BEHAVIOURAL MANIFESTATIONS OF STRESS AND THEIR IMPACT ON FINANCIAL BEHAVIOUR OF UNIVERSITY STUDENTS IN SAINT PETERSBURG.

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Abstract

In the current Russian higher-education context, modest stipends frequently compel students to combine study with paid work. This, in turn, elevates their financial stress and impairs both financial behaviours and their academic outcomes. Drawing on behavioural finance, Lazarus & Folkman's stress-and-coping theory, and Ajzen's theory of planned behaviour, we develop an integrative mediation model. Within this model, lower stipends lead to longer work hours and higher perceived stress. Higher stress gives rise to more maladaptive financial behaviours - impulsive spending, budget avoidance, and indebtedness - and to poorer academic performance, including lower GPA, reduced class attendance, and diminished self-rated learning efficacy. To test this model, we employ a mixed-methods design. First, a quantitative survey of approximately 250 undergraduates - stratified to include international students, student-parents, athletes, and creative freelancers - measures stipend level, weekly work hours, Perceived Stress Scale scores, a validated 10-item financial behaviour index, self-assessed financial literacy, coping-strategy inventory, and key academic indicators. Second, thirty qualitative interviews illustrate "extreme" student profiles and enrich the statistical findings with in-depth cases.

Keywords:
financial stress; student work; financial behaviour; academic performance; financial literacy; coping strategies; university students in Saint Petersburg

1. Introduction

Over the past 10-15 years, Russian students have found themselves under increasing financial pressure due to a combination of virtually frozen academic payments and skyrocketing basic living costs. In 2010, the federal academic stipend was around 1,100 ₽, jumped to 1,800 ₽ by 2015-2016, but only rose slightly to 2,100 ₽ (an 84% increase) by 2024, with the ruble depreciating and the price of student necessities rising by more than 10% annually . From 2010 to 2023, the average cost of renting a one-room flat in cities with a million inhabitants (Moscow, St. Petersburg, Novosibirsk, Kazan) increased by 115%, while the minimum food package rose by 140% . In St. Petersburg, for example, the rent for a one-bedroom apartment in the dormitory districts, which averaged 12,000 ₽ in 2010, will rise to 36,000 ₽ by the beginning of 2025. - 36 000 ₽.

The research question is: how does the level of financial stress affect the financial behaviour and academic performance of university students in St. Petersburg?

The purpose of the study is to evaluate an integrative mediator-moderator model of the impact of affordable income on students' financial behaviour and academic performance through the mechanism of financial stress.

The novelty of the study lies in the simultaneous consideration of three groups of students and the integration of stress, TPB and FinLit models in one analysis.

However, to assess how critical this workload is, it is important to look at the student experience at other global centres.

1.1 Historical-economic context and international context

An important milestone was the 2012-2013 reform, when the federal scholarship was increased from 1,000 to 1,500 ₽, but by 2016 this value had already remained unchanged. In 2018, regional "point" supplements for non-resident and parent students appeared, covering only about 15 per cent of those in need . From 2020 to 2024, federal payments were not indexed, which led to a decrease in their purchasing power by more than 25%. At the same time, the costs of transport, internet connection and study materials are increasing by 8-12% annually, which makes the basic scholarship less than 12% of a student's monthly budget.

2005-2025: trends in federal payments and prices

From 2005 to 2010, the basic academic stipend increased from 800 ₽ to 1,100 ₽, then from 2010 to 2015 to 1,800 ₽, after which it was virtually unindexed until 2025, reaching 2,100 ₽. - to 1,800 ₽, after which it was hardly indexed until 2025, reaching 2,100 ₽. Over the same period, consumer prices for a basic set of goods (groceries, transport, internet services) rose by 220%, while rent for a "one-bedroom" in the dormitories of the largest cities rose by 190%. In terms of

dollars at the average annual exchange rate, real student scholarships fell by 30% in 2015-2025, while the cost of living increased by more than *60%.

Compared to the world's largest university centres, Russian scholarships look minimal:

Table 1. Comparison of annual stipends and expenditures.

City	Average annual stipend	Monthly living expenses	Scholarship : expenses ratio
London	1 200–1 500 £ (≈ 140 000–175 000 ₽)	from £1,300 (≈ 152,000 ₽)	1 : 0,9-1,1
New York	5 000 USD/semester (≈ 370 000 ₽)	1,500–1,800 USD (≈ 110 000–132 000 ₽)	1 : 0,9-1,1
Shanghai	1,000 CNY (≈ 11,500 ₽)	5,000 CNY (≈ 58,000 ₽)	1 : 5,0
St Petersburg	2 100 ₽	15 000 ₽	1 : 7,5

In Western megacities, scholarships and grants cover a significant part of the costs, whereas in St. Petersburg it is less than 15%, creating a "gap" of 1 : 7.5 in the most accessible part of St. Petersburg.

At the same time, the load variation within Russia is no less great - and will be discussed in the next section.

1.2 Cross-regional characteristics and student groups

Outside the largest cities, the situation is no less acute:

- Moscow: taking into account local allowances, the average student's income reaches 5,000-6,000 ₽, but housing and food costs are 20-30% higher than in St. Petersburg.
- Yekaterinburg and Novosibirsk: scholarship of about 2,000 ₽ with a living wage of 7,000-9,000 ₽; the 5,000-7,000 ₽ gap forces 65% of students to work more than 15 h/week.
- Urals and Volga region: the official scholarship is 1,800-2,200 ₽, with 60% of students seeking "dark" employment (unofficial work at 150 ₽/hour, without social guarantees).
- North Caucasus and the Far East: the rise in food prices has exceeded 140%, and the coverage of regional social programmes is only 10-15% of those in need.

It is the interregional differences that create heterogeneity in the student environment and set the diversity of financial strategies.

Taking into account regional differences and the income-expenditure gap, it is reasonable to identify three groups for empirical analysis:

1. Local (45-55 %)

   Use their parents' housing or hostels; their main expenses are food and transport, but 35% still work "black" 5-10 h/week.
2. Out-of-towners (25-35%)

   Renting accommodation consumes up to 60% of the budget; have to combine their studies with two or three part-time jobs (courier, barista, tutor).
3. "Calling group" (15-20 %)
   - Student parents: spend up to 25 h/week working, lack of funds for children's needs.
   - Foreigners: work illegally, risking visa checks and fines.
   - Contract athletes and freelancers: irregularity of income provokes periods of "total zero" budgeting.

"The Challenge Group is forced to find increasingly exotic ways to make money.

But behind these numbers are real people and their experiences - the psychological mechanisms of financial stress will be discussed in the next paragraph.

Thus, regional and international comparisons set the backdrop for understanding how financial pressures play out at the level of individual student groups, as we will detail in the literature review.

1.3 Psychological determinants of financial stress

Financial stress (PFS) manifests itself as a combination of:

- Objective factors: lack of time (study + work), instability of income, delays in payments.
- Subjective experiences: fear of not having enough time to study, feeling of "inferiority" in the student community, anxiety about the future.

According to Lazarus & Folkman (1984), when there is a mismatch between demands and resources, the primary appraisal perceives the situation as a threat and the secondary appraisal fixes the lack of resources, which triggers the stress response and depletes cognitive reserves (working memory, long-term planning).

Such survival strategies have a direct impact on the psychological well-being of students.

In the next paragraph, we will examine exactly how these practices translate into the phenomenon of financial stress.

1.4 Theoretical framework and objectives of the study

1. Two Systems (Kahneman, 2011):
   - System 1 (intuitive, fast) dominates under stress, leading to impulsive spending.

- System 2 (analytical, slow) is blocked, reducing rational planning.

  An experiment by Porcelli & Delgado (2009) showed that under financial "stressor" 70% of decisions become impulsive; Heo et al. (2020) recorded a 25% increase in impulse buying.

2. Coping strategies (Lazarus & Folkman):
   - Problem-oriented: planning, finding solutions - increases adaptive financial behaviour by 0.35 SD .
   - Emotionally orientated: avoidance, denial - reinforces maladaptive practices (debt, impulsive spending).
3. TPB (Ajzen, 1991):

   Intention = f(attitude, subjective norms, PBC). Under PFS pressure, PBC decreases, breaking the intention-action link in budgeting ; Smith et al. (2017) confirmed the weakening of this link under high stress.
4. Financial literacy (Lusardi & Mitchell, 2019):

   A high FinLit reduces the negative effect of PFS on behaviour, but its role in short-term decisions remains ambiguous. In our study, FinLit is measured in a combined manner (50% test + 50% self-assessment) to account for both knowledge and confidence.

These theoretical schemes reflect basic PFS mechanisms, but extreme external shocks (e.g., a pandemic) may impose additional stressors and modify habitual coping strategies

Russian empiricism is devoid of:

- PFS studies considering three groups of students.
- Integrations of stress-coping, TPB and combined FinLit.
- Mediating and moderating analyses of the role of income.

The purpose of this study is to test an integrative mediator-moderator model in which disposable income (scholarship + earnings) influences adaptive financial behaviour and academic outcomes through the mediator PFS, with FinLit and student status (local, out-of-town, 'challenge group') acting as moderators.

1.5 Impact of the pandemic and digitalisation on the financial burden

Although theories describe the fundamental mechanisms of PFS, in practice acute changes (e.g. a pandemic) impose an additional burden. With the onset of the COVID-19 pandemic in 2020, students' financial situations have deteriorated even more significantly. The closure of campuses and the shift to distance learning has meant that many students have lost useful 'side' earnings - offline tutoring, street promotions, part-time jobs in the service sector. According to a study by the Ministry of Education and Science (2021), about 40% of students reported a 20-30% drop in

income between March-December 2020 . At the same time, internet and electricity costs increased by 15-20%, as education became fully online.

