Analyzing the perception of students regarding administrative support, educational process quality, and institutional management within universities in Romania

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We examine Romanian university students' perceptions of administrative and institutional support, educational process quality, and institutional management, with a focus on how these dimensions shape overall satisfaction and trust in universities. The study is motivated by persistent challenges in infrastructure, teaching quality, transparency, and student representation in Romanian higher education. We conducted a cross-sectional, quantitative study using an online, self-administered questionnaire completed by N = 6,951 students from bachelor's, master's, and doctoral programs across public/private HEIs in all eight development regions of Romania. Analyses included descriptive statistics, Pearson correlations, and linear regression to assess relationships among key constructs; internal consistency was excellent (Cronbach's α = 0.928). Student satisfaction is significantly associated with the material base, teaching quality, support for research, decision-making transparency, and the quality of administrative services. Notable correlations include: transparency with research support (r = 0.604), transparency with teaching satisfaction (r = 0.565), teaching satisfaction with study-subject relevance (r = 0.532), and material base with transparency (r = 0.589). Administrative services relate to perceptions of the material base (r = 0.489). Only ~22% report high satisfaction with the educational process, and 20.7% indicate the material base needs improvement, despite over half rating it good to very good. Findings indicate that targeted investment in infrastructure, stronger institutional transparency (including participatory governance and consistent communication), and effective student representation are pivotal to improving satisfaction.

KEYWORDS

students, educational process, transparency, decision making, institutional support, student satisfaction justified

1 Introduction

This study aims to analyze the perceptions of students from universities in Romania regarding institutional and administrative support, educational process quality, and student representation in relation to managerial transparency and to identify the main aspects influencing student satisfaction.

There are several objectives that have been achieved through this research:

O1. Evaluating the level of satisfaction regarding institutional and administrative support provided by universities.

O2. Investigating the satisfaction level with the educational process and teaching interaction.

O3. Examining the perception regarding institutional management and student representation.

The study is relevant for understanding the knowledge architecture of the space represented by higher education in Romania. The need for reforms in higher education (Dima et al., 2022), the completion rate of higher education relative to the total population (Eurostat, 2024), funding requirements (Bezeriță, 2024), and university dropout rates (Petre et al., 2025) are all elements that form the foundation of the present study's motivation, in relation to a series of specific indicators outlined in the methodology. The relationships between these variables can serve as essential bases for future educational policies.

Although Romania is part of the European Union, a member of the Schengen area, and participates in major international education networks (COIMBRA, Bologna, etc.), it continues to register the lowest rates of higher education completion in the European Union. In 2023, only 22.5% of young Romanians aged 25–34 held a tertiary education degree, compared to the EU average of 43% (Eurostat, 2024). Regarding funding, Romania allocates one of the smallest percentages of GDP to higher education in the EU, and investments per student remain low compared to the European average (OECD, 2024). University dropout is another concerning issue. According to the OECD report, Romania is at risk of recording the highest dropout rate in the EU, especially among students from disadvantaged or rural backgrounds.

Moreover, the general perception of students regarding the quality of university education is moderate. According to an analysis by Ardelean et al. (2015), 67% of students believe that Romanian universities fail to provide the necessary competencies demanded by the labor market, highlighting a gap between curricular content and current economic realities. This is further reinforced by the moderate to low presence of Romanian universities in international rankings (Chifiriuc et al., 2024).

Thus, based on this data and social realities, the study is necessary in the Romanian context to observe student perceptions regarding three key dimensions in relation to universities in Romania: institutional and administrative support, the quality of the educational process and interaction with professors, and institutional management.

This scientific approach also carries an institutional dimension, as it aligns with the mission of the Romanian Agency for Quality Assurance in Higher Education (ARACIS, 2025), which is responsible for evaluating higher education institutions based on three components: management, institutional capacity, and efficiency.

The importance of this study goes beyond national borders, as the phenomenon under investigation—student perceptions of educational quality, institutional support, and academic representation—is of broad interest in the context of European educational integration and the internationalization of higher education. Furthermore, in a global context marked by academic mobility, international partnerships, and the harmonization of standards through the European Higher Education Area (EHEA), such research provides valuable insights for adaptable and replicable educational policies in other university systems facing similar challenges.

2 Literature review

2.1 Social cognitive theory

Perhaps the most important theoretical framework underpinning the present study is Social Cognitive Theory (SCT), which posits that human behavior results from a continuous and dynamic interaction between individual characteristics (such as beliefs about certain things) and contextual influences from the surrounding environment—in this case, the university environment (Luszczynska and Schwarzer, 2015). In other words, we argue that the academic environment (through various factors) significantly influences students' satisfaction with the educational process (Lent et al., 2007).

This theory has a broad scope of application. We interpret SCT as a framework for understanding the relationship between student satisfaction and a series of factors within the academic setting: institutional management, the quality of the educational process, and administrative and institutional support. Thus, students' perceptions are directly influenced by the academic environment represented by these three areas. For example, adequate support systems—including social and institutional resources—enhance student satisfaction. Studies show that perceived support from peers and academic staff can mediate the relationship between cognitive factors and satisfaction (Hu, 2024; Zhang et al., 2021).

Beyond these aspects, the study can also be framed within a number of specific theories. One of the most widely used applied theories is the SERVQUAL model (Parasuraman et al., 1988), which measures user satisfaction by analyzing the discrepancy between expectations and actual perceptions of services. This can be complemented by the Theory of Quality in Higher Education formulated by Harvey and Green (1993), which defines quality through dimensions such as exceptionality, consistency, efficiency, transformation, and fitness for purpose.

If we view the study as an exchange of capital between the educational system and the student, Social Capital Theory (Gilleard, 2020) explains these patterns of influence. Still, the Open Systems Theory (Katz and Kahn, 1978) offers a holistic framework for understanding the university as an interdependent system, where the efficiency of administrative flows, adaptability, and constant feedback are essential for achieving student satisfaction.

