974). Loss aversion, the preference for avoiding losses over acquiring equivalent gains, often results in risk-averse behaviors that hinder wealth accumulation (Kahneman & Tversky, 1991). Overconfidence, where individuals overestimate their knowledge or abilities, frequently leads to excessive risk-taking in investments (Barber & Odean, 2001). These biases are particularly pronounced in financial contexts, where decisions involve uncertainty and long-term consequences (Shefrin, 2000).

Educational interventions targeting cognitive biases have gained traction in recent years. Lührmann et al. (2015) found that short-term financial Education programs incorporating behavioral insights improved adolescents' savings behavior by 15%. Similarly, Amagir et al. (2020) demonstrated that interactive workshops on financial biases enhanced students' ability to critically evaluate investment options. Experiential learning, such as simulations and role-playing, has been identified as particularly effective in translating theoretical knowledge into practical skills (Heinberg et al., 2014). These findings align with Kolb's (1984) experiential learning theory, which emphasizes learning through concrete experiences and reflective observation.

In the African context, financial literacy programs are often constrained by resource limitations and a lack of teacher training (Okeke & Okeke, 2020). Udeh and Eze (2022) noted that Nigerian secondary schools rarely incorporate behavioral economics, focusing instead on rote learning of Economic principles. However, pilot programs in other developing nations, such as Kenya and South Africa, have shown that integrating behavioral insights into curricula can enhance financial decision-making skills among youth (Carpena et al., 2019). These studies underscore the need for context-specific interventions that address both psychological and structural barriers to financial literacy.

Recent literature highlights the importance of tailoring behavioral Economics Education to cultural and socioeconomic contexts (Besharat et al., 2021). In Nigeria, where financial scams and economic instability are prevalent, teaching students to recognize biases like overconfidence can



mitigate vulnerability to fraudulent schemes (Adebayo & Iweala, 2023). Moreover, integrating technology, such as digital budgeting tools, can enhance engagement, though access to such resources remains a challenge in many Nigerian schools (Okafor & Amoo, 2021). This study builds on these insights, evaluating the effectiveness of a behavioral economics intervention in a resource-constrained setting.

Methodology

Research Design

This study employed a quasi-experimental design with a pre-test and post-test framework to evaluate the effectiveness of a behavioral economics intervention. Two secondary schools in Enugu State, Nigeria, were selected: one urban (School A) and one semi-urban (School B). The intervention group (90 students) received a 10-week behavioral Economics curriculum, while the control group (90 students) received standard Economics Education.

Participants

The sample comprised 180 Senior Secondary 2 (SS2) students, aged 14–17 years, from two public secondary schools in Enugu State. Participants were selected using stratified random sampling to ensure representation across gender and socioeconomic backgrounds. Table 1 presents the demographic characteristics of the participants.

Table 1

Demographic Characteristics of Participants

Variable	Intervention Group (n=90)	Control Group (n=90)
Gender		
Male	46 (51.1%)	44 (48.9%)
Female	44 (48.9%)	46 (51.1%)
Age		
14–15 years	38 (42.2%)	40 (44.4%)
16–17 years	52 (57.8%)	50 (55.6%)
Socioeconomic Status		
Low	50 (55.6%)	48 (53.3%)
Middle	36 (40.0%)	38 (42.2%)
High	4 (4.4%)	4 (4.4%)
School Location		
Urban (School A)	45 (50.0%)	45 (50.0%)
Semi-urban (School B)	45 (50.0%)	45 (50.0%)



Intervention

The 10-week intervention consisted of weekly 90-minute lessons delivered by trained Economics teachers. The curriculum covered key cognitive biases (anchoring, loss aversion, overconfidence) and their impact on financial decision-making. Lessons included:

- Interactive Lectures: Explaining biases using real-world examples (e.g., anchoring in price negotiations).
- Budgeting Simulations: Students allocated virtual funds to balance short-term and long-term financial goals.
- Investment Scenarios: Role-playing exercises where students made investment decisions under varying risk conditions.
- Reflective Discussions: Group discussions to reflect on personal experiences with biases.

The control group followed the standard Nigerian Economics curriculum, focusing on supply and demand, market structures, and basic financial literacy without behavioral Economics components.