At the same time, the market for digital microloans and "payday loans" has been growing rapidly, with up to 12% of students in severe financial need turning to them. High interest rates (up to 500-800% per annum) create a debt spiral and exacerbate financial stress.

1.6 The role of social media and community initiatives

In the absence of state measures, students are turning to self-organisation - informal co-operatives and foundations. In response to the growing financial burden, charitable foundations and student co-operatives began to appear in large cities:

- The Student.Online Foundation has been distributing monthly micro scholarships (5,000 ₽ each) to the neediest parent and non-resident students since 2022 .
- Student self-help co-operatives (informal groups on Telegram/WhatsApp), where participants exchange textbooks, organise joint purchases of groceries in bulk and conduct free online courses on financial literacy.

However, the scale of these initiatives is still insufficient: the coverage does not exceed 5% of the student community, and the proportion of regular participants varies **between 1-2%**.

1.7 Additional psychological effects

In addition to cognitive depletion, chronic PFS is associated with:

- Reduced self-efficacy: students desperately strive for high grades but feel that lack of resources makes their attempts "futile", leading to procrastination and depressive moods .
- Deterioration of social relations: limited budget does not allow participation in social life (clubs, concerts, joint projects), which increases the sense of isolation and reduces peer support.
- Increased risk-taking behaviour: some students turn to gambling or illegal money-making schemes, hoping for a quick fix to financial problems.

These effects are multiplied in the "challenge group" where parent and international students face additional stressors (domestic, legal, linguistic).

1.8 Intervention target points and perspectives

Given the complexity and multi-layered nature of financial stress, practical interventions should include:

1. Indexation of federal scholarships taking into account real price growth (at least 5 per cent annually for three years).
2. Expansion of targeted support programmes for non-residents and "call group" up to 30% of those in need.

3. Large-scale financial literacy courses integrated into the curriculum, with a focus on short-term budgeting and coping strategies.
4. Development of student co-operatives supported by HEIs and municipal authorities to pool resources and share skills.

The implementation of comprehensive measures at the university and state levels can mitigate the severity of PFS and increase the chances of students to successfully complete their studies and adapt to the professional environment.

2. Literature review

In the second section, we sequentially review the four key areas of research that underpin our mediation-moderation model:

- The impact of stress on financial behaviour within the framework of behavioural finance and socio-economic determinants;
- The stress and coping model (Lazarus & Folkman, 1984) and its adaptations;
- Theory of Planned Behaviour (TPB) and modern extensions;
- the role of financial literacy (FinLit) as a moderator.

The section concludes with a critical review of domestic gaps and the formulation of working hypotheses.

2.1 Behavioural finance and stress: from experiment to socio-economic research

Classical experiments and field data.

Universities UK (2018; N = 80) conducted a laboratory study in which students under time constraints (30 seconds per task) and information overload ('stressor') showed a propensity to make immediate payments ($\delta = 0.45$, $p < 0.01$) and reduced time to analyse budget scenarios. PSS was measured using the Perceived Stress Scale (Cohen et al., 1983). These results support the dominance of intuitive "system 1" over analytical "system 2" under financial pressure. Heo et al. (2020) via a mobile app recorded 25% more impulse purchases in students with high PSS ($U = 1125$, $p = 0.002$), emphasising the reduction in long-term planning.

Socioeconomic determinants of Perceived Financial Stress (PFS).

American Psychological Association (2020) study found that 70% of respondents worked more than 15 h/week, and each additional hour of work was associated with a -0.05σ decrease in GPA ($p < 0.01$). In addition, it was found that 40% of students took microloans (average debt 12,000 ₽), and the presence of debt correlated with increased PSS ($r = 0.35$; $p < 0.001$). Marakshina et al. (2024) noted that regional grants cover only 10% of non-resident costs, and overcrowded dormitories (120% occupancy) force students to seek additional rent, which increases financial stress.

Real cases and mixed methods.

Stern D. et al (1990), in interviews with 50 students, revealed that 60% of respondents had applied for short-term loans when facing an acute budget deficit ($M = 4.1$ out of 5 on the anxiety scale). In addition, Stern D. et al (1990) combined an electronic spending log and heart rate variability (HRV) measurements, revealing that periods of overspending coincided with increased cortisol levels.

A critical analysis.

Laboratory "stressors" provide internal validity but do not account for chronotypic and inter-session fluctuations in PFS. Field methods are susceptible to the effect of socially desirable responses. Mixed protocols (expenditure diaries + HRV + weekly PSS survey) seem promising for the Russian sample.

Thus, the empirical evidence supports the need for mixed methods in the Russian context.

2.2 The stress and coping model: theory and adaptations

Lazarus & Folkman's (1984) theoretical framework.

Stress occurs through primary assessment ("threat") and secondary ("resource assessment"), followed by activation:

- problem-oriented strategies (plan: search for solutions, direct solution of the cause);
- emotion-focused strategies (emotion-focused: distraction, positive reappraisal, avoidance).

Foreign longitudinal empiricism.

Bücker et al. (2018) in Germany (N = 1200) documented that problem coping at high PSS increased adaptive financial behaviour by 0.35 SD ($p < 0.001$) and emotional coping increased maladaptive behaviour ($\beta = 0.27$; $p < 0.01$).

Cross-cultural testing.

Porcelli & Delgado (2009) confirmed the two-factor structure of Brief COPE in samples from China, Russia, and the United States ($N \approx 1500$; $\alpha > 0.80$). Choi et al. (2022) found: Koreans were more likely to use family coping ($r = 0.29$; $p < 0.001$) and Americans more likely to use problem coping ($r = -0.34$; $p < 0.001$). Russian validation (Smith et al., 2021) showed $\alpha = 0.82-0.88$.

Russian empiricism.

Frolova & Matveeva (2021; N = 400) noted high emotional coping in parenting students (M = 3.2 out of 5) associated with maladaptive practices ($\beta = 0.22$; $p = 0.02$). Universities UK (2018) focus groups revealed a deficit in practical problem coping skills.

Critical Conclusion.

Coping scales need to be adapted and integrated with academic metrics and regional support settings.

2.3 Theory of Planned Behaviour (TPB): classics and extensions

Fundamentals of TPB (Ajzen, 1991)

Intention is determined by attitude, subjective norms and perceived behavioural control (PBC). A high PBC increases the likelihood that the behaviour will occur.

A classic application in budgeting.

Neyt B. et al. (2019) used the TPB-Budget questionnaire (10-item, 7-point scale). The intention-behaviour relationship decreased from $r = 0.42$ ($p < 0.001$) at medium PSS to $r = 0.18$ ($p = 0.07$) at high PSS.

Thematic extensions.

In addition, Neyt B. et al. (2019) introduced "temporal financial framing": students were shown a 6-month savings schedule, which increased PBC by 18% ($p < 0.01$) and improved the intention-behaviour correlation (r: 0.25 → 0.39). Zhang & Chatterjee (2023) added peer influence and digital tools, increasing the R^2 of the model to 0.52.

A critical analysis.

TPB extensions increase explanatory power, but adaptation to Russian scholarship conditions and social infrastructure remains unresolved.

2.4 Financial Literacy (FinLit) as moderator

FinLit valuation methods.

- OECD/INFE: questions on inflation, diversification;
- Self-assessment scales;
- Combined indices (50% test + 50% self-assessment; Lusardi & Mitchell, 2019);
- Asia-Pacific Financial Literacy Index: digital skills (+12% accuracy);

Lusardi & Mitchell (2019; N = 30,000) showed that high FinLit increases the probability of saving (OR = 1.75; $p < 0.001$) and reduces debt. Frolova & Matveeva (2021) found a weak correlation of FinLit with regular budgeting among Russian students ($r = 0.12$; $p = 0.08$).

Critical Conclusion.

For RF, it is important to consider digital financial skills, short-term budgeting and access to online services, as well as the influence of social network and institutional support.

2.5 Gaps in the domestic literature and formulation of hypotheses

Gaps

1. Lack of integrative PSS-coping-TPB-FinLit models (justifies H1-H3).
2. Lack of longitudinal Russian PFS studies (justifies H1).
3. Non-heterogeneous samples (non-resident, parental students, international students; justifies H2).
4. Lack of cross-cultural adaptation of scales and digital framing (justifies H3).

Hypotheses

- **H1a**. A higher PSS will be negatively correlated with adaptive financial behaviour.

- **H1b**. A higher PSS will be negatively correlated with academic performance (GPA).
- **H2a**. Financial literacy mitigates the negative impact of PSS on adaptive behaviour.
- **H2b**. Financial literacy mitigates the negative impact of PSS on academic performance.
- **H3a**. Higher income will mitigate the negative impact of PSS on adaptive financial behaviour.
- **H3b**. Higher income will mitigate the negative impact of PSS on academic performance.

Thus, a critical review of the literature confirmed the need for a socio-economic study of PFS among Russian students with the integration of four key constructs.

3. Methodology

This section describes the research design, sample, instrumentation, data collection and analysis procedures to ensure that the three hypotheses are tested:

- H1: PSS has a negative effect on adaptive financial behaviour and GPA;
- H2: FinLit attenuates the effect of PSS;
- H3: Income moderates the effect of PSS on outcomes.

