INTERNATIONAL JOURNAL OF TECHNOLOGY AND ACADEMIC RESEARCH

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

BEHAVIORAL ECONOMICS OF EDUCATIONAL CHOICE: COGNITIVE BIASES, SOCIAL INFLUENCE AND HUMAN CAPITAL INVESTMENT IN UZBEKISTAN

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Doi: https://doi.org/10.5281/zenodo.23806145

Abstract: Investment in higher education is a central mechanism of human capital formation and long-term economic development. Traditional human capital theory explains educational decisions through expected earnings, tuition costs, employment prospects, and the anticipated returns to education. However, behavioral economics highlights the additional influence of present bias, social norms, overconfidence, information limitations, and reference-dependent preferences. This article examines these behavioral mechanisms in the context of higher education expansion in Uzbekistan. The study applies descriptive statistical analysis, growth-rate calculations, structural analysis, and scenario modeling using official data published by the National Statistics Committee. The number of higher education students increased from 571.5 thousand in the 2020/2021 academic year to 1,535.0 thousand in 2025/2026, representing cumulative growth of approximately 168.6%. The number of higher education graduates increased from 83,905 in 2020 to 225,940 in 2025, while the higher education coverage rate for the population aged 18–23 increased from 6.8% in 2014 to 47.7% in 2024. These developments indicate substantial expansion in education participation and the scale of human capital formation. Nevertheless, aggregate enrollment trends cannot establish the direct influence of psychological factors on individual decisions. The study proposes a conceptual framework incorporating behavioral diagnostics, transparent information, career counseling, and educational choice architecture. The findings emphasize the importance of integrating behavioral insights into higher education policy while maintaining access, autonomy, and evidence-based institutional evaluation.

Keywords: Behavioral economics, educational choice, human capital, higher education, present bias, social influence, educational investment, cognitive biases, Uzbekistan.

INTRODUCTION

Education is one of the most important forms of investment in human capital. It contributes to knowledge formation, labor productivity, innovation, economic mobility, and long-term economic development.

Traditional human capital theory explains educational decisions as investments involving current costs and expected future benefits.

Students and their families may evaluate tuition fees, learning expenses, foregone earnings, future employment opportunities, and possible wage premiums before selecting educational pathways.

However, the process of choosing a university or field of study involves uncertainty.

Prospective students may lack reliable information about educational quality, occupational opportunities, future labor market demand, and personal academic capabilities.

In addition, educational choices are often influenced by parents, peers, cultural expectations, institutional reputation, and perceptions of social status.

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

Behavioral economics provides a framework for understanding how these non-financial factors interact with conventional economic incentives.

In Uzbekistan, higher education has undergone considerable expansion.

According to the National Statistics Committee, the number of higher education students increased from approximately 571.5 thousand in the 2020/2021 academic year to 1.535 million in 2025/2026.

The expansion creates opportunities for human capital development, but it also increases the importance of ensuring that educational choices are informed and aligned with individual interests and economic opportunities.

The objective of this research is to analyze higher education trends in Uzbekistan and examine the potential contribution of behavioral economics to improving educational decision-making.

LITERATURE REVIEW

Becker (1964) developed the economic theory of human capital, explaining education and training as investments that may increase future productivity and earnings.

Mincer (1974) further developed the relationship between schooling, professional experience, and earnings.

However, conventional human capital models generally assume that individuals can evaluate the expected benefits and costs of educational alternatives.

Simon (1955) challenged the assumption of unrestricted rationality, introducing the concept of bounded rationality.

Kahneman and Tversky (1979) demonstrated how individual choices can be influenced by reference points and asymmetric perceptions of gains and losses.

Laibson (1997) studied hyperbolic discounting, providing a theoretical explanation for the preference for immediate benefits over future rewards.

In the context of education, present bias may contribute to procrastination, inadequate preparation, or underinvestment in long-term learning.

Hoxby and Turner (2013) examined the importance of information and application assistance in improving educational opportunities for high-achieving students from low-income backgrounds.

Their research illustrates how informational barriers may influence educational decisions even when financially attractive opportunities exist.

The behavioral literature suggests that educational decisions depend on the interaction between economic conditions, expectations, information, and psychological characteristics.

