



# Gener Generation Z and Debt Burden: Behavioral and Institutional Factors

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## Abstract

The article examines the indebtedness of young people aged 18–25 (Generation Z) in Kazakhstan and CIS countries in comparison with foreign practices, drawing on Engel’s law and behavioral finance, as well as the results of a bibliometric-cluster analysis of international literature in the Scopus database. To assess the factors influencing the probability of having a loan among young people, logit and probit models were applied based on the author’s survey (N=70 for ages 18–25). It was found that 57.1% of young respondents have a loan; among those with loans, the median debt burden is 50% of income (mean 45.3%). The most common purposes of loans are appliances/electronics (≈4%), education (≈23%), and clothing (≈13%). Logit and probit estimates show weak and statistically insignificant relationships between having a loan and the indicators “budgeting,” “expense planning,” and “savings” when accounting for gender and place of residence; interpretations and institutional implications are discussed. The results correspond to three stable clusters of international literature: (A) over-indebtedness & microfinance, (B) financial literacy & inclusion, (C) Engel’s law & income distribution.

**Keywords:** Generation Z; debt burden; Engel’s law; behavioral finance; logit/probit; Kazakhstan; CIS; BNPL.

## 1.Introduction

Young people aged 18–25 enter adult life under conditions of high inflationary volatility and the rapid spread of digital lending, including installment plans and “buy now, pay later” (BNPL) schemes, which lower transactional barriers to accessing borrowed resources while simultaneously increasing the risk of excessive indebtedness (World Bank, 2025). From the perspective of Engel’s law, the growth in the share of necessary expenses under limited incomes reduces the “free” part of the budget, thereby pushing young people toward borrowing to smooth consumption and invest in human capital (Anker et al., 2011; Zimmerman, 1932). Behavioral finance complements this picture with mechanisms of time bias, short-term thinking, and the “minimum payment illusion,” which makes installments and “buy now, pay later” programs especially attractive to young people but potentially risky due to the accumulation of debt obligations (Vernikov & Agadzhanian, 2023). The institutional environment—standards for disclosing the full cost of credit, debt burden limits, and regulation of microfinance organizations—significantly influences the outcomes of young borrowers, as confirmed by international reviews and regulatory practice (Buffes & Etienne, 2015).

The aim of the study is to identify the contribution of behavioral and institutional factors to the probability of having a loan among young people aged 18–25 and to compare the results with the international agenda.

### Objectives:

- describe the scale and structure of youth indebtedness based on the survey data;— evaluate logit and probit models of the probability of having a loan;
- demonstrate how the empirical results correspond to clusters of international literature and regulatory practices (Schicks, 2014).

## 2.Literature Review and Bibliometric Cluster Analysis

The classical formulation of Engel states that the share of expenditures on food and other primary needs decreases as income rises. The law is still widely used today as a proxy for welfare (Zimmerman, 1932). For young people with low and volatile incomes, the “compression” of the free budget explains the persistent need for intertemporal redistribution through credit, including for education and the digital basket: appliances and electronics (World Bank, 2025).

## 3.Behavioral Finance and Youth Indebtedness.

Studies on financial literacy show mixed effects of educational interventions on actual financial decisions, which highlights the relevance of designing “protective interfaces” and transparent product metrics (total cost of credit, overall debt burden) (Lusardi & Mitchell, 2014). The spread of BNPL among young people is associated with the perception of “installments without interest,” which, in the presence of multiple parallel obligations, can generate a hidden but high burden (Vernikov & Agadzhanyan, 2023).

## 4.Institutional Factors: MFIs, DBR, Borrower Protection.

Regulation of the microfinance sector, the introduction of payment-to-income limits (DBR), and standards for credit cost disclosure are linked to the dynamics of consumer lending and delinquency rates among young people (Buffes & Etienne, 2015). The experience of developed countries also records an increase in delinquencies among young people on credit cards in 2024–2025, which strengthens the focus on regulatory “constraints” and the prevention of excessive indebtedness (Mori & Sanchez, 2025; Nai et al., 2018).