2.2 The concept of student satisfaction

In an era of digitalization, where students' needs and expectations are constantly evolving, higher education institutions (HEIs) must develop efficient and innovative strategies to maintain student engagement, ensure their academic preparation, and align with the ever-changing demands of the labor market. Student satisfaction is essential for institutional success (Mustapha et al., 2021). This idea is also supported by quality assurance institutions in Romania, such as the Romanian Agency for Quality Assurance in Higher Education (ARACIS, 2025) and the European Association for Quality Assurance in Higher Education (ENQA, 2025). Ensuring students' wellbeing and

engagement contributes to broader institutional objectives through student recommendations, increased enrollment, performance indicators, and overall institutional value (Masserini et al., 2019).

To achieve this objective, establishing forms of dialogue and feedback between university administration and students is necessary to better understand and assess whether student needs are being met regarding curriculum, equipment, opportunities, and teaching staff (Öz and Boyacı, 2021).

The concept of student satisfaction is a complex and ever-changing construct and a process that requires action following the feedback provided by students (Marques et al., 2025). In practical terms, it is reflected in students' evaluation of the services offered by higher education institutions, such as teaching quality, academic services, support, infrastructure, educational climate, and other factors. Most often, this is a subjective experience during the period of study and represents the perceived value of the quality of education provided by the university.

It should not be overlooked that this satisfaction may also be influenced by the type of university (Kruja et al., 2021) conducted a quantitative study in Albania (N = 554) to assess students' perception and satisfaction with services offered by public and private HEIs. The survey instrument used was the Student Satisfaction Inventory from the USA. Results revealed a significant performance gap between public and private HEIs. Public universities scored well in terms of concern for students, campus support, and student-centeredness, while private institutions excelled in academic advising, instructional effectiveness, and safety. Overall student satisfaction was found to be linked to student retention.

In recent years, the importance of student satisfaction and engagement has surpassed the issue of retention, as the responsibility for retention and engagement has shifted from the student to the higher education institution (Tight, 2020). This shift is also due to educational instability, as evidenced by high dropout rates (Lorenzo Quiles et al., 2023). A quantitative study conducted in Queensland, Australia, surveyed 209 students, and the results emphasized the importance of efficient peer relationships, institutional and academic support, and a clear sense of purpose in increasing satisfaction and reducing dropout rates (Xerri et al., 2018).

Institutional support is another important element. In a quantitative study involving 385 respondents, Zhang (2024) observed that institutional support moderates the relationship between student satisfaction and academic performance. This observation aligns with one of the objectives of the present study mentioned in the introduction—namely, the evaluation of student satisfaction regarding the institutional and administrative support offered by HEIs.

2.3 Factors that may influence student satisfaction

The factors influencing student satisfaction are complex and diverse. In addition to institutional support, students' perception of the quality of educational services represents the most influential factor in student satisfaction (Haverila et al., 2021). Moreover, (Wong and Chapman, 2023) argue that this construct is linked to three types of interactions: formal, informal, and the student–teacher relationship. A study conducted by Hanssen and Solvoll (2015) confirms this aspect, once again emphasizing the importance of improving facilities

to increase student satisfaction. A survey conducted in Norway found that the most effective improvements impacting students could be achieved in social spaces, lecture halls, and libraries. Thus, the following research hypothesis was formulated, stating that there is a significant correlation between the quality of HEI infrastructure and student satisfaction with the educational process (Hypothesis 1—H1).

Secondly, it was found that student satisfaction is also influenced by factors such as the learning environment, curriculum, social interactions, curriculum design, and retention (Cant et al., 2023). There is consensus in the literature that improving the educational process and student interaction has a significant impact on student satisfaction and wellbeing (Banjević et al., 2020; Jiménez-Bucarey et al., 2021). Furthermore, transparency policies directly influence students' trust in the institutions where they study, as shown by a study involving a sample of 6,180 students, which highlighted a significant correlation between transparency and trust (Medina and Rufín, 2015). Students' perception of transparency in teaching and learning processes can reduce performance anxiety and increase motivation, as demonstrated in a study involving students from Italy and Russia (Porshnev et al., 2021). Reduced anxiety contributes to a more satisfying educational experience, indicating that transparency is a universal construct with clear benefits for students, regardless of educational context (Porshnev et al., 2021). Therefore, based on the second objective of the research—the analysis of satisfaction with the educational process and interaction with the academic environment—a new hypothesis was formulated stating that decision-making transparency within the university significantly influences students' satisfaction with the educational process (Hypothesis 2—H2).

From an institutional perspective, research shows that HEI management can be essential for student satisfaction and wellbeing (Altinay et al., 2024). HEI management policies—including service quality, faculty profile, curriculum, research activity, economic value, and institutional image—are all associated with student satisfaction (Borishade et al., 2021; Hossain et al., 2025; Pandita and Kiran, 2023). Banjević et al. (2020) conducted a quantitative study with 10 parameters in Slovakia (N = 322) and found that non-educational factors contributed 85.9% to student satisfaction, while the educational process contributed only 11.9%. This finding has important implications for institutional management. For instance, student involvement in institutional decision-making processes influences educational outcomes and engagement levels (Perry-Hazan and Somech, 2023). Student participation in these processes positively affects life skills development, self-esteem, and social status, contributing to broader goals of student satisfaction (Enim et al., 2024). All of these have broader implications for building a positive reputation and strengthening student representation (Artyukhova et al., 2024). Based on these findings, Hypothesis 3 (H3) was formulated, suggesting that effective interaction and satisfaction with student representatives contribute to the perception of HEI management and overall student satisfaction.

