



# A QUANTITATIVE ANALYSIS OF TRANSYLVANIA UNIVERSITY STUDENTS ATTITUDES TOWARDS THE RESEARCH AND DEVELOPMENT INSTITUTE OF TRANSILVANIA UNIVERSITY OF BRAȘOV

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**Abstract:** *The process of digitization has the potential to influence the behaviors of young consumers, particularly in the academic environment, specifically concerning modes of information acquisition. The present article aims to elucidate the attitudes of students at Transilvania University regarding the The Research and Development Institute of Transilvania University of Brașov (RDIT) activities. In pursuit of this objective, a quantitative research study was conducted among the students of Transilvania University of Brașov, yielding valuable insights for the academic environment. Consequently, sources employed by the youth to gather information about the university environment were identified, as well as the level of awareness of RDIT among university students. Furthermore, the article explores the students' interest in engaging in various voluntary activities within this institution.*

**JEL classification:** M31, M37.

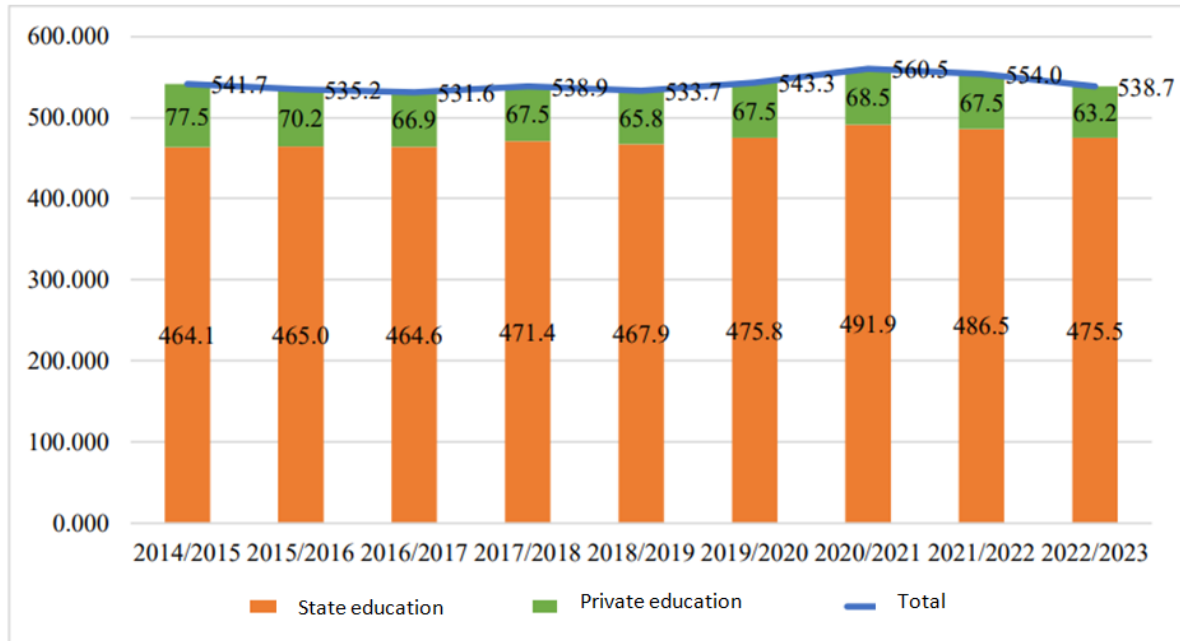
**Key words:** higher education, educational marketing, consumer behavior

## 1. INTRODUCTION

Over time, the educational market in Romania has undergone various changes. From the educational supply to the demand, all components of the market have experienced modifications. Presently, in Romania, there is a decline in the number of consumers of educational services within the academic environment, indicating the imperative to enhance the visibility of university institutions among potential clients. As depicted in the figure below (Figure 1), during the academic year 2022-2023, there was a total of 536.7 thousand students in Romania, of which 475.5 thousand were enrolled in state education, reflecting a decrease of 15.3 thousand students compared to the academic year 2021-2022. An increase was noted in



the academic year 2020-2021, with 560.5 thousand students; however, from then until the academic year 2022-2023, the number has consistently declined (Ministry of Education, 2023).



**Figure 1.** The Evolution of the Number of Students by Ownership Forms, During the Period 2014-2023 (Thousand Individuals)

Source: Report on the State of Higher Education in Romania 2022-2023

In the market of educational services, consumers can be perceived in a dual context. On one hand, they are viewed as beneficiaries of an educational service, and on the other hand, they function as consumers of tangible goods derived from the provision of the educational service itself. Two experts, Alfinito and Torres, have delineated three types of consumers of academic services. The first category is represented by the traditional student, aged between 18-24, who, upon completing high school, chose to pursue further studies, rejecting immediate entry into the workforce. At the opposite end is the so-called non-traditional student, who is over 25, employed, and often has familial responsibilities. In this case, the individual has opted to pursue academic studies to enhance career prospects. The last category is that of the 'first-generation student,' who has chosen higher education driven by parental encouragement, as the parents themselves did not have this opportunity. Consequently, these individuals live vicariously through their children's pursuit of academic aspirations (Duralia, 2019).