Data Collection

Primary Method: Data were collected using a mixed-methods approach. Quantitative data were gathered through pre- and post-intervention tests assessing:

- Bias Identification Accuracy: A 20-item multiple-choice test evaluating students' ability to recognize anchoring, loss aversion, and overconfidence in financial scenarios (Cronbach's $\alpha = 0.82$).
- Rational Decision-Making Skills: A 15-item task-based assessment requiring students to make budgeting and investment decisions under simulated conditions (Cronbach's $\alpha = 0.79$).

Qualitative data were collected through semi-structured interviews with 20 students (10 from each group) and 4 teachers, exploring perceptions of the intervention and its impact on financial confidence.

Data Analysis

Quantitative data were analyzed using paired t-tests to compare pre- and post-intervention scores within groups and independent t-tests to compare outcomes between groups. Qualitative data were analyzed thematically, with codes developed for themes such as "awareness of biases," "confidence in financial planning," and "challenges in implementation."

Ethical Considerations

Ethical approval was obtained from the Enugu State Ministry of Education. Parental consent and student assent were secured, and anonymity was maintained throughout the study.

Results

Quantitative Findings

The intervention group demonstrated significant improvements in both bias identification and rational decision-making. Table 2 summarizes the pre- and post-intervention scores.



Table 2
Pre- and Post-Intervention Scores

Measure	Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	t-value	p-value
Bias Identification	Intervention	10.2 (2.3)	14.4 (1.9)	12.45	<0.001
	Control	10.1 (2.4)	10.5 (2.2)	1.23	0.221
Rational Decision-Making	Intervention	8.7 (2.1)	11.7 (1.8)	10.67	<0.001
	Control	8.6 (2.0)	8.9 (2.1)	0.98	0.329

The intervention group showed a 41% improvement in bias identification accuracy (from 51% to 72%) and a 35% enhancement in rational decision-making skills (from 58% to 78%). The control group showed no significant improvements.

Qualitative Findings

Three key themes emerged from the interviews:

- **Increased Awareness of Biases:** Students in the intervention group reported greater recognition of biases in everyday financial decisions, such as resisting impulsive purchases due to anchoring.
- **Enhanced Financial Confidence:** Participants noted improved confidence in budgeting and planning, with one student stating, "I now think twice before spending my pocket money."
- **Implementation Challenges:** Teachers highlighted limited access to digital tools for simulations and the need for more training in behavioral Economics.

Discussion

The findings demonstrate that integrating behavioral Economics into the classroom significantly enhances students' ability to recognize and mitigate cognitive biases in financial decision-making. The 41% improvement in bias identification aligns with prior studies (Lührmann et al., 2015), while the 35% enhancement in decision-making skills underscores the value of experiential learning (Heinberg et al., 2014). Qualitative feedback further supports the intervention's impact on students' financial confidence, a critical factor in long-term Economic empowerment (Lusardi & Mitchell, 2014).

Challenges, such as limited digital resources and teacher training needs, reflect broader systemic issues in Nigerian education (Udeh & Eze, 2022). These barriers suggest that scaling behavioral economics education requires investment in infrastructure and professional development. The study's context-specific approach, tailored to Enugu State's socioeconomic realities, supports the call for culturally relevant financial Education (Besharat et al., 2021).

Limitations include the short duration of the intervention and the lack of longitudinal data to assess long-term impacts. Future research should explore sustained effects and scalability across diverse Nigerian regions.



Conclusion

This study highlights the transformative potential of behavioral Economics Education in equipping secondary school students with the skills to navigate cognitive biases in financial decision-making. The significant improvements in bias identification and rational decision-making underscore the value of interactive, experiential learning. By addressing psychological barriers, such interventions empower students to make informed financial choices, fostering Economic resilience in a challenging Economic landscape.

Recommendations

- Curriculum Integration: Incorporate Behavioral Economics into the Nigerian secondary school curriculum, emphasizing practical exercises like simulations.
- Teacher Training: Provide professional development programs to equip educators with knowledge and skills in Behavioral Economics.
- Resource Investment: Address resource constraints by investing in digital tools and low-cost alternatives for simulations.
- Longitudinal Studies: Conduct follow-up research to evaluate the long-term impact of behavioral economics education on students' financial behaviors.

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