In addition to these factors, there are other key elements contributing to the phenomenon of student satisfaction. For example, improving support services and offering more efficient ICT systems can significantly enhance overall wellbeing (Botoc et al., 2023). The teaching method highlights a new transition model, from traditional methods to a student-centered process that improves satisfaction,

educational experience, performance, and engagement. For instance Harangi-Rákos et al. (2022) conducted a quantitative study on student satisfaction with online teaching. Most respondents were students from UMFST Târgu Mureș ($N = 1,200$). Respondents positively evaluated the quality of materials and teacher preparation, and the overall satisfaction level was medium. They also appreciated the availability of professors after classes to discuss problems or questions. The online platform was perceived as user-friendly and useful.

Beyond these aspects, the global higher education landscape is one characterized by major changes that will shape its future (Kayyali, 2024). Modernity, artificial intelligence (Jeilani and Abubakar, 2025), and social networks will influence students' perceptions of the institutions they belong to (Snežana et al., 2021). The pressure to deliver expertise and fulfill an economic and social mission will put constant pressure on the student–university relationship (Compagnucci and Spigarelli, 2020). Meanwhile, the desire to maintain a form of elitism, confronted with financial scarcity and emerging challenges, will transform the educational landscape.

This study aims to capture both theoretical arguments and analytical findings regarding the relationship between student and university within the Romanian higher education space. The paper aligns with a series of international studies that investigate this trend, some already mentioned in the literature review.

Based on this data and grounded in Social Cognitive Theory, the present research proposes three hypotheses with implications for student satisfaction:

> *H1*: There is a significant correlation between the quality of higher education infrastructure and students' satisfaction with the educational process.
>
> *H2*: Transparency in the university's decision-making process significantly influences students' satisfaction with the educational process.
>
> *H3*: There is a significant and positive correlation between the level of interaction and satisfaction students have with their representatives and the perception of decision-making transparency within the university.

3 Methodology

Our study was quantitative, and it was based on data collection through an online questionnaire applied to Romanian HEIs between 2021 and 2023. The study was conducted with the support of the National Union of Students from Romania. This cross-sectional study provides an overview of students' perceptions at a specific point in time.

The sampling method used was of convenience, which allowed students the freedom to register with responses or not. However, the large number of respondents, $N = 6,951$ students (with variations depending on the questions), indicates that the research is rigorous and valid. Moreover, the present study benefits from extensive geographical and institutional coverage, including universities from all eight development regions of Romania. Thus, both major academic centers (Bucharest, Cluj-Napoca, Iași, Timișoara) and medium-sized or smaller cities (Brașov, Oradea, Bacău, Petroșani, Constanța) are

represented. Additionally, the sample includes both public and private universities, civilian and military institutions, with diverse academic profiles: technical, medical, economic, arts, and comprehensive universities (Table 1).

The target population consisted of students enrolled in bachelor's, master's, and doctoral programs at public and private HEIs in Romania. Given the definition of the target population, it is important to clarify why the study focused exclusively on students, without including academic staff or other categories within the educational system. The decision to analyze exclusively students' perceptions was based on their central role in the higher education system, as direct beneficiaries of educational services. Their opinions are essential in assessing institutional quality and are used as key indicators in the ARACIS standards and in European quality assurance policies (ESG). Focusing solely on this category allowed for a coherent analysis centered on the student experience at the national level. While we acknowledge the relevance of teachers' and administrative staff's perspectives, these were beyond the scope of the present study.

The distribution of respondents by study cycle and year of study provides a representative overview of student perceptions within Romanian higher education. The majority of research participants (81.4%) are enrolled in the bachelor's cycle (cycle I), followed by master's students (cycle II) with 17.7%, and a smaller proportion of doctoral students (cycle III), representing 0.9% of the sample (Education at a Glance 2024–Country notes: Romania, 2024). Regarding the year of study, the distribution is relatively balanced: 25.5% of students are in year I, 30.3% in year II, and 24.5% in year III, reflecting the standard progression of undergraduate studies. Smaller proportions are recorded in year IV (9.3%), year V (8.5%), and year VI (1.9%), which typically correspond to extended-duration programs such as medicine or engineering.

The choice of convenience sampling (Golzar et al., 2022) was based on the need to collect a large volume of data within a short period of time. This was also because of logistical constraints and the geographical distribution of students. The participation in the study was voluntary and anonymous, and the collected data were used for academic purposes only. By completing the questionnaire, respondents gave their consent for data processing. Our study was approved by the Research/Ethics Committee under decision no. 17, dated 2 February 2022, and supported by the National Union of Students from Romania under decision no. 61 date 01 May 2024.

3.1 Analysis indicators

The analysis indicators in our study were organized into three main areas. Each of them addressed a dimension of students' experiences in Romanian HEIs. The first area focuses on institutional and administrative support. It assesses student satisfaction with the university's material base (including equipment, laboratories, and infrastructure), their perception of administrative and secretarial services, and their awareness of internationalization opportunities. Additionally the existence and perceived usefulness of career counseling and guidance services were examined, as well as the availability of tutors and tutoring programs.

The second area examined the quality of the educational process and teaching interaction. It investigated the way how students evaluate the performance of teaching staff, their overall

TABLE 1 University frequency table.

University	Frequency	Percent
Air Force Academy—Braşov	162	2.3%
Ferdinand I Technical Military Academy	57	0.8%
Academy of Economic Studies (ASE)	494	7.1%
National University of Political Studies and Public Administration (SNSPA)	373	5.4%
Alexandru Ioan Cuza University of Iaşi (UAIC)	911	13.1%
Iuliu Haţieganu University of Medicine and Pharmacy (UMF)	775	11.1%
George Emil Palade University of Medicine, Pharmacy, Science and Technology (UMFST)	909	13.1%
Emanuel University of Oradea	15	0.2%
University of Art and Design Cluj-Napoca	65	0.9%
West University of Timişoara	57	0.8%
Maritime University of Constanţa	21	0.3%
University of Petroşani	158	2.3%
Titu Maiorescu University	764	11.0%
Vasile Alecsandri University of Bacău	196	2.8%
Politehnica University of Bucharest (UPB)	765	11.0%
Transilvania University of Braşov (UTBV)	660	9.5%
Technical University of Cluj-Napoca (UTCN)	330	4.7%
Gheorghe Asachi Technical University of Iaşi (TUIASI)	236	3.4%

Source: processed from database.

satisfaction with the teaching process, the level of support provided for student research and extracurricular engagement, and the relevance of study subjects in terms of both professional and personal development.