*Table 1. International Comparison of Youth Indebtedness*

Region	Share of Youth with Loans	Main Types of Loans	Comments
Kazakhstan	57%	consumer, appliances, education	median burden 50% among borrowers ( <i>own calculations</i> )
USA	high share of student debt, growth of card delinquencies	student, credit cards, mortgage	increase in delinquencies in 2024–2025
United Kingdom / EU	credit cards, student loans (UK)	cards, student	regulatory agenda on BNPL
CIS	consumer, MFIs	consumer, microloans	role of DBR, MFIs
<b>Note.</b> Compiled by the author based on data from National Bank of Kazakhstan (2023), Central Bank of Russia (2023), European Banking Authority (2022), OECD (n.d.-a; n.d.-b), World Bank (n.d.), Financial Conduct Authority (2023), European Central Bank (n.d.), and IMF (n.d.).			

**Results of the Bibliometric Analysis.** To identify thematic areas and the dynamics of scientific publications, a bibliometric analysis was conducted on articles indexed in the Scopus database for the period 2014–2024. The search was carried out using keywords reflecting the issues of youth indebtedness, financial literacy, and institutional factors of lending (for example: “youth debt,” “financial literacy,” “consumer credit regulation”).

At the first stage, complete bibliographic information (metadata: authors, titles, abstracts, keywords, references) was exported from the Scopus database in CSV format, compatible with the Bibliometrix package in the R environment (version 4.x).

At the second stage, the data were processed in R using the Bibliometrix/Biblioshiny package to calculate the main indicators: number of publications by year, Hirsch index, distribution by country, co-authorship analysis, and the social network structure of keywords.



For the visualization of clusters and the construction of co-occurrence maps of terms, the VOSviewer program (version 1.xx) was used. The VOS algorithm made it possible to identify stable thematic clusters based on co-citation networks and keyword co-occurrence. Clustering was carried out using the association strength method, with a minimum keyword occurrence frequency of 5. As a result, three stable clusters were identified:

**Table 2. Clusters Identified by Bibliometric-Cluster Analysis**

Cluster	Theme	Keywords (frequency)
A	Over-indebtedness & microfinance	over-indebtedness, microfinance, poverty, household debt
B	Financial literacy & inclusion	financial literacy, inclusion, education, financial behavior
C	Engel’s law & income distribution	Engel’s law, income distribution, consumption, expenditure

**Note.** compiled by the author based on the data of the bibliometric-cluster analysis

Trend analysis of keywords shows a growing interest in the topics *credit*, *unemployment*, and *household income* in 2015–2024, which is consistent with the post-pandemic increase in the cost of living (Martinček et al., 2022).

**Data and Methodology.** Microdata from the author’s online survey (subsample aged 18–25, N=70) were used. The main variables: gender; place of residence (city/village); budgeting; expense planning; presence of savings; fact of having a loan; number of loans; share of income allocated to debt service; purpose of the loan. Binary models (logit and probit) estimate the probability of having a loan:  $[P(\text{credit}_i=1)=F(\beta_1 \text{ female}_i + \beta_2 \text{ city}_i + \beta_3 \text{ budget}_i + \beta_4 \text{ plan}_i + \beta_5 \text{ savings}_i)]$  where F-is the logistic (logit) or standard normal (probit) distribution function. Estimation was carried out using the maximum likelihood method, with robust standard errors.

**5.Results**

- Descriptive statistics (ages 18-25, N=70)
  - Loan ownership: 57,1% (40 out of 70) have a loan.
  - Debt burden among borrowers: mean 45,3% of income; median 50%; IQR 40–50 p.p.
  - Savings (deposit): 38,6% (27 out of 70) have savings.
  - Loan purposes (only among borrowers): “Appliances/electronics”-48,7%; “Education”-23,1%; “Clothing”-12,8%; “Housing”-5,1%; “Leisure”-5,1%
- These results correspond to Cluster C (*Engel’s law & income distribution*): limited income and the structure of the young “digital basket” sustain the demand for credit even under high debt burden.
- Logit/probit estimates (signs, odds ratios, and robustness)
- Specification: *credit* ~ *female* + *city* + *budget* + *plan* + *savings*
- Logit (odds ratios, OR):
- *female*: OR = 0.64 (p≈0,38; 95% CI for OR: 0,24-1,72)- probability of having a loan is lower for women; weak/insignificant association.
  - *city*: OR = 0,54 (p≈0,51; CI: 0,09-3,35)-slightly lower odds of having a loan in cities; not significant.
  - *budget*: OR = 1.05 (p≈0,95; CI: 0,22–5,01) — budgeting is not associated with reduced probability of having a loan; possibly “financially active” individuals are also borrowers.
  - *plan*: OR = 1,06 (p≈0,94; CI: 0,27-4.13)-expense planning ≈ neutral.
  - *savings*: OR = 0,91 (p≈0,86; CI: 0,30-2.75)-savings are associated with a slightly lower probability of having a loan, but the effect is statistically insignificant.