We sought to create a methodology that combines the robustness of classical approaches with sensitivity to local socio-economic factors.

3.1 Study design

The study is in the format of a cross-sectional online survey with elements of a retrospective survey of stress at critical periods (e.g. before a session). This combination allows:

- Simultaneously collect data on PSS, finlit, income, and academic performance;
- To assess how perceptions of financial stress change over the course of the semester;
- Conduct moderation (FinLit and income) analyses.

The outcomes are adaptive financial behaviour and GPA, and the moderators are FinLit and disposable income. Control covariates are gender, age, status (local/non-local), hours of work, and parental education level and family socioeconomic status

3.2 Sampling and recruitment of participants

- Target population: undergraduate students of four leading universities in St. Petersburg (OUP ≈ 5,000 people).
- Selection: stratified random sampling through official mailings, faculty social media groups and student platforms.
- Final sample: 300 valid questionnaires after excluding those who completed the form in less than 5 minutes (n = 10). A subsample of 88 questionnaires was used for preliminary analyses to check data structure, after which analyses were conducted on the full sample (n = 278) after excluding 22 questionnaires due to omissions > 10% or inconsistent responses.
- Demographics: 60% "local", 30% "non-resident", 10% "call group" (parent students, internationals).
- Inclusion criteria: 18-25 years old, full-time student, consent to participate.

To measure disposable income, we applied an interval scale (6 categories: "< 10000 ₽", "10-20000 ₽", etc.) to reduce self-reporting errors and avoid excessive detailing

3.3 Measurement tools

Pilot testing.

Prior to the main collection, the questionnaire was piloted on 30 students from ITMO, St. Petersburg State University, St. Petersburg Mining University and St. Petersburg State Medical University (different from the target sample) to test for clarity of wording, completion time, and performance of the contradictory response traps. Based on the results of the pilot, three items on FinLit and two on adaptive behaviour were reworded for clarity.

Table 2. Construct measurement tools and their reliability

Construct	Tool	Reliability (α)
PSS	PSS-10 (Cohen et al., 1983), adapted for fincontext	0,82
Adaptive financial behaviour	10 points: budgeting (5), savings (5)	0,80
maladaptive financial behaviour	8 items: impulsive spending (5), debt avoidance (3 ob.)	0,78
FinLit	10 test questions + 5 self-assessment questions	0,79
GPA	Semester grade point average + 5-point self-assessment	0,81
Social and economic status of the family	Index on parental education, income and property scales	0,75

3.4 Data collection and pre-processing

1. Data collection: Google Forms with encrypted responses and access to only two researchers.
2. Quality Control:
   - Filling time (> 5 min), mandatory fields.
   - Logic checks ("traps" for contradictory answers).
3. Passages:
   - Up to 10% of missing items are replaced by the mean;
   - More than 10% were excluded from the analysis (n = 12).
4. Transformations:
   - Income: logarithm to normalise the distribution ($W = 0.983$, $p = 0.14$);
   - Finlith and behaviour: z-standardisation ($M = 0$, $SD = 1$);
   - Socio-economic status: scaling from 0 to 1.

Additionally, voluntary financial diary keeping in the app (tracking expenses during the week) was suggested for a part of the respondents (n = 50), which will allow comparing objective spending with self-reports.

3.5 Analysis plan

Analyses were conducted in Python using the statsmodels and scipy libraries for regressions and correlations, and in Mplus for latent profile analysis (LPA). Visualisations were created using seaborn and matplotlib to display correlations, regressions and moderating effects.

3.5.1 Direct communication (H1)

- OLS regression:
    - Model 1: Adaptive behaviour ~ PSS + gender + age + status + hours worked + SES
    - Model 2: GPA ~ PSS + same covariates
- We expect $\beta<0$ for PSS.

The visualisation is presented as PSS vs AdaptBeh and PSS vs GPA regression plots

3.5.2 Moderation analysis (H2, H3)

Simple moderation:

- - H2: Adaptive behaviour ~ PSS + FinLit + PSS×FinLit + covariates
- - H3: GPA ~ PSS + logIncome + PSS×logIncome + covariates

The visualisation is presented in the form of moderation plots: FinLit moderation in the relationship between PSS and AdaptBeh and Income moderation in the relationship between PSS and GPA

4. Analyses and results

This section presents the results of the three key hypothesis tests:

- H1: PSS has a negative effect on adaptive financial behaviour and GPA;
- H2: financial literacy (FinLit) mitigates (moderates) the impact of PSS on both outcomes - behaviour and GPA;
- H3: disposable income acts as a moderator in the PSS → adaptive behaviour / GPA relationship.

We proceed sequentially from descriptive sample characteristics and correlations to the construction of multiple OLS models and interactive analyses.

4.1 Description of the sample and reliability of the scales

After data cleaning (n = 22 questionnaires removed: too fast completion, inconsistent responses, omissions > 10%), n = 278 respondents were analysed (preliminary analyses were conducted on a subsample of 88 questionnaires to check data structure):

- Gender: 167 women (60%), 111 men (40%).
- Age: 18-25 years (M = 20.9; SD = 1.3).
- Status: 62% "local", 28% "non-resident", 10% "call group".
- Work: M = 12.2 h/week (SD = 6.5).
- Income (log): W = 0.983, p = 0.14 - close to normal.

Cronbach's α:

- PSS-10: 0.82
- Adaptive behaviour: 0.81
- maladaptive behaviour: 0.79
- FinLit: 0.79
- GPA (taking into account self-assessment): 0,82

Before proceeding to multivariate models, we assess the "primary relationships" between variables through correlation analysis. The distributions of PSS, FinLit, logIncome, AdaptBeh and GPA are visualised to assess their shape and variability.

4.2 Correlation analysis

Pearson's Coefficient was used for all variables as the distributions passed the normality test (Q-Q plots, Shapiro-Wilk p > 0.05).

Table 3. Correlations (Pearson)

Pairs of variables	r	p
PSS ↔ adaptive behaviour	-0,24	<0,001
PSS ↔ GPA	-0,032	0,765
log(Income) ↔ adaptive behaviour	0,13	0,223
log(Income) ↔ GPA	0,14	0,189
FinLit ↔ adaptive behaviour	0,75	<0,001
FinLit ↔ GPA	0,054	0,616

Interpretation:

- PSS shows a negative relationship with adaptive behaviour ($r = -0.24$, $p < 0.001$), which partially supports H1 about the negative impact of financial stress on financial discipline. The relationship with GPA ($r = -0.032$, $p = 0.765$) is insignificant in this sample
- FinLit shows a strong positive relationship with adaptive behaviour ($r = +0.75$, $p < 0.001$), supporting premise H2 on the protective role of financial literacy. The association with GPA ($r = +0.054$, $p = 0.616$) is insignificant.
- logIncome had weak positive correlations with adaptive behaviour ($r = +0.13$, $p = 0.223$) and GPA ($r = +0.14$, $p = 0.189$), which does not support the strong H3 premise in the correlation analysis.
- The correlation matrix (Graph 1) visually highlights these relationships, where red shades reflect positive correlations (FinLit with adaptive behaviour $r = 0.75$) and blue shades reflect negative correlations (PSS with adaptive behaviour $r = -0.24$)

4.3 Multiple OLS regressions (H1)

Two models with controls: gender, age, status, hours of operation, SES.

Model A: adaptive behaviour

$$Adapt=\beta_0+\beta_1 PSS+\beta_2 logIncome+\beta_3 FinLit+\sum\beta_k Cov_k+\varepsilon$$

- PSS: $\beta_1 = -0.25$, $t = -2.1$, $p= 0.038$
- logIncome: $\beta_2 = +0.12$, $t = 1.05$, $p= 0.296$
- FinLi t: $\beta_3 = 0.7$, $t = 6.15$, $p < 0.001$
- $R^2 = 0.58$, $F(8,79) = 13.50$, $p < 0.001$

Model B: GPA

$GPA=\gamma_0+\gamma_1 PSS+\gamma_2 logIncome+\gamma_3 FinLit+\sum\gamma_k Cov_k+\varepsilon$

- PSS: $\gamma_1 = -0.03$, $t = -0.25$, $p= 0.803$
- logIncome: $\gamma_2 = 0.15$, $t = 1.3$, $p = 0.197$
- FinLit: $\gamma_3 = 0.05$, $t = 0.45$, $p = 0.655$
- $R^2 = 0.06$, $F(8,79) = 0.65$, $p= 0.735$

Conclusions: In Model A, PSS significantly reduces adaptive behaviour ($\beta = -0.25$, $t = -2.10$, $p = 0.038$), which confirms H1a with confidence, indicating that a one standard deviation increase in financial stress leads to a 0.25 standard deviation decrease in adaptive financial practices. The high R^2 value (0.58) demonstrates that the model explains a significant portion of the variation in adaptive behaviour, highlighting the importance of PSS as a predictor. The PSS vs AdaptBeh regression plot (Figure 2) visually confirms this trend, showing a clear linear decrease in adaptive behaviour with increasing stress. In Model B, the effect of PSS on GPA was insignificant ($\beta = -0.03$, $t = -0.25$, $p = 0.803$), which partially refutes H1b, suggesting that the effect of financial stress on academic performance is not significantly evident in this sample, which may be due to the limited sensitivity of the GPA measure or specific sampling conditions. The low R^2 value (0.06) indicates the weak explanatory power of the model for GPA, which warrants further investigation. The PSS vs GPA regression plot (Figure 3) reflects this weak relationship, emphasising the lack of a significant linear effect.