The third area analyzed student representation and institutional management, specifically examining the degree of interaction and satisfaction students have with their elected representatives and their perception of the transparency of the university's decision-making processes. In the Romanian higher education system, university decision-making processes refer to the structured and legally defined mechanisms through which strategic and academic decisions are made. These decisions are adopted by formal bodies such as the University Senate and the Administration Council, with mandatory student representation. This ensures democratic governance, transparency, and inclusivity, as defined by the Romanian Law of National Education (Law 1/2011) and enforced by ARACIS, the national quality assurance agency.

In addition to these thematic categories, the study also took into account several socio-demographic variables such as the students' year of study and their academic cycle (bachelor's, master's, or doctoral studies) to contextualize the results and enable more nuanced interpretations.

The analyzed variables have a Cronbach's Alpha coefficient of 0.928 for the 12 items, indicating an excellent level of internal consistency of the scale—meaning that the questions are highly correlated with each other and coherently measure the same psychological construct. According to standards in the specialized literature (Nunnally and Bernstein, 1994), $\alpha \geq 0.90$ are considered excellent. Such a high value suggests that the instrument is highly reliable for consistently reflecting students' satisfaction with the investigated variables.

We conducted data analysis using statistical methods. Each plays a role in interpreting the results and identifying relationships between the variables. Descriptive statistics were used first to examine the frequencies and the general trends. Pearson correlation analysis was used to explore relationships between variables to identify statistically significant connections between factors such as satisfaction with teaching, material base, administrative services, and institutional transparency.

4 Results

This analysis was conducted based on three major directions of interpretation and approach: institutional and administrative support, quality of the educational process and teaching interaction, as well as institutional management.

The first direction focuses on institutional and administrative support, which students perceive through various indicators such as the existence of career guidance services, appreciation of these services and tutoring programs, relationship with the university's administrative apparatus, access to internationalization opportunities in higher education, and satisfaction with the material base.

The second direction analyzes the quality of the educational process and teaching interaction between students and professors, considering factors like the evaluation of teaching staff, satisfaction with the teaching process, support for students in research activities, and students' perception of the relevance of study subjects.

The third approach concentrates on institutional management, examining two essential dimensions: the transparency of decision-making processes within universities and students' perception of student representation.

4.1 Institutional and administrative support

Firstly, this institutional and administrative support is highlighted through students' perception regarding the material base. Thus, according to Table 2, on a scale from 1 (very little) to 5 (very much), it can be observed that over 50% of respondents have a good to very good impression of the material base.

However, there is a significant and representative number (20.7%) for the entire student population who believe that improvements are needed in terms of the material base provided by universities. When correlating the year of study with satisfaction regarding the material base, a slight negative relationship is observed, with a Pearson coefficient of −0.036*. Thus, we can interpret that students in higher study years may have a less favorable perception regarding the material base offered by universities in Romania. This process can be interpreted through the lens of the increasingly diverse needs as students progress into higher study cycles and years.

Regarding the relationship between students and the administrative area, secretariats found that students are partially satisfied with the services provided. Therefore, based on a frequency distribution, the level of student satisfaction with the relationship with the secretariat and university administration shows that 49.6% of students (scores of 4 and 5) are satisfied or very satisfied, while 26.3% (scores of 1 and 2) are dissatisfied. The remaining 24.9% provided a neutral response. These data suggest that although most students perceive the administration positively, a significant segment considers improvements necessary in this area (Table 3).

The analysis between student satisfaction with university infrastructure and perception of the relationship with the secretariat and administration. The results indicate a moderate to strong positive correlation ($r = 0.489$, $p < 0.01$), suggesting that an efficient and accessible administration contributes to a more favorable perception of the material base.

On the administrative side, it is noticeable that deficiencies in relation to the secretariat or the apparatus serving various actions necessary for students have a negative correlation with elements such as internationalization of higher education, regarding opportunities for international mobility, especially the Erasmus+ program. The results show a weak but significant negative correlation ($r = -0.087$, $p < 0.01$), suggesting that the perception of the administration can partially influence access to information about mobility.

Information regarding international mobility is influenced by the knowledge of the existence of tutors or tutoring programs. The results show a positive correlation ($r = 0.444$, $p < 0.01$), suggesting that students who are aware of the existence of tutoring programs are better informed about international mobility opportunities.

4.2 Quality of the educational process and teaching interaction

Regarding the quality of the educational process and teaching interaction was summarized by analyzing several indicators in the field. According to the ARACIS methodology, the evaluation of teaching staff by students represents an important and necessary element in the evaluation of the educational process. The analysis of student satisfaction levels regarding evaluating teaching staff's involvement in the educational process highlights a balanced distribution of opinions, with an average score of 2.857 and a standard deviation of 1.0561, suggesting moderate response variability. From the frequency distribution (Table 4), we observe that:

- 42.0% of students provided an average score (3.0), indicating a neutral perception,
- 35.9% of respondents expressed moderate or strong dissatisfaction (scores of 1 and 2), indicating perceived deficiencies. Only 22.2% of students rated positively (scores of 4 and 5), suggesting that a relatively small percentage are satisfied with this aspect.

The cumulative percentage value shows that almost 78% of students have a neutral or negative opinion. This indicates a need for improvement in teaching staff evaluation processes and the subsequent results following this evaluation.