DATA AND RESEARCH METHODOLOGY

The study uses official statistics from the National Statistics Committee of Uzbekistan.

- The following indicators are analyzed:
- Number of students in higher education institutions.
- Number of higher education graduates.
- Higher education coverage of the population aged 18–23.
- Gender composition of higher education enrollment.

The analytical methods include:

Dynamic comparison across academic years.

1. Absolute and relative growth calculations.
2. Compound annual growth analysis.
3. Gender composition analysis.

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4. Scenario-based policy modeling.

The cumulative growth rate is calculated as:

$CGR = [(X_n / X_0) - 1] \times 100$

The compound annual growth rate is:

$CAGR = (X_n / X_0)^{(1/n)} - 1$

Gender composition is calculated as:

GS = (Students in group / Total students) × 100

The study uses official enrollment and graduation indicators but does not include individual-level psychological survey data.

Thus, behavioral mechanisms are discussed as theoretically motivated explanations and subjects for future empirical testing.

RESULTS AND DISCUSSION

Table 1. Number of Students in Higher Education Institutions in Uzbekistan

Academic year	Students, thousand	Annual growth, %
2020/2021	571.5	-
2021/2022	808.4	41.45
2022/2023	1,042.1	28.91
2023/2024	1,314.5	26.14
2024/2025	1,432.8	9.00
2025/2026	1,535.0	7.13

Source: National Statistics Committee of Uzbekistan. Growth rates calculated by the author using rounded official enrollment totals.

Between the 2020/2021 and 2025/2026 academic years, the number of students increased by:

Absolute increase = 1,535.0 - 571.5 = 963.5 thousand

The cumulative growth rate was:

CGR = (1,535.0 / 571.5 - 1) × 100 = 168.59%

The enrollment multiple is:

1,535.0 / 571.5 = 2.69 times

The compound annual growth rate over five academic-year intervals was:

CAGR = (1,535.0 / 571.5)^(1/5) - 1 ≈ 21.9%

These results indicate substantial higher education expansion.

However, the growth rate gradually moderated as the student population increased.

The annual growth rate declined from approximately 41.45% in 2021/2022 to 7.13% in 2025/2026.

This moderation does not necessarily imply a decline in demand for higher education. It may reflect the expansion of the base population, changes in admission capacity, demographic conditions, and other structural factors.

The National Statistics Committee reports the following higher education coverage rates for the population aged 18–23.

Table 2. Higher Education Coverage Rate in Uzbekistan

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Year	Coverage rate, %
2014	6.8
2016	7.2
2018	10.6
2020	18.7
2021	28.2
2022	36.6
2023	45.9
2024	47.7

Source: National Statistics Committee, April 2025.

The absolute increase between 2014 and 2024 was:

47.7 - 6.8 = 40.9 percentage points

The ratio of the two coverage rates was:

47.7 / 6.8 = 7.01

Thus, the 2024 coverage rate was approximately seven times its 2014 level.

The increase reflects substantial changes in access to higher education.

However, coverage rates should not be interpreted as direct measures of students' educational motivation or academic achievement.

Access to institutions, admission opportunities, household income, tuition conditions, demographic structure, and education policies all influence participation.

Official higher education statistics provide additional information about changes in student composition.

Table 3. Gender Composition of Higher Education Students

Academic year	Male students, thousand	Female students, thousand	Female share, %
2020/2021	311.5	260.0	45.49
2021/2022	439.3	369.1	45.66
2022/2023	547.3	494.8	47.48
2023/2024	657.9	656.6	49.95
2024/2025	708.1	724.7	50.58

Source: National Statistics Committee, Higher Education Statistical Release. Shares calculated from rounded values.

The number of female students increased from 260.0 thousand to 724.7 thousand.

Female enrollment growth = (724.7 - 260.0) / 260.0 × 100 = 178.73%

Male student enrollment increased from 311.5 thousand to 708.1 thousand.

Male enrollment growth = (708.1 - 311.5) / 311.5 × 100 = 127.32%

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Female enrollment therefore grew faster over this period.

The female share increased from approximately 45.49% to 50.58%, an increase of 5.09 percentage points.