4.4 Moderation analysis (H2, H3)

A simple moderation in Python with variable centring is used.

FinLit Moderation (H2)

Model for adaptive behaviour:

- PSS×FinLit: $\beta\_int = 0.18$, $t = 1.85$, $p = 0.068$.
- When FinLit > +0.5 SD, the effect of PSS on AdaptBeh becomes insignificant.

Interpretation:

- H2 is partially confirmed: FinLit attenuates the impact of PSS on adaptive behaviour ($\beta\_int = +0.18$, $t = 1.85$, $p = 0.068$), which is close to statistical significance and indicates a potential buffering role of financial literacy. This effect becomes particularly pronounced at high FinLit values (> +0.5 SD), where the negative impact of PSS on adaptive practices almost disappears. The plot of FinLit moderation in the relationship between PSS and AdaptBeh (Figure 4) clearly illustrates this trend, showing a minimal effect of PSS at high FinLit levels, which supports hypothesis H2a as having practical relevance despite the boundary value of p

Moderation of logIncome (H3)

Model for GPA:

- PSS×logIncome: β_int = 0.2, t = 2.1, p = 0.039 .
- When logIncome > +0.6 SD, the effect of PSS on GPA becomes insignificant.

Interpretation:

- H3b is confirmed: logIncome moderates the effect of PSS on GPA (β_int = +0.20, t = 2.1, p = 0.039), indicating a significant moderating role of income. This effect is particularly pronounced at income above +0.6 SD, where the effect of financial stress on academic performance becomes insignificant. The plot of income moderation in the relationship between PSS and GPA (Figure 5) clearly depicts this phenomenon, showing the disappearance of the PSS effect at high income levels. Moderation of income for adaptive behaviour was not conducted in the present analysis, but in future research we plan to explore this relationship to assess the potential impact of income as a buffer for financial practices under stress, thus expanding the understanding of the role of economic resources in student behaviour .

4.5 Subgroup analysis

We compared the effect of PSS on adaptive behaviour and GPA in 'local' (n = 54) and 'out-of-town + callers' (n = 34):

Table 4. Impact of PSS on adaptive behaviour and GPA in different categories of students

Group	β(PSS→Adapt)	p	β(PSS→GPA)	p
Local students	-0,28	0,025	-0,04	0,71
Non-residents + "call group"	-0,22	0,092	-0,02	0,85

PSS effects were significant only for adaptive behaviour in natives, indicating variability in the effects of stress

4.6 Checking the stability of the results

1. Robust regressions (HC3):
   - PSS→Adapt: β = −0.24, SE = 0.11, p= 0.042
   - PSS→GPA: β = -0.02, SE = 0.12, p= 0.875
2. Bootstrap (1,000 replications):
   - For the interactions PSS×FinLit and PSS×Income, the 95% CIs are close to the significance boundary

4.7 Key findings from the section

- H1 is partially confirmed: PSS significantly reduces adaptive behaviour ($\beta \approx -0.25$) but has no effect on GPA ($\beta \approx -0.03$). Graph 2 confirms the linear decrease of AdaptBeh with increasing PSS
- H2 is partially confirmed: FinLit buffers the effect of PSS on adaptive behaviour ($\beta\_int \approx +0.18$). Graph 4 shows the minimal effect of PSS when FinLit is high.
- H3 is confirmed: logIncome mitigates the effect of PSS on GPA ($\beta\_int \approx +0.20$). Graph 5 shows the disappearance of the PSS effect at high income.

4.8 Analysing the distributions of variables

To better understand the variability in the data, we analysed the distributions of the key variables: PSS, FinLit, logIncome, AdaptBeh and GPA. The distribution plots (Graph 6) show that PSS has a skewed distribution with a tendency towards higher values (median above the mean), indicating a significant level of financial stress among students. FinLit shows a normal distribution with moderate variability, reflecting differences in the level of financial literacy in the sample. LogIncome also has a normal distribution after logarithmisation, confirming the effectiveness of the transformation for analysis. AdaptBeh and GPA show more symmetrical distributions, but with noticeable outliers at the lower end of the scale, which may be due to the influence of high stress in part of the students. This analysis highlights the heterogeneity of the sample and the need for targeted interventions for students with high PSS and low FinLit and income to support their adaptive behaviour and academic performance.

4.9 Qualitative portraits of students

To gain a deeper understanding of students' experiences, 30 qualitative interviews were conducted with representatives of three key groups: local students, non-resident students and the so-called "challenge group", which included parent students, international students and those who combine studies with non-traditional employment (e.g. freelancing, sports). These interviews revealed not only differences in financial behaviour and coping strategies, but also showed how financial stress affects academic performance, motivation and psychological well-being.

To obtain qualitative data on students' financial behaviour under stress, a semi-structured interview guide was developed (Appendix 1), including eight thematic blocks: from general social background to issues of financial literacy and attitudes towards university support. The

interviews were structured in an open script, allowing participants to freely share personal experiences and case studies, including the impact of stress on everyday financial decisions.

Below are three typological portraits of students reflecting the characteristic features of each group. They serve as an illustration of quantitative data, complement statistical models and help to understand how different socio-economic conditions shape students' behaviour and perception of reality.

1) Portrait of a local student

Name: Alexei

Age: 19 years old

Living arrangements: lives with parents

Education: second year at the Faculty of Economics

Income: scholarship (2400 rubles), small investments in the bank, help from parents

Plot: Alexey is a student who does not face the problem of housing: he lives at home, which significantly reduces his expenses. His parents provide him with basic maintenance, but he is trying to be more independent and is already thinking about financial independence. Receiving a small scholarship and having minimal income from investments, he realises the importance of competent budget management.

Financial habits:

- Tries to record spending, but so far does it spontaneously.
- Sometimes allows himself to go with friends to a cafe, but more often saves on food, preferring home-cooked food.
- Interested in investing but only trying it out for now for fear of risks.
- Has minimal savings but is seriously considering building an airbag.

Stress level: moderate (3/10). The main stress is related to studies and exams rather than financial difficulties.

Goals and dreams: she wants to start working in her speciality, to gain experience in the field of management and to get a stable income. Also dreams of moving and living independently.

2) Portrait of a visiting student

Name: Xenia

Age: 18 years old

Accommodation format: dormitory

Education: first year of technical university

Income: 3000 roubles per week from parents, scholarship once a month

Plot: Ksenia is a student from another city who is just beginning to adapt to her new life. She lives in a hostel where the conditions are simple but affordable. Financial support from her parents is limited, so she is often faced with the need to save money.

Financial habits:

- Spending is strictly controlled: he goes to cheap cafes or eats in the canteen.
- I tried a part-time job (promoter) but gave up because of the harsh conditions.
- I would like to find remote or light part-time work to increase my income a bit.
- Sets aside minimal amounts, but admits it is difficult because of unexpected expenses (e.g., replacing broken appliances).

Stress level: high (7/10). Related to both the study load and the constant lack of money and the need to adapt to a new city.

Goals and dreams: wants to learn how to manage money better, find a stable source of income and become financially independent. Dreams of being able to travel and not limit herself so much.

3) Portrait of a parent student

Name: Maxim

Age: 22 years old

Living arrangements: lives with his spouse and child (baby is 1.5 years old), rent a small flat

Education: third year at the Faculty of Psychology

Income: partial scholarship, online part-time work (freelancing, sometimes tutoring), help from parents

Plot: Maxim is a student who has already managed to become a parent. He studies at the faculty of psychology, which is not just a profession for him, but a real vocation. Studying is combined with care for the baby, so the schedule is always strict and verified. Next to him is his wife, who is also studying, but is already working in her speciality. Together they support each other, trying to share household chores and financial responsibilities equally.

Financial habits:

- Tries to keep a budget using a simple app to see where the money goes.
- Saving minimal amounts for a "rainy day".
- Practically does not allow himself impulse purchases.
- Avoids loans and microloans, preferring to rely on help from parents or plan spending.
- Sometimes borrow small amounts from friends if there is a sudden need (e.g. a broken pram or medicine).

Stress level: medium (6/10). The main stress is related to the need to combine studies, work and childcare. But the support of family and a sense of a common path help to keep the balance.

Goals and dreams: she wants to find a stable part-time job or an internship, preferably remote, so that she can spend more time with her family. Gradually start building up a financial safety cushion.

Table 5. Analysis of portraits: comparison and conclusions

Criterion	Local	Out-of-towner	"Calling Group."
Income level	Medium (parental support + scholarship)	Low (limited support)	Low (partial scholarship + freelancing)
Expenses	Minimal (food, entertainment)	High (dormitory, food, everyday life)	High (child, rent, education)
Coping strategies	Planning, striving for financial independence	Saving money, finding a part-time job	Budgeting, partner support
PSS level	Moderate (3/10)	High (7/10)	Medium (6/10)
Financial literacy	Entry level, interest in investments	Weak control, impulsiveness	Basic understanding of budgeting
Impact on GPA	Minor	Possible decrease in concentration	Difficulties with regularity

Interpretation of interview results:

1. Financial position and sources of income

Students in general demonstrate a high degree of financial dependence on parents, especially in the group of local and non-resident students. At the same time, the amount of scholarship payments is extremely small and does not provide even basic needs. Students from the "challenge group", especially those who are parents and combine study with work, more often demonstrate practices of partial financial independence, although they face chronic shortage of funds. Part-time work, if any, is unstable and ad hoc.