TABLE 2 Level of satisfaction with the material base.

Response category	Frequency	Percent
1 (very little)	458	6.6
2	967	13.9
3	2047	29.4
4	1717	24.7
5 (very much)	1,694	24.4
Total	6,883	99.0
Missing system	68	1.0
Total	6,951	100.0

Source: processed from database.

TABLE 3 The relationship between satisfaction with the material base and secretariat/administrative area elements.

Variables		Level of satisfaction with the material base	Relationship with the secretariat and administrative
Level of satisfaction with the material base	Pearson correlation	1	0.489**
	Sig. (2-tailed)		0.000
	N	6,883	5,893
Relationship with the secretariat and administrative	Pearson correlation	0.489**	1
	Sig. (2-tailed)	0.000	
	N	5,893	5,958

**Correlation is significant at the 0.01 level (2-tailed). Source: processed from database.

Response category		Frequency	Percent
Valid	1,0	663	9.5
	2,0	1831	26.3
	3,0	2,915	41.9
	4,0	915	13.2
	5,0	623	9.0
	Total	6,947	99.9
Missing	System	4	0.1
Total		6,951	100.0

Source: processed from database.

Our analysis of the correlations between this indicator and other aspects of the academic experience show significant relationships, suggesting that the perception of teacher evaluation is not independent but influenced by factors such as teaching quality (r = 0.452, p < 0.01), relevance of study subjects (r = 0.350, p < 0.01), satisfaction with the material base (r = 0.245, p < 0.01), and administrative services (r = 0.264, p < 0.01). This correlation between satisfaction with teacher evaluation and the quality of teaching suggests that an evaluation system can improve teaching methods and provide a more positive educational experience for students. Additionally, the perception of the relevance of study subjects is closely linked to how teachers are evaluated, stipulating that students associate teaching quality with the quality of academic content (Table 5).

Regarding the appreciation of the teaching process by professors, we had a total of 5,696 respondents to this question out of a total of 6,951 completed questionnaires. Data analysis reveals an average score of 3.269 and a standard deviation of 1.0557, indicating a predominantly neutral to positive perception. The majority of respondents (41.7%) rated teaching with an average score (3.0), while 40.8% expressed a high level of satisfaction (scores of 4 and 5). On the other hand, 17.6% of students provided scores of 1 or 2, signaling possible deficiencies in the teaching process.

The presence of a non-response rate of 18.1% may indicate either a lack of direct experience with the teaching process or a lack of interest in this aspect. These results suggest the need for a more detailed analysis of the factors that contribute to student satisfaction or dissatisfaction, such as teaching methodology, teacher-student interaction, clarity of teaching materials, and accessibility of teaching staff.

However, it was observed that the perception of the teaching process by professors can be influenced by the transparency of the decision-making process, the relevance of study subjects for professional development, or the university's material base (Table 6). Therefore, improving the academic experience requires an integrated approach that targets both teaching methods and university infrastructure, curriculum quality, and institutional communication.

The analysis of correlations indicates statistically significant relationships (p < 0.01). Satisfaction with the teaching process and transparency of the decision-making process (r = 0.565) suggest that students who perceive the university as transparent in decision-making tend to be more satisfied with the educational process. Satisfaction with the teaching process and the relevance

of study subjects for professional development (r = 0.532) show that a positive perception of teaching methods is closely linked to the perceived usefulness of the curriculum content, emphasizing the importance of aligning study programs with labor market requirements. Furthermore, educational resources, infrastructure, and study conditions play an essential role in students' perception of the teaching process. Satisfaction with the teaching process and the university's material base (r = 0.498) indicate that well-equipped and accessible infrastructure can contribute to improving teaching methods and providing a more positive educational experience.

Research represents a less developed subject when considering the funding and results in the international rankings of Romanian universities. Support provided to students for research activities, including material, financial, and academic resources, may vary depending on the year of study. Correlation analysis shows a weak but statistically significant relationship between research support and the year of study (r = −0.048). The weak negative relationship suggests that as students progress in their study years, the perception of research support slightly decreases. However, support provided to students in research activities, including material, financial, and academic resources, is an essential aspect of the university experience.

Correlation analysis indicates statistically significant relationships (p < 0.01) between this indicator and other variables. In relation to the transparency of the decision-making process (r = 0.604), the relationship suggests that students who perceive the university as transparent in decision-making tend to be more satisfied with research support. We interpret that efficient university management, based on clarity and accessibility to information, can contribute to improving support for students' academic activities. Satisfaction with the material base (r = 0.496) decisively influences the perception of research support, with access to laboratories, modern equipment, and financial resources being essential.

Research is also influenced by the perception of the relevance of study subjects. A student will be able to conduct good research if they feel that the discipline is relevant to their professional development. This correlation (r = 0.480) indicates that students who consider the course content relevant to their career are more likely to perceive research support as adequate. The teaching of professors influences the perception of the support provided by the university in research (r = 0.392). Two weaker, positive, but quite interesting relationships are highlighted. The relationship with student representatives can influence the perception of research (r = 0.319). A good involvement of students and vibrancy in student representation can create more transparency, a flow of information to students, and the development of future collaborations, just as awareness of the existence of career counseling and guidance services (r = 0.210) can support research activities and thus a better perception of students regarding this phenomenon. In other words, the results highlight that the perception of research support is not isolated but strongly influenced by university infrastructure, decision-making transparency, curriculum relevance, and interaction with professors and colleagues.

Student satisfaction with the relevance of study subjects for professional development is an essential indicator of program efficiency. Data analysis indicates an average score of 3.427 and a standard deviation of 1.2288, suggesting an overall positive perception but with significant variability. It is observed that 53.4% of students

TABLE 5 Influences on the level of satisfaction with the teacher evaluation process.