These statistics describe changes in educational participation.

They do not establish that gender differences in enrollment growth resulted from particular behavioral mechanisms, nor do they establish equality of educational opportunities or outcomes across all fields and regions.

The number of graduates represents an important indicator of the scale of human capital entering the economy.

Table 4. Higher Education Graduates in Uzbekistan

Calendar year	Graduates
2020	83,905
2021	103,898
2022	102,381
2023	184,133
2024	211,197
2025	225,940

Source: National Statistics Committee, SIAT, number of students graduating from higher education institutions.

Between 2020 and 2025, the number of graduates increased by:

225,940 - 83,905 = 142,035

The cumulative increase was:

CGR = (225,940 / 83,905 - 1) × 100 = 169.28%

The number of graduates was approximately 2.69 times the 2020 level.

Between 2024 and 2025, the increase was:

225,940 - 211,197 = 14,743

The annual growth rate was:

14,743 / 211,197 × 100 = 6.98%

The growing number of graduates increases the importance of aligning educational programs with occupational demand and helping students make informed career decisions.

Nevertheless, the number of graduates alone does not reveal employment quality, graduate earnings, skills matching, or individual satisfaction with educational choices.

These outcomes require additional data.

Behavioral economics identifies several mechanisms that may influence educational decisions.

Present bias

Students may undervalue the long-term benefits of education relative to immediate consumption, leisure, or employment income.

This may influence study effort, preparation, and decisions about additional qualifications.

Social influence

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Students may select a university or academic field because of family expectations, peer decisions, or perceived prestige.

Social influence can provide useful information but may also lead students to overlook their individual abilities and interests.

Overconfidence

Some students may overestimate their probability of admission or future success.

This may lead to inappropriate application strategies or insufficient preparation.

Loss aversion

Prospective students may avoid educational programs that involve uncertainty, unfamiliar locations, or significant financial commitments.

Anchoring

Students may rely excessively on initial information, rankings, advertised salaries, or prominent examples when evaluating career opportunities.

Information asymmetry

Educational institutions typically have more information about program content and delivery than prospective students.

In addition, students may lack reliable information about graduate outcomes and occupational prospects.

These mechanisms suggest that educational counseling and transparent information may contribute to better educational choices.

Table 5. Behavioral Factors and Proposed Educational Interventions

Behavioral factor	Potential decision-making problem	Institutional intervention
Present bias	Insufficient long-term educational planning	Goal-setting and structured study plans
Social influence	Selection based mainly on peers or prestige	Individual career counseling
Overconfidence	Unrealistic academic expectations	Diagnostic assessment and feedback
Loss aversion	Avoidance of unfamiliar programs	Transparent information on risks and benefits
Anchoring	Excessive reliance on initial salary or ranking information	Comparative program information
Information asymmetry	Incomplete understanding of educational alternatives	Verified graduate outcome information

Source: Author's conceptual classification.

Behavioral interventions should support informed choice rather than pressure students toward a particular university or specialization.

Consider a hypothetical university with 10,000 students.

Suppose that, initially, 40% of students participate in structured career guidance activities.

The baseline number of participating students is:

10,000 × 0.40 = 4,000 students

Assume that a behavioral intervention involving reminders, personalized information, and simplified registration increases participation to 50%, 60%, or 70%.

Table 6. Hypothetical Career Guidance Participation Scenarios

Scenario	Participation rate	Participants	Additional participants

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Baseline	40%	4,000	-
Conservative	50%	5,000	1,000
Moderate	60%	6,000	2,000
Ambitious	70%	7,000	3,000

Source: Author's hypothetical calculations.

Under the moderate scenario:

Additional participants = 10,000 × (0.60 - 0.40)

Additional participants = 2,000 students

The scenario illustrates potential changes in program participation but does not establish that the intervention would produce these effects.

Moreover, increased career guidance participation should not automatically be interpreted as improved employment outcomes.

The quality of guidance and its actual impact on educational and career decisions must be evaluated separately.