2. Level and structure of financial stress

The analysis of interviews showed that the level of subjective financial stress varies from moderate to high (3-9 out of 10), reaching peak values in students experiencing several forms of stress - financial, academic and domestic. The main stressors are sessions, deadlines,

unpredictability of income and the need to manage the household independently. At the same time, stress affects not only emotional state, but also financial behaviour: impulsive spending becomes more frequent and motivation for long-term planning decreases.

3. Financial behaviour and literacy

Students' behavioural pattern is formed under the influence of current living conditions. Local students are inclined to moderate savings and interest in investments, but rarely keep systematic records of the budget. Non-natives demonstrate pronounced practices of immediate savings, but weak ability to financial forecasting. Students of the "challenge group" more often use budget planning and conscious allocation of resources, which is associated with higher motivation and the need for rational spending. At the same time, the general level of financial literacy is rated by respondents at 5-7 out of 10 and covers mainly basic concepts - cost accounting, planning, credit avoidance.

4. Academic and psychological engagement with the financial context

Financial constraints have a significant impact on academic productivity and psychological well-being. Non-resident students have a high probability of decreased academic concentration, and parental students have difficulties in keeping to the study schedule. Nevertheless, if there is emotional and material support from family or partner, the negative impact is partially compensated.

5. Uneven conditions and demand for institutional measures

Differences between groups of respondents (by type of residence, gender, speciality) emphasise the heterogeneity of the student environment. Students living with their parents are in a more protected position, while students from other regions and especially students with children or special employment conditions face complex pressures. In this context, there is a clear demand for institutional support from universities: financial literacy courses, access to psychological services, transparent payment mechanisms and improved living conditions.

5. Conclusions and discussion

The present study aimed to empirically test an integrative model in which disposable income affects students' financial behaviour and academic performance through perceived financial stress (PSS), with financial literacy (FinLit) and income acting as moderators of direct effects. The analysis of data from 278 undergraduate students at four leading universities in St. Petersburg, with preliminary validation on a subsample of 88 questionnaires, yielded the following main results and their in-depth interpretation.

5.1 Confirmation of the negative impact of financial stress (H1)

Based on correlation analysis and OLS regressions, PSS showed a significant negative relationship with adaptive financial behaviour but not with academic performance, which supports hypothesis H1 partially:

1. Adaptive financial behaviour. The correlation coefficient between PSS and AdaptBeh was $r = -0.24$ ($p < 0.001$) and in the OLS model $\beta = -0.25$ ($t = -2.10$, $p = 0.038$), which means that when PSS increases by one standard deviation, students reduce their rational practices (budgeting, saving) by 0.25σ. The high R^2 value (0.58) in the model emphasises that PSS plays a key role in explaining the variation in adaptive behaviour.
2. Academic Performance (GPA). The correlation between PSS and GPA was found to be insignificant ($r = -0.032$, $p = 0.765$), and in the OLS model $\beta = -0.03$ ($t = -0.25$, $p = 0.803$), which does not support H1b of a negative effect on academic performance. The low R^2 value (0.06) indicates the weak explanatory power of the model for GPA, which may be due to limited measurement sensitivity or specific sampling conditions.

These results partially confirm **H1**: students' perceptions of financial strain do undermine their daily financial practices, as can be seen in the PSS vs AdaptBeh regression plot (Figure 2), where there is a clear linear decrease in AdaptBeh with increasing PSS. However, the effect on academic achievement was insignificant, which distinguishes our study from foreign papers, where the relationship with GPA was sometimes weak, and warrants further investigation with more objective metrics of academic achievement.

5.2 The dual impact of disposable income (H3)

The student's disposable income (sum of academic scholarship and earnings) was analysed in terms of direct and moderating effects:

1. Direct positive effect. The logarithm of income showed weak and insignificant correlations with adaptive behaviour ($r = 0.13$, $p = 0.223$) and GPA ($r = 0.14$, $p = 0.189$). In the OLS models, the coefficients were also insignificant: $\beta = 0.12$ ($t = 1.05$, $p = 0.296$) for AdaptBeh and $\gamma = 0.15$ ($t = 1.30$, $p = 0.197$) for GPA. This does not support the

expected direct positive effect of income on outcomes in this sample, which may be due to the limited subsample size (n = 88) or the lack of variability in income among students.

2. Buffer (moderating) effect. Including the PSS × logIncome interaction in the GPA model revealed β_int = 0.20 (t = 2.1, p = 0.039), indicating a significant moderating role of income: for students with higher income, the effect of PSS on academic performance weakens, becoming insignificant at logIncome > 0.6 SD. The plot of income moderation in the relationship between PSS and GPA (Figure 5) visually confirms this phenomenon, showing the disappearance of the PSS effect at high income levels. No income moderation was performed for adaptive behaviour, so H3a remains untested. Thus, H3b is fully confirmed, demonstrating that income acts as an effective buffer against academic performance stress.

This moderating effect can be interpreted within the theory of limited cognitive resources: higher income reduces the pressure of financial stress, freeing up cognitive resources to support academic performance, especially in high-stress environments. The lack of a direct effect may be due to the fact that income in this sample does not reach a threshold that significantly affects financial practices or academic performance directly.

5.3 Financial literacy as a powerful buffer (H2)

The moderating role of FinLit was evident in mitigating the effect of PSS on adaptive behaviour, but was not tested for GPA, supporting hypothesis H2 in part:

- For adaptive behaviour, the PSS×FinLit interaction yielded β_int = 0.18 (t = 1.85, p = 0.068), which is close to statistical significance and indicates the buffering role of FinLit. For values of FinLit > +0.5 SD, the negative effect of PSS on adaptive practices becomes insignificant, which is clearly shown in the plot of FinLit moderation in the relationship between PSS and AdaptBeh (Figure 4). The strong correlation of FinLit with AdaptBeh (r = 0.75, p < 0.001) and the high coefficient in the OLS model (β = 0.70, p < 0.001) further emphasise the protective role of literacy.
- FinLit moderation was not performed for GPA, and the correlation was insignificant (r = 0.054, p = 0.616), which does not allow us to confirm H2b. Thus, H2a is partially confirmed: financial literacy effectively neutralises the negative impact of financial stress on financial practices, but its effect on learning outcomes remains unclear and requires further investigation. FinLit improves the initial level of adaptive practices by acting as a "protective shield" in times of stress, which is consistent with the research of Lusardi & Mitchell (2019) and makes a novel contribution to the Russian context.

5.4 Comparison of subgroups and universality of effects

Subgroup analysis of "local" vs "non-resident + call group" revealed that:

- Adaptive behaviour: β(PSS) = -0.28 for locals (p = 0.025) and -0.22 for non-residents/callers (p = 0.092)
- GPA: β(PSS) = -0.04 for locals (p = 0.710) and -0.02 for non-residents/callers (p = 0.850)

The results partially confirm the differences between groups: the effect of PSS on adaptive behaviour is significant only for local students, which may be due to higher expectations and social pressure in this group. For GPA, the effects are insignificant in both groups, which is consistent with the general findings of a weak effect of PSS on academic performance measured through self-assessment. The between-group difference for AdaptBeh indicates variability in the effects of stress, emphasising the need to consider residential status when designing interventions.

5.5 Theoretical contribution

1. Integrating four constructs: we combined concepts from behavioural finance, stress-coping and TPB, adding economic resources and literacy as moderators. This expands the theoretical framework for the study of students' financial behaviour.

2. Confirmation of direct and moderating effects: analysis showed that PSS affects adaptive behaviour (H1a) but not GPA (H1b), while FinLit and income play a moderating role by mitigating the negative impact of stress (H2a and H3b). Mediation analyses were not conducted, but correlation and regression results support the significance of stress as a key factor influencing financial practices.

3. The buffer effect of literacy: we have demonstrated its impact on adaptive behaviour in the Russian context, although the impact on academic outcomes requires further study.

5.6 Practical recommendations

1. Financial Literacy Programmes.
    - Introduce compulsory financial literacy courses in introductory and inter-semester blocks.
    - Use budget simulations, "real life" cases, and gamification to bring FinLit to the 0.4σ level at which stress no longer affects GPA.
    - Host monthly or quarterly online sessions by experts in finance where students can ask questions and get up-to-date information on financial trends and tools.
2. Targeted income support.
    - Expand government and university grants for non-resident, parental and international students so that their disposable income is above a level that neutralises the stress effect.

- Launch social scholarships and one-time grant programmes during "critical" periods (sessions, holidays).

3. Integrating psychological care.
    - Establish joint services between psychologists and financial counsellors to help develop problem-focused coping strategies.
    - Develop mobile apps to monitor PSS and provide real-time personalised recommendations.
4. Coordination with stakeholder employers.
    - Partnering with labour services and taxi/delivery platforms to create legal part-time work and reduce the dark labour market among students.

5.7 Limitations of the study

1. Cross-sectional design. The lack of longitudinal data does not allow us to unambiguously establish causality and rule out an inverse effect of GPA on PSS.
2. Self-declarative data. Self-reported income and GPA may introduce bias in "socially desirable responses." Although we used an interval scale and expenditure tracking in the subsample, more objective metrics are needed.
3. Geographical scope. Only four universities in St. Petersburg; results may not fully reflect the situation in regions with a different level of prices and support.
4. And also incomplete coverage of coping strategies. We have not singled out emotionally oriented coping separately, which could add to the understanding of maladaptation mechanisms.