Variables		Level of satisfaction with the teacher evaluation process	Perception regarding administrative and secretariat services	Satisfaction with the university's material resources	Level of satisfaction with the teaching process	The study material is adequate for professional training
Level of satisfaction with the teacher evaluation process	Pearson correlation	1	0.264**	0.245**	0.452**	0.350**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000
	N	6,947	5,957	6,882	5,696	6,537

**Correlation is significant at the 0.01 level (2-tailed). Source: processed from database.

TABLE 6 Influences on the perception of the teaching process.

Variables		Level of satisfaction with the teaching process	Satisfaction with the university's material resources	The study material supports professional training	Transparency of the decision-making process in the university—do you believe it is
Level of satisfaction with the teaching process	Pearson correlation	1	0.498**	0.532**	0.565**
	Sig. (2-tailed)		0.000	0.000	0.000
	N	5,696	5,631	5,286	3,376

**Correlation is significant at the 0.01 level (2-tailed). Source: SPSS version 23.

TABLE 7 The relationship between institutional management and student representation.

Variables		Level of interaction and satisfaction with student representatives	Transparency of the decision-making process in the university—do you believe it is
Level of interaction and satisfaction with student representatives	Pearson correlation	1	0.421**
	Sig. (2-tailed)		0.000
	N	6,948	4,628
Transparency of the decision-making process in the university—do you believe it is	Pearson correlation	0.421**	1
	Sig. (2-tailed)	0.000	
	N	4,628	4,628

**Correlation is significant at the 0.01 level (2-tailed). Source: SPSS version 23.

(scores of 4 and 5) consider the study subject suitable for their professional development, indicating a high level of satisfaction, 23.5% of respondents provided an average score (3.0), indicating a neutral perception, and 23.2% of students (scores of 1 and 2) believe that the study subject is not sufficiently relevant, suggesting possible issues related to the timeliness and applicability of courses.

Bachelor's students represent the majority of respondents (80.4%) and have a predominantly positive perception, but 21.9% are dissatisfied, while master's and doctoral students have more critical evaluations, which may suggest higher expectations regarding the correlation of study subjects with labor market requirements and advanced research. Although they have been presented above, we can reiterate that the perception of the relevance of study subjects and the curriculum in general is influenced by the teaching of professors, showing that a good teacher also determines the student's appreciation for the subject.

Moreover, the relationship with the administrative apparatus is another important factor, the latter having the role of creating conducive administrative conditions and services for the educational process.

4.3 Institutional management

In terms of institutional management, two indicators were analyzed: the perception of decision-making transparency and the degree of interaction and satisfaction in the relationship with student representatives. The relationship between students' interaction with their representatives and the perception of decision-making transparency in the university highlights a moderate positive correlation (r = 0.421, p < 0.01), according to Table 7. This result suggests that students who benefit from efficient and constant communication with their representatives are more likely to consider university decision-making processes as transparent and fair.

A high level of interaction with student representatives can facilitate access to relevant information regarding institutional policies and decisions, thereby increasing confidence in the university administration. On the other hand, low or inefficient interaction can contribute to a negative perception of how decisions are made and communicated. These results underline the need to strengthen student representation mechanisms and institutional transparency. Universities could implement strategies such as organizing regular

consultations between administration and students, clear publication of academic and administrative decisions, as well as creating interactive communication channels. This could improve students' active participation in university life and strengthen their trust in the decision-making process.

The indicator of the year of study shows statistically significant negative correlations both with interaction with student representatives ($r = -0.053$, $p < 0.01$) and with the perception of decision-making transparency ($r = -0.110$, $p < 0.01$). These values suggest that as students progress in their study years, their perception of these aspects tends to become more negative. While students in the early years may have lower expectations and are more likely to view representatives and university administration in a favorable light, students in the final years or higher study cycles (master's, doctoral) may have more critical experiences, being more aware of potential decision-making system deficiencies or limitations of student representatives.

If we were to observe the strongest correlations between variables (Table 8), we can affirm the following:

a The relationship between research and decision-making transparency is the strongest, $r = 0.604$ ($p < 0.01$) - a clear and accessible decision-making process can improve students' perception of available academic resources.

b The link between decision-making transparency and satisfaction with the study subject $r = 0.578$ ($p < 0.01$) - those who perceive the university as transparent tend to be more satisfied with the relevance of the study subject.

c The degree of satisfaction with the teaching process and decision-making transparency $r = 0.565$ ($p < 0.01$) - a well-administered university with transparent decisions is more satisfied with the quality of teaching.

d Satisfaction with the material base is related to decision-making transparency $r = 0.589$ ($p < 0.01$) - a well-equipped and easily accessible university infrastructure is often associated with greater trust in the administration's ability to manage resources efficiently.

e Satisfaction with the study subject is influenced by the quality of the teaching process $r = 0.532$ ($p < 0.01$) - students who consider the studied disciplines relevant to their professional development are generally more satisfied with the quality of teaching.

f Interaction and satisfaction with student representatives are related to decision-making transparency $r = 0.421$ ($p < 0.01$) - students who have a positive relationship with their representatives are also those who perceive the university decision-making process as more transparent.

To better understand these processes, Principal Component Analysis (PCA) has extracted a principal component that explains a significant part of the data variability. This provides a clear perspective on the relationships between variables and allows for a better understanding of the factors influencing student satisfaction. The first principal component has an Eigenvalue of 3.895, explaining 32.46% of the total variability. This percentage indicates that this component can be considered a general measure of student satisfaction with education (Table 9).

This component has high loadings for several variables, which means they significantly contribute to the formation of this general satisfaction factor:

- Satisfaction with the material base (0.697).
- Satisfaction with the teaching process (0.713).
- Support for students in research (0.743).
- Study subject (0.700).
- Interaction with student representatives (0.685).
- Decision-making transparency (0.779).