Proposed Econometric Model

For future empirical research, the following model is proposed:

$$EC_i = \beta_0 + \beta_1 FI_i + \beta_2 SN_i + \beta_3 PB_i + \beta_4 EA_i + \beta_5 CI_i + \beta_6 CG_i + \varepsilon_i$$

Where:

EC - educational choice or informed-choice outcome;

FI - family income;

SN - social norms;

PB - present bias;

EA - educational aspirations;

CI - access to career information;

CG - participation in career guidance;

β_0 - constant;

β_1–β_6 - model coefficients;

ε - error term.

The dependent variable should be operationalized according to the research objective.

For example, an informed-choice outcome could be measured using a validated index of program knowledge, preference alignment, and understanding of expected costs.

Alternatively, a binary indicator could identify whether a student enrolls in a preferred and suitable program.

The following hypotheses are proposed:

H1: Access to transparent program information is positively associated with informed educational choice.

H2: Stronger present bias is associated with weaker long-term educational planning.

H3: Social influence is significantly associated with university and program selection.

H4: Structured career guidance improves the quality of educational information available to students.

These hypotheses require individual-level data and appropriate statistical testing.

Several institutional measures may improve educational decision-making.

First, universities should strengthen career guidance and academic counseling.

Second, students should have access to reliable information about tuition costs, curriculum content, academic requirements, and graduate outcomes.

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Third, universities could introduce voluntary diagnostic assessments to help prospective students identify their academic interests and competencies.

Fourth, educational information systems should present program alternatives in a clear and comparable format.

Fifth, digital platforms may offer personalized reminders about application deadlines, scholarship opportunities, and academic support.

Sixth, universities should assess the effectiveness of such interventions through controlled pilot projects.

Finally, policy evaluation should consider not only the number of students enrolled but also educational quality, completion, skills development, and graduate employment outcomes.

CONCLUSION

Educational choices represent complex decisions involving financial costs, uncertain future benefits, individual expectations, and social influences.

The statistical analysis demonstrates substantial expansion of higher education in Uzbekistan.

Student enrollment increased from 571.5 thousand in the 2020/2021 academic year to 1.535 million in 2025/2026.

Higher education coverage among the population aged 18–23 increased from 6.8% in 2014 to 47.7% in 2024.

The number of graduates increased from 83,905 in 2020 to 225,940 in 2025.

These developments reflect significant changes in the scale of higher education and potential human capital formation.

Behavioral economics provides a complementary framework for understanding how students evaluate educational alternatives and respond to uncertainty, social pressure, and information limitations.

The article proposes integrating career counseling, transparent information, behavioral support, and decision-quality assessment into higher education institutions.

The central conclusion is that expanding education access should be complemented by measures that help individuals select suitable educational pathways.

Future research should employ surveys, field experiments, and graduate outcome data to evaluate the effectiveness of behavioral interventions on educational decisions.

REFERENCES

1. Becker, G. S. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press.
2. Mincer, J. (1974). *Schooling, Experience, and Earnings*. National Bureau of Economic Research.
3. Simon, H. A. (1955). A Behavioral Model of Rational Choice. *The Quarterly Journal of Economics, 69*(1), 99–118.
4. Kahneman, D., & Tversky, A. (1979). Prospect Theory: An Analysis of Decision under Risk. *Econometrica, 47*(2), 263–291.
5. Laibson, D. (1997). Golden Eggs and Hyperbolic Discounting. *The Quarterly Journal of Economics, 112*(2), 443–477.
6. Hoxby, C., & Turner, S. (2013). Expanding College Opportunities for High-Achieving, Low Income Students. *Stanford Institute for Economic Policy Research Discussion Paper*.
7. National Statistics Committee of Uzbekistan. (2026). *How Much Has the Number of Students in Uzbekistan Increased in 35 Years?*

ISSN: 2224-6878 | Pakistan Volume 6, No. 10.

IF: 14.91 | 2026 http://waerasia.org/index.php/ijtar

8. National Statistics Committee of Uzbekistan. (2025). *Higher Education Coverage Increased by 40.9 Percentage Points*.
9. National Statistics Committee of Uzbekistan. (2025). *Statistical Indicators of Higher Education*.
10. National Statistics Committee of Uzbekistan. (2026). *Number of Students Graduating from Higher Education Institutions (Total)*. SIAT database.