**Probit:** The signs of the coefficients coincide in direction with the logit; statistical significance is absent for all predictors at standard levels.

Interpretation. In the small subsample, traditional “virtues” (budgeting/planning, having savings) do not show significant protective associations with the fact of having a loan among young people. Possible explanations: the declarative nature of practices (low quality of budgeting), the “financial activity” effect — those who keep a budget also tend to use credit products more actively, omissions of important controls (income/employment/BNPL/delinquencies). This aligns well with the critique of “teaching alone is not enough — market design must also be changed,” presented in works on the limited effectiveness of financial literacy as the sole instrument (Jentson, 2023; Willis, 2008).

**International Comparisons and Discussion.** According to international sources, young people are experiencing growing credit card balances and rising delinquency rates, which corresponds to our observations of high debt burden among already indebted young respondents (Martinchek et al., 2022; Mori & Sanchez, 2025). In countries with high education costs, student debt sets a debt trajectory from an early age, reducing the space for savings and major purchases; this pattern is recorded in the United States in particular (Fry & Cilluffo, 2024). For the CIS, consumer loans and microfinance organization loans play a significant role. The effectiveness of constraints (DBR, total cost of credit, collection practices) is a critical institution for protecting young borrowers. Bibliometric clusters A-C show that the optimal response is a combination of regulation, literacy, and consideration of “Engelian” budget constraints: education alone is insufficient if products and interfaces remain behaviorally risky.

*Table 3 Key Indicators and Regulatory Response*

Country	Structure of Youth Indebtedness	Main Regulatory Measures (2022–2025)	Delinquency Trends / Notes
Kazakhstan	Predominantly consumer loans and microloans; spread of digital products (including BNPL)	Strengthening macroprudential supervision; AQR 2024; focus on DBR/DSTI/DTI; recommendations on credit cost disclosure.	Retail lending is growing; NPL around 3,4% in the banking sector and ~10,3% in MFIs; DSTI and DTI implemented
Russia (CIS)	Consumer loans, microloans, cards; significant role of MFIs	Focus on DBR restrictions and MFI regulation; Central Bank of Russia analytics on retail credit risks (2023)	Growth of retail indebtedness and delinquencies; regulators strengthening supervision
USA	Student debt, credit cards; BNPL expanding	Strengthened monitoring of delinquencies; discussions on restructuring student loans	Growth of delinquencies on credit cards and student loans in 2024-2025; high level of write-offs
EU / United Kingdom	Credit cards, student loans (UK); BNPL widely spread	EBA/FCA-recommendations on BNPL disclosure, strengthened consumer protection (Consumer Trends Report 2022/23) потребителей (Consumer Trends Report 2022/23).	Increased focus on BNPL and consumer protection; monitoring of household indebtedness
<b>Note.</b> Compiled by the author based on data from the National Bank of Kazakhstan, the Agency for Regulation and Development of Financial Market, AFK, Ranking.kz, the Bank of Russia, the Federal Reserve Bank of St. Louis, the Urban Institute, the European Banking Authority, the Financial Conduct Authority, and the European Central Bank (2023–2025).			

## 6. Conclusions and Recommendations

1. In the subsample of ages 18-25-57, 1% have a loan, with the median debt burden among borrowers reaching 50% of income a sign of financial fragility.
2. In the limited sample, behavioral indicators (budgeting, planning) do not provide a statistically significant “protective” effect regarding the fact of having a loan; emphasis is needed on the quality of practices and institutional constraints.



3. The international agenda confirms the importance of three directions: limiting over-indebtedness (A), developing literacy and inclusion (B), and accounting for structural budget constraints according to Engel (C).

### 7. Policy and Practical Recommendations:

- Regulators: strengthen standards for full credit cost disclosure, introduce “behavioral” warnings in BNPL/card interfaces, and maintain DBR limits for young borrowers.
- Banks/MFIs: design “protective interfaces” (aggregator of total debt burden, monthly payment stress test), product “ladders” with cost reduction under disciplined repayment.
- Education: modules on building reserves, reading contracts, and repayment strategies (“avalanche,” “snowball”), as well as practices of “minimax budgets” accounting for Engel’s law.

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