These high values indicate that the educational experience, access to resources, and perception of institutional transparency are essential factors for student satisfaction. In particular, decision-making transparency and support for students in research activities have the highest loadings, suggesting that they play a central role in the overall perception of educational quality (Table 10).

TABLE 8 Correlation matrix between variables.

Variables	v1	v2	v3	v4	v5	v6	v7	v8	v9	v10	v11	v12	v13	v14
v1	1													
v2	0.235	1												
v3	0.001	−0.036	1											
v4	−0.009	−0.072	0.489	1										
v5	0.131	−0.032	−0.039	−0.087	1									
v6	−0.111	−0.058	0.284	0.265	−0.071	1								
v7	0.003	0.107	−0.186	−0.173	−0.236	−0.396	1							
v8	−0.133	−0.09	−0.032	0.066	0.444	−0.056	−0.253	1						
v9	0.156	0.05	0.245	0.264	0.17	0.076	−0.228	0.061	1					
v10	0.074	−0.057	0.498	0.428	0.169	0.183	−0.209	−0.016	0.452	1				
v11	0.026	−0.048	0.496	0.454	0.112	0.21	0.068	−0.025	0.153	0.392	1			
v12	−0.049	−0.044	0.524	0.534	−0.128	0.264	−0.183	0.126	0.35	0.532	0.48	1		
v13	0.006	−0.053	0.265	0.288	−0.062	0.093	0.085	−0.011	0.089	0.24	0.319	0.272	1	
v14	−0.033	−0.11	0.589	0.517	−0.16	0.317	−0.082	−0.071	0.134	0.565	0.604	0.578	0.421	1

Source: SPSS version 23.

TABLE 9 Total variance explained.

Component	Eigenvalues		
	Total	% of variance	Cumulative %
V3	3.895	32.460	32.460
V4	2.433	20.271	52.731
V5	0.906	7.552	60.283
V6	0.828	6.903	67.186
V7	0.717	5.979	73.165
V8	0.653	5.442	78.607
V9	0.576	4.802	83.410
V10	0.512	4.266	87.676
V11	0.472	3.937	91.612
V12	0.450	3.752	95.364
V13	0.378	3.148	98.512
V14	0.179	1.488	100.000
Extraction method: principal component analysis.			

Source: SPSS version 23.

TABLE 10 Contribution of variables to the general satisfaction factor in the university.

Variables	Component
Satisfaction with the university's material resources	0.697
Perception of administrative and secretariat services	0.619
Awareness of internationalization opportunities	0.306
Awareness of counseling and career guidance services	0.172
Appreciation of counseling and career guidance services	−0.045
Awareness of tutors' existence/Familiarity with tutoring programs	−0.010
Evaluation of teaching staff—satisfaction with the evaluation process	0.525
Level of satisfaction with the teaching process	0.713
Support for students in research—material base and financial resources	0.743
The study material is adequate for professional training	0.700
Level of interaction and satisfaction with student representatives	0.685
Transparency of the decision-making process in the university	0.779

Source: SPSS version 23.

5 Discussion

Our study generated some key takeaways and highlighted the importance of the most influential factors of student satisfaction in HEIs in Romania. First, our hypothesis regarding the relationship between the quality of the educational process and student satisfaction is confirmed (H1). We report a significant correlation between infrastructure, perceived academic value, support for research, and general satisfaction. This finding is supported by the research results of Hanssen and Solvoll (2015) study, which underscores the essential

role of HEI facilities in improving student satisfaction. In addition, H1 is also supported by Almarghani and Mijatovic (2017). They state that a well-equipped and resourceful academic environment is important in student engagement and satisfaction. Numerous studies highlight that educational infrastructure, along with other dimensions of services provided by educational institutions, significantly contributes to increasing student satisfaction. For example, Al-Yozbakey and Esmaeel (2024) emphasize the existence of a strong positive correlation between the quality of infrastructure and the level of satisfaction experienced by students, indicating the need for continuous improvement in this area. In a recent meta-analysis, Dhawan (2022) identified infrastructure—defined as an element of "physical evidence"—as a critical determinant of student satisfaction, underscoring the decisive role that material conditions on university campuses play. Sharma and Mishra (2024) add to this theoretical framework by showing that academic services and facilities provided to students are directly correlated with their overall satisfaction, reinforcing the idea that the physical environment is a defining element of a positive educational experience.

However, it is important to note that although infrastructure remains a key factor, other authors point out that administrative support and the quality of teaching interaction may, in certain contexts, have an even more pronounced impact on students' perceptions. In the same vein, Bakti et al. (2024) show that student satisfaction is influenced not only by infrastructure but also by teaching quality and the efficiency of administrative services, suggesting an integrated and balanced approach in educational policy. Thus, our hypothesis regarding a positive influence of institutional transparency on student satisfaction is confirmed (H2). Our findings show a significant correlation between these two variables. This reflects the fact that a transparent and accessible institutional administration is viewed by the respondents as an essential part of a favorable academic climate. These results align with the conclusions drawn by Perry-Hazan and Somech (2023). The authors argue that institutional image and the quality of offered administrative services influence student satisfaction. Similarly, the authors state that the participation of students in the decision-making process has a significant impact on satisfaction.

Third, the hypothesis regarding the role of efficient interactions with student representatives is sustained (H3). Data indicates a moderate, but significant correlation between these interactions, institutional management and general satisfaction. This suggests the importance of an active and well-organized student representative council, which can cultivate communication and improve trust in HEIs. These findings are supported by Mager and Nowak (2012) and Enim et al. (2024), who underscore the benefits of student participation in institutional governance regarding satisfaction and personal development. The student representation process in Romania constitutes an essential mechanism for democratic participation and active involvement of students in institutional life. According to the National Education Law no. 1/2011 (Legea Educației Naționale, 2011), students must be represented in all decision-making structures of higher education institutions, and their share in the university senate must be at least 25%. ARACIS (Romanian Agency for Quality Assurance in Higher Education) also emphasizes the importance of student involvement in evaluation and decision-making processes. The quality standards for quality assurance in higher education state that relevant studies and decisions must include the active

participation of student representatives, who are considered equal partners in the educational process (ARACIS, 2025).