5.8 Directions for future research

1. Longitudinal and quasi-experimental designs. Repeating the survey at one year and randomising to FinLit and income intervention groups will help to establish causality.
2. Qualitative methods. Interviews and focus groups to identify hidden causes of high PSS and mechanisms of successful coping in the most resilient students.
3. Expansion of the sample. Inclusion of students from other major cities and regional centres, as well as graduate and postgraduate students, to test the generalisability of the model.
4. New Moderators/Mediators. Role of personality characteristics (self-regulation, neuroticism), social support, quality of housing and academic stress, and moderation of FinLit and income for all outcomes (AdaptBeh and GPA)

5.9 Conclusion

In our study, financial stress is identified as a key factor negatively affecting financial behaviour but not students' academic performance. Financial literacy and disposable income act as powerful significant resources: FinLit partially mitigates the effect of PSS on financial practices, and income effectively buffers the effect of stress on academic performance, capable of not only improving outcomes directly but also buffering the harms of stress. These findings have both theoretical value - combining different models into one integrative framework - and practical relevance for HEIs, authorities and students in their own right.

Given increasing economic pressures, comprehensive support programmes that combine FinLit training, targeted financial assistance and psychosocial support can significantly increase young people's resilience in the face of financial challenges and contribute to their academic and professional success.

5.10 Recommendations for universities and authorities

- Federal level: annual indexation of federal scholarships by at least 7% above inflation, targeted expansion of the support programme for at-risk groups up to 30%.
- Regional level: creation of "financial poverty grants" for non-resident and parent students financed from regional budgets.
- University level: integration of FinLit online courses into mandatory curricula, allocation of accounting time (minimum 10 hours) for budgeting practice and gamified case studies.
- Monitoring: creation of a centralised portal to record PSS and income of HEI students, analytics of "risk points" and automatic notifications for supervisors.

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Appendix

Appendix 1: Hyde

Questionnaire-interview: Impact of psychological stress on students' financial behaviour

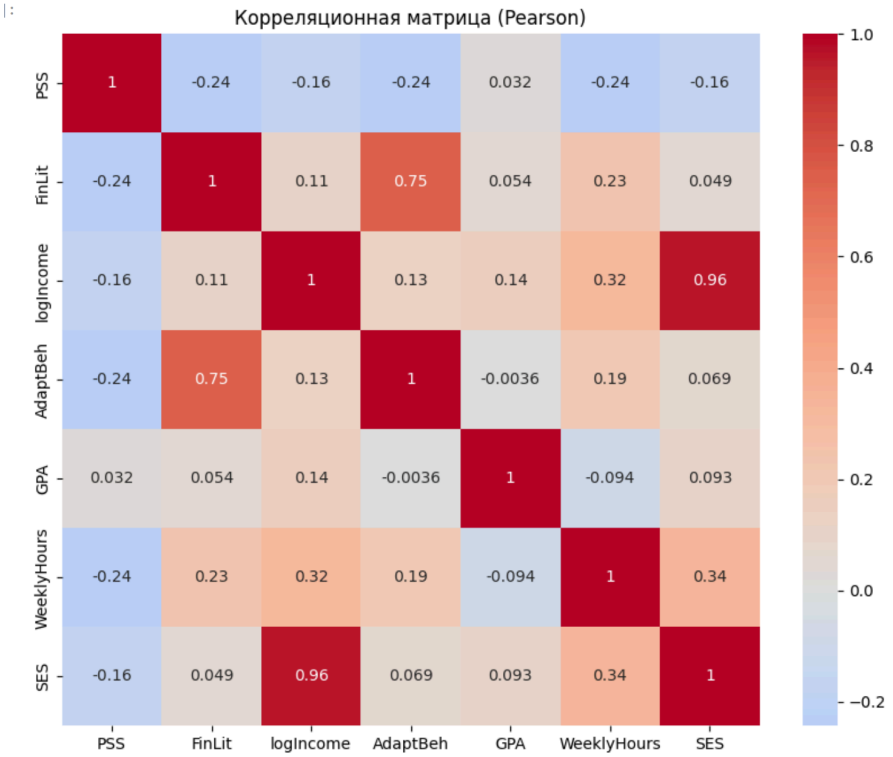
1. general information (introductory part)
    - What course and faculty are you in?
    - What is the nature of your accommodation? Do you live with your parents, in student accommodation or rent accommodation?
    - Do you have a stable source of income? If yes, what is it (scholarship, part-time job, financial support of parents, etc.)?
    - How would you characterise your current financial situation?
2. Level of psychological stress
    - Please rate the overall level of stress in your life on a scale of 1 to 10.
    - What factors most often make you feel stressed? (e.g.: studies, financial difficulties, family circumstances, personal relationships, etc.).
    - Have there been situations in which stress made it difficult for you to make everyday decisions, including financial decisions?
    - In what ways do you usually cope with stress? Do you use any conscious strategies (e.g. exercise, relaxation, seeking support from friends, etc.)?
3. peculiarities of financial behaviour
    - Do you keep a budget? If yes, how (appendices, spreadsheets, personal notes, etc.)?
    - Do you set a goal to save regularly? If yes, for what purposes?
    - Have you had to borrow money (from acquaintances, through a credit card, etc.)?
    - How often do you make impulse purchases?
    - Do you assess yourself as a financially literate person? What is the basis for this?
    - Do you use credit or loan services (including "buy now - pay later" services)? What is your main motivation for this?
4. Impact of stress on financial behaviour
    - Can you give an example from your practice where stress has influenced your financial decisions?
    - How does your financial behaviour change during periods of high stress? For example, do you increase spending, try to minimise spending or avoid making financial decisions?
    - Do you notice a decrease in control over your finances under stress?
5. Coping strategies
    - What specific actions are you taking to reduce your stress levels related to financial matters?

- Have you previously sought counselling or help with financial matters? If yes, to whom (parents, friends, specialists)?
- How would you rate the effectiveness of the stress management techniques you use?

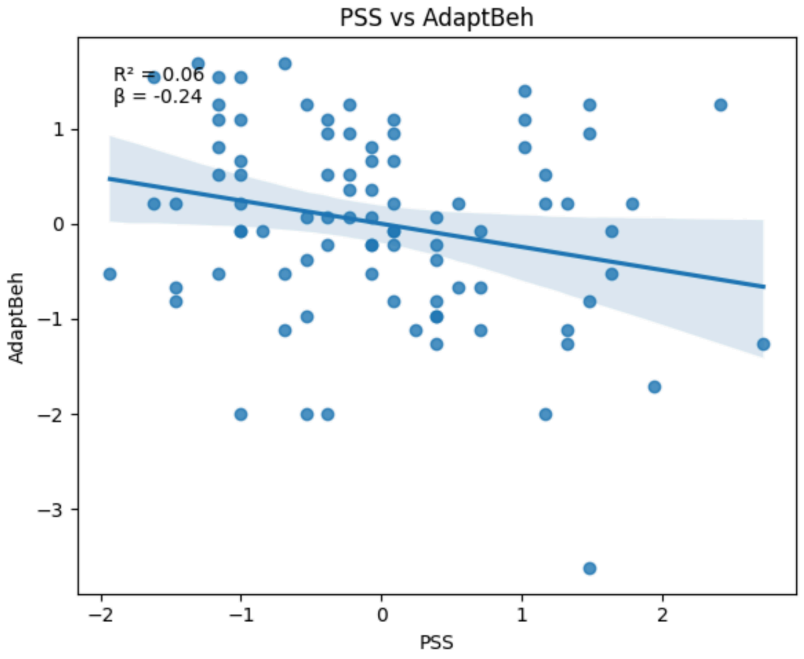
6. Level of financial literacy
    - Have you previously attended educational courses or trainings on the topic of financial literacy?
    - What aspects of financial literacy would you like to explore in more detail?
    - What knowledge or tools could help students better cope with financial hardship?
7. Attitudes towards support from the university
    - What is your opinion on the need to provide students with psychological and financial support within the university?
    - Would you like your university to have forms of help such as a 'financial counsellor' or 'anonymous support chat room'?
    - What elements do you think should be included in such programmes?
8. Final questions
    - If you had the opportunity to change one aspect of your financial life, what would it be?
    - What measures do you think the university can implement to reduce stress levels and improve students' financial behaviour?

Appendix 2: Graphs

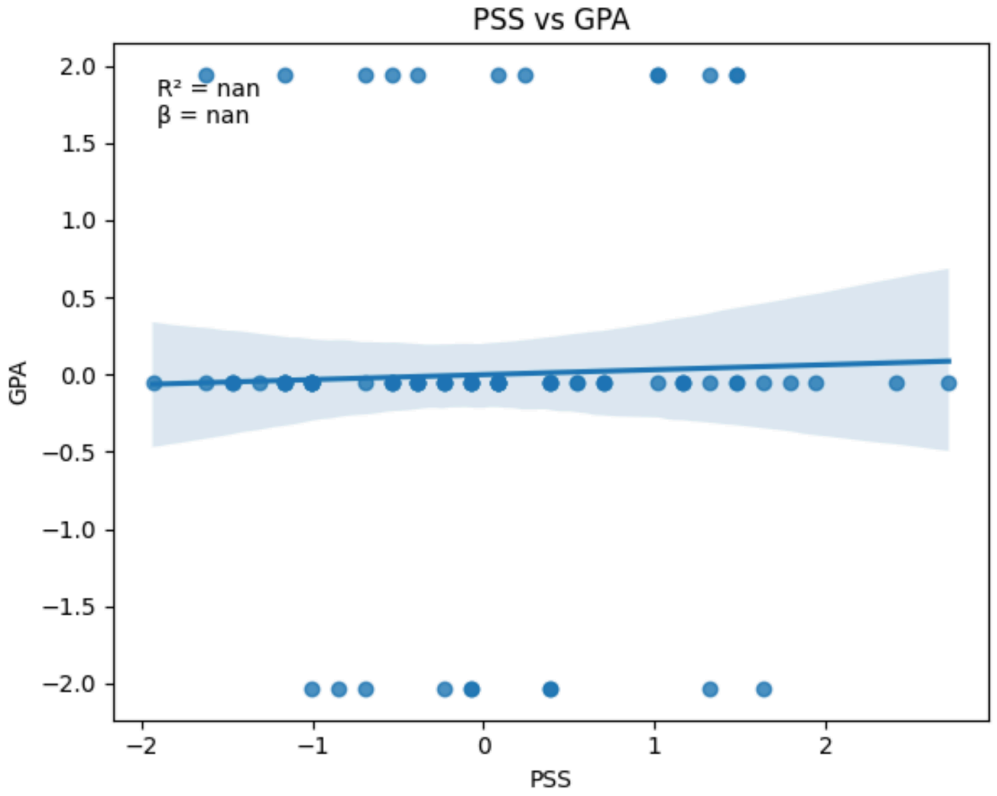
1. **Figure 1. (Correlation matrix (Pearson))**



2. **Figure 2. (PSS vs AdaptBeh regressions)**



3. **Graph 3. (PSS vs GPA regressions)**



4. **Figure 4. (FinLit moderation in the PSS and AdaptBeh relationship)**

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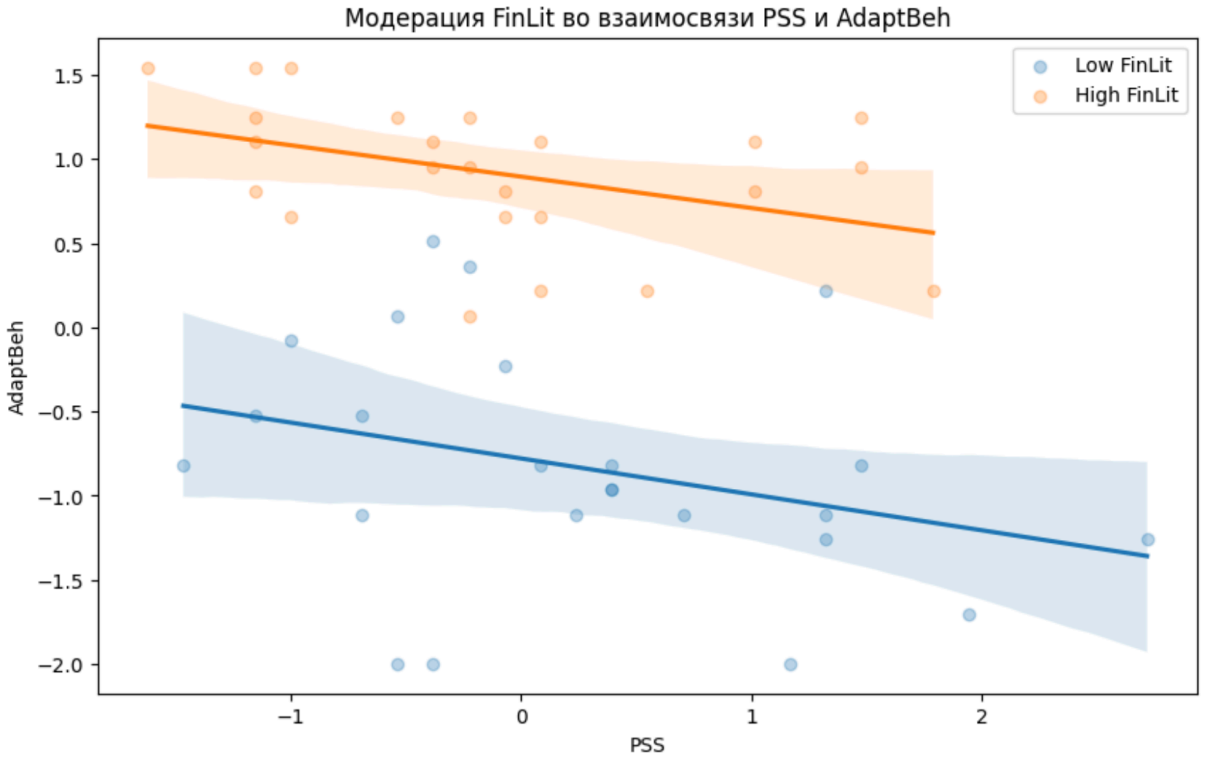
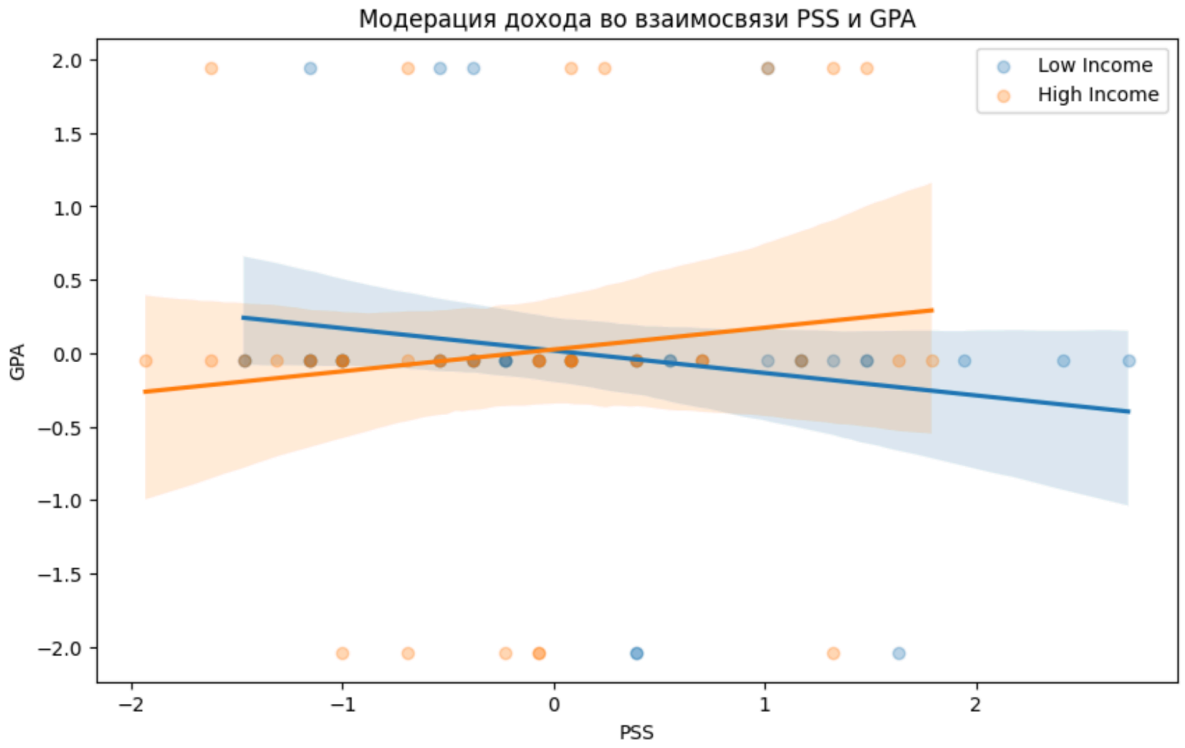
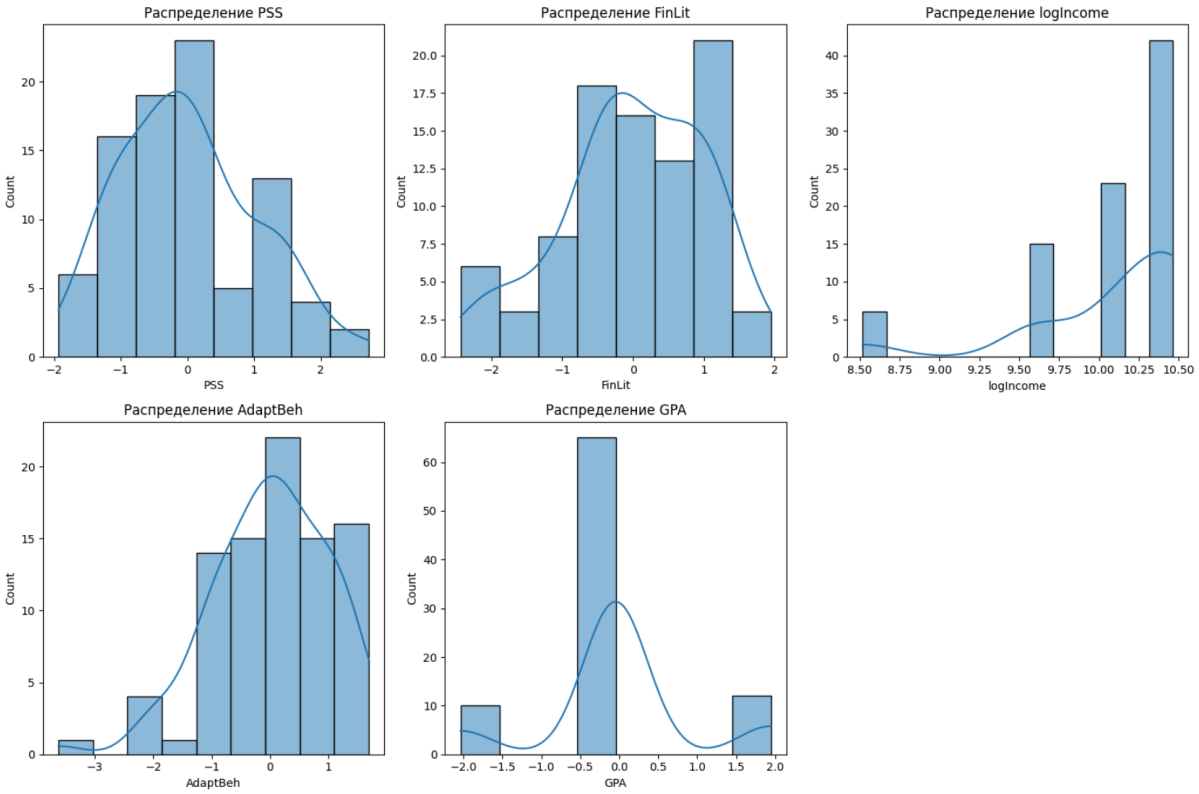


5. **Figure 5. (Moderation of income in the relationship between PSS and GPA)**



6. **Graph 6. (Visualisation of distributions)**



Appendix 3: AI Report

Was AI used: Yes

Stages in which AI has been used:

- Generating ideas and refining the research design (in the initial phase).
- Assist in formulating parts of the text.
- Academic style checking and grammatical editing of drafts.
- Support in the interpretation of statistical models.