Therefore, although many of the tested hypotheses are supported by previous research, the contribution of this study lies in contextualizing these relationships within the Romanian higher education system, offering updated empirical evidence and an integrated perspective on how academic infrastructure, institutional transparency, and student representation jointly influence student satisfaction.

6 Conclusion

In general, our study confirms that student satisfaction is a complex construct influenced by a variety of factors that are interconnected: infrastructure, quality of educational process, managerial transparency, and student representativeness. The presented data offers valuable insights for Romanian HEIs and stakeholders in developing an efficient strategy with the aim of improving the academic experience and responding to students' needs.

In light of the obtained results, the implications of this study for higher education institutions (HEIs) in Romania and for decision-makers are multiple and concrete. First, targeted investments in modern educational infrastructure and facilities are essential for increasing student satisfaction, in line with the National Strategy for Tertiary Education 2021–2027 (Ministry of Education, 2021) Second, strengthening institutional transparency is necessary through measures such as publishing Senate decisions and involving students in regular consultations, in accordance with the provisions of the Higher Education Law no. 199/2023 and ARACIS standards on participatory governance (ARACIS, 2025). Moreover, the findings highlight the importance of the active functioning of student councils, recommending the allocation of dedicated resources for the training of student representatives and for organizing meaningful consultations. Such an approach is supported by European policies regarding student inclusion in decision-making processes. Finally, the integration of digital systems for feedback and satisfaction monitoring can support data-driven managerial decisions, as recommended by the OECD regarding institutional efficiency in higher education (OECD, 2024).

Our study offers a clear and detailed image of the way Romanian students view administrative support, the quality of the educational process and institutional management. We highlight the complexity and the delicate relationships between these variables. The educational process of HEIs is one of the most influential factors in achieving student satisfaction. Even though more than half of the respondents have a positive opinion about infrastructure, 20.7% of students consider that there are improvements to be made in this regard. Moreover, the positive perception of the educational process drops along the study cycle. This suggests that the needs and expectations of students become more and more complex over time. We highlight the need for constant improvements regarding the infrastructure, which responds to the technical and educational requirements of students across all study cycles.

Students relationship with the institutional administration, especially with the secretary department is only partially positive. The positive correlations between tutoring initiatives and international

mobilization programs stipulate that administrative support can faciliatate access to valuable opportunities for students.

Data showed that only 22% of strudents expressed high satisfaction with the educational process. This points to the need for a reformed curriculum and imporved ways to evaluate the performace of professors that is transparent, and allows contructive feedback.

A notable aspect of student satisfaction seems to be transparency in the decision-making process on an institutional level, and the need for student representation. This stipulates that students appreciate an open and transparent management, which involves constant communication with them. This perception seems to be changing once students reach a certain period in the study cycle.

Finally, support for research activities is another significant predictor of student satisfaction. It is strongly correlated with infrastructure, transparency and relevance of curriculum. Romanian HEIs must pay attention to developing and promoting such services, because students who are advanced in their study cycles consider that HEIs offer insuficcient opportunities for resreach initiatives.

Generally, student satisfaction in Romanian HEIs is a result of a relationship between infrastructure, quality of the educational process, transparency, and student representativeness. In order to respond efficiently to the issues raised in this study, HEIs need to develop a strategy centered around real student needs that includes investments in infrastructure, educational changes, decisional transparency, and the involvement of students in the institutional life and climate. This way, Romanian HEIs can ensure a quality academic experience that supports both professional and personal development of students.

7 Study limitations

Even though our study has significant contributions in understanding student satisfaction in Romanian HEIs, we have to acknowledge several limitations. The study was based on a sample where the distribution of respondents regarding the year of the study was unequal, with most of the students being bachelors. This can influence the respondents' perceptions and the collected data.

Data collection has been carried out through a self-administrated questionnaire, which can imply a certain level of subjectivity and bias when answering, such as socially desireable anwers. In addition the study lacks longitudinal implications. It involved important dimensions of student satisfaction, however there might be other important factors that have been overlooked such as psiho-social or socio-economical aspects.

The results describe the Romanian academic context and, in consequence, generalizing results to other educational systems has to be done carefully.

Future research should focus on exploring larger, more diverse smaples, or a mixed methods approach to gain a better and a more nuanced understanding of student satisfaction in the Romanian HEI system.

The collected data is based on perceptions, which may influence the objective accuracy of the results. Additionally, there is a temporal limitation as a cross-sectional study may not capture the evolution of perceptions over time.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by the UNSR (National Union of Students from Romania) Research Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

CD: Data curation, Formal analysis, Writing – review & editing, Project administration, Validation, Software, Writing – original draft, Methodology, Visualization, Resources, Investigation, Conceptualization, Supervision, Funding acquisition. CB: Data curation, Methodology, Conceptualization, Investigation, Validation, Writing – review & editing, Supervision, Resources, Visualization, Formal analysis, Software, Writing – original draft, Project administration, Funding acquisition. AB: Data curation, Writing – review & editing, Methodology, Conceptualization, Supervision, Investigation, Writing – original draft, Software, Funding acquisition, Visualization, Project administration, Formal analysis, Resources, Validation. MA: Supervision, Validation, Methodology, Conceptualization, Investigation, Data curation, Writing – original draft, Funding acquisition, Writing – review & editing, Resources, Software, Formal analysis, Visualization, Project administration. CC: Investigation, Validation, Supervision, Conceptualization, Software, Writing – review & editing, Funding acquisition, Methodology, Project administration, Formal analysis, Writing – original draft, Resources, Data curation, Visualization.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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