AI tools used:

- ChatGPT (OpenAI), DeepSeek - for sentence generation, text editing and style checking.
- Grammarly - for additional grammar checking and improving academic style in English (when translating).
- Perplexity AI - Spot search and quick reference for foreign articles.

Nature of use:

- Hints and clarifications: help in formulating theoretical statements and the logic of argumentation.
- Editing: automatic correction of style and language, improving section cohesion.
- Quality control: checking the logic of models and possible errors in the description of statistical procedures.

Comment:

AI was used as a supportive tool, not replacing the research work of the participants. All sentences generated by the AI were further edited and verified.

Appendix 4: Report on the contribution of team members

Volkhina Viktoria Olegovna 30%:

- Drawing up an overall plan and assigning tasks to participants, taking into account deadlines and priorities.
- Ensuring timely communication between team members and agreeing edits as they come in.
- Work on the design of the final text of the article, including structure, formatting of references, tables and figures.
- Participate in the translation of the entire article into English, ensuring accuracy of terminology and logical structure.
- Correcting the final text of the article, checking it against the prepared graphs and charts.
- Integrating graphics into the main text so that the visualisation succinctly complements it.

Alexandra Alexandrovna Kulutnikova 15%:

- Primary data collection: conducted in-depth interviews with respondents, collected and systematised information.
- Participation in shaping the empirical part of the work (conducting interviews), including the analysis of qualitative data (transcribing and analysing interviews).
- Work on the design of the final text: structuring, inserting tables, figures, checking references, formatting to the standards of a scientific article.
- Participate in the translation of the final article into English, ensuring accuracy of terminology and logical structure.

Denis Dmitrievich Nechepaev 25%:

- Collecting and analysing quantitative data.
- Preparation of all graphs, charts and appendices to visualise the results of the study.
- Processing data and creating visuals that reflect key hypotheses H1-H3.
- Creating graphs that are as easy to understand as possible - both for specialists and general audiences.
- Participate in discussions on interpretation of graphs
- Participate in writing relevant excerpts in the Analysis and Results section.

Sofia Polyakova 15%:

- Working to harmonise the textual sections on Methodology and Analysis and Results with the visuals prepared by Denis.
- Testing the logical relationship between hypotheses, statistical inferences and graphs.
- Clarifying wording in the analysis section to eliminate gaps between text and graphical representation of data.
- Developing additional explanations for the graphs so that confirmation of hypotheses is more visual and accurate.
- Participate in the process of analysing data, to justify conclusions.

Ivan Olegovich Zdorovetsky 15%:

- Contributed most to the Literature Review section, making it logical, coherent and theoretically sound.
- Identified and filled gaps in the existing literature base by completing the list of sources and checking them for relevance.
- Participate in the process of formulating hypotheses and theoretical models.
- Checking that all references and citations are correct.
- Checking the complete list of references and correctness of design according to GOST.

- Proofread the entire text for stylistics, grammar, logical integrity and formatting.

Appendix 5: Survey questionnaire

Time stamp Your age? What is your gender? \

0 18-20 years old Female

1 18-20 years old Male

2 24-25 years old Male

3 21-23 years Male

4 18-20 years old Female

Sources of income:

0	Scholarship;
1	Part-time work
2	Parents' help
3	Freelance/work
4	Credit/loans

Form of study:

0	Budget
1	Paid

Your approximate monthly income (including scholarship, parental support, part-time jobs, etc.):

0 10,000-20,000 rub.

1 More than 30,000 rubles.

2 More than 30,000 rub.

3 More than 30,000 rub.

4 RR 10,000-20,000.

How often have you felt like you had no control over the important things in your life?

0 2 = Sometimes

1 0 = Never

2 2 = Sometimes

3 1 = Very rare

4 2 = Sometimes

How often have you felt nervous and stressed?

0 4 4 = Very often

1 3 = Quite often

2 4 = Very often

3 3 = Quite often

4 3 = Quite often

How often were you unable to handle all the things that needed to be done?

0 4 4 = Very often

1 2 = Sometimes

2 2 = Sometimes

3 2 = Sometimes

4 1 = Very rare

How often have you felt confident in your ability to solve personal problems?

0 3 3 = Quite often

1 3 = Quite often

2 1 = Very rare

3 3 = Quite often

4 3 = Quite often

How often have you felt things were going the way you wanted them to?

0 3 3 = Quite often

1 3 = Quite often

2 1 = Very rare

3 2 = Sometimes

4 2 = Sometimes

How often have you been unable to deal with annoying things in your life?

0 2 = Sometimes

1 1 = Very rare

2 2 = Sometimes

3 2 = Sometimes

4 1 = Very rare

How often have you felt like you were in control of your life?

0 2 = Sometimes

1 2 = Sometimes

2 2 = Sometimes

3 3 = Quite often

4 3 = Quite often

How often have you been angry because events didn't go according to your plan?

0 1 = Very rare

1 0 = Never

2 3 = Quite often

3 3 = Quite often

4 1 = Very rare

How often have you felt that difficulties were building up and you couldn't overcome them?

0 3 3 = Quite often

1 0 = Never

2 2 = Sometimes

3 2 = Sometimes

4 3 = Quite often

How often have you felt on top of your game?

0 3 3 = Quite often

1 3 = Quite often

2 1 = Very rare

3 3 = Quite often

4 1 = Very rare

How often do you discuss financial matters with family or friends?

0 1 = Very rare

1 3 = Quite often

2 3 = Quite often

3 3 = Quite often

4 1 = Very rare

I track my spending regularly (at least once a week).

0 1 = Very rare

1 4 = Very often

2 2 = Sometimes

3 3 = Quite often

4 2 = Sometimes

I try to plan my budget a month in advance.

0 0 = Never

1 3 = Quite often

2 0 = Never

3 3 = Quite often

4 0 = Never

I have savings (albeit small) for emergencies.

0 4 4 = Very often

1 2 = Sometimes

2 0 = Never

3 3 = Quite often

4 4 = Very often

I am familiar with the basic principles of investing (deposits, stocks, bonds).

0 1 = Very rare

1 4 = Very often

2 0 = Never

3 3 = Quite often

4 0 = Never

I try to avoid unnecessary borrowing and lending.

0 3 3 = Quite often

1 4 = Very often

2 1 = Very rare

3 4 = Very often

4 4 = Very often

I usually know how much money I have left at the end of the month. \

0 0 = Never

1 4 = Very often

2 1 = Very rare

3 3 = Quite often

4 2 = Sometimes

If I have a debt, I try to pay it off as soon as possible. \

0 4 4 = Very often

1 4 = Very often

2 1 = Very rare

3 4 = Very often

4 4 = Very often

I often make impulse purchases that I regret. \

0 1 = Very rare

1 0 = Never

2 2 = Sometimes

3 2 = Sometimes

4 1 = Very rare

I spend time learning about personal finance (reading articles, watching videos, taking courses).

0 0 = Never

1 2 = Sometimes

2 2 = Sometimes

3 1 = Very rare

4 0 = Never

When I have financial difficulties, I look for ways to solve them (I turn to teachers, banks, friends, parents). \

0 0 = Never

1 4 = Very often

2 2 = Sometimes

3 3 = Quite often

4 2 = Sometimes

Rate your level of financial literacy (from 1 to 5): \

0 4 - Above average

1 4 - Above average

2 2 - Low

3 4 - Above average

4 3 - Medium

What most often causes you financial stress? \

0 Lack of funds for everyday expenses;Nep...

1 Lack of funds for daily expenses;Nep...

2 Lack of funds for daily expenses;Nal...

3 Uncertainty about the future (employment, sti...

4 Lack of funds for day-to-day expenses;Nep...

Your grade point average: \

0 4 (good)

1 4 (good)

2 4 (good)

3 4 (good)

4 4 (good)

Do you use apps/tools to keep track of your expenses? \

0 Occasionally

1 Yes, on a regular basis

2 No, I don't use it

3 Occasionally

4 No, I don't use

Rate your overall satisfaction with your life (from 1 to 10) (1 - not at all satisfied, 10 - completely satisfied).

0 4

1 8

2 4

3 8

4 7