The main objective of the study is to identify the attitudes and opinions of Transilvania University students regarding the activities of the Transilvania University Research Institute of Braşov.

## **2. LITERATURE REVIEW**

The authors of the article titled 'Marketing of Educational Services: Research on Service Providers Satisfaction' define education as a service characterized by intangibility, inseparability, heterogeneity, and perishability. In the context of education, there is no tangible transfer of goods; the consumer essentially purchases access to education, with the benefit being the assimilation of information received through the provided services (Kalenskaya, Gafurov, Novenkova, 2013).

Both Manes and Larios-Gómez posit that educational marketing is a process of investigating social needs, with the ultimate aim of satisfying the requirements for personal development in acquiring new knowledge, as outlined in the article 'Educational Marketing as a Strategy for the Satisfaction of University Students.' Another crucial aspect emphasized by Gómez is that this type of service can be delivered both directly through face-to-face courses and indirectly through the internet, specifically in a virtual context. On the other hand, Manes underscores the importance of ethics in the promotion of educational services. Considering all these factors, Zapata contends that the significance of educational marketing substantially increases across all levels of the education sector (Gordillo et al., 2020).

Examining this concept from an alternative perspective, Lilia Cebanu delineates educational marketing as comprising three distinct dimensions. The first is the philosophical dimension, presupposing that the entirety of activities within an educational institution revolves around the client and the quality of services provided by the supplier. This service must be consistently adapted to the client's needs. The procedural dimension seeks to comprehend the concept of marketing as a 'practical activity, process, and managerial function' that is executed with great attention, taking into account the diverse requirements of consumers to meet their expectations. The last dimension is methodological and centres around the managers of educational institutions, as it focuses on various ways in which, through marketing, decision-making processes can be facilitated, and the most suitable strategies can be formulated. The ultimate objective is the satisfaction of consumer needs (Cebanu, 2020).



In the field of education, to undertake marketing activities, it is imperative for the educational institution to foremost consider that its primary function is to provide services to students. Educational institutions, therefore, require information to analyse the behaviour of their consumers and subsequently develop and implement marketing strategies aimed at maximizing the satisfaction of their needs. Informational support is an indispensable component in this process, serving both as a means of communication and support for the decision-making process (Casap, 2018).

Similar to any field, in the case of higher education institutions, there exist numerous promotional strategies that can be implemented. In Novak's perspective, one of the most effective strategies for attracting a large number of students involves disseminating information through mass media. Furthermore, the use of social networks facilitates the establishment and maintenance of relationships with students. Communities of alumni are formed, providing institutions with a means of staying in contact, and through these communities, another form of promotion arises as a result of the prospective students' habit of seeking information from these groups. Therefore, institutions of higher education manage to both approach their target audience and promote themselves through the internet and social networks (Rosyidah, et al., 2020).

According to research conducted by Kurtishi and Veseli (2017), the primary strategy influencing the decision-making process of potential consumers of educational services is the so-called 'word-of-mouth' promotion, wherein students make choices based on information received from individuals in their immediate social circles. This method is followed by direct marketing, university websites, debates, and forums (Rosyidah, et al., 2020).

### **3. RESEARCH METHODOLOGY**

The present study aims to ascertain the level of awareness regarding the Research and Development Institute of Transilvania University of Braşov (RDIT) among the students of Transilvania University. Additionally, it seeks to explore the attitudes of the university students towards the research activities conducted by the Institute.

For the execution of the quantitative research targeting the students of Transilvania University of Braşov, a survey method was employed, utilizing a questionnaire as the data collection instrument. The latter was distributed electronically among the students of Transilvania



University of Braşov in an online environment, formulated through Google Forms. The questionnaire consists of 19 questions and is structured into multiple sections. Considering the typology of the targeted population, a non-random sampling method was employed based on rational selection criteria, focusing exclusively on the students of Transilvania University of Braşov. The questionnaire was disseminated to the intended audience through online student groups.

By employing a non-probabilistic sampling method, statistical validation of the sample is not feasible.

Nine research objectives have been established, and these are as follows:

1. Ascertain the most utilized sources of information by students regarding the academic environment.
2. Measure the level of awareness of the Research and Development Institute of Transilvania University of Braşov among the students of Transilvania University.
3. Determine the expectations of students regarding the opportunities provided by the RDIT.
4. Assess the interest of students in engaging in voluntary activities within the RDIT.
5. Identify the types of voluntary activities that students would like to undertake within the RDIT.
6. Quantify the number of hours students are willing to dedicate to the RDIT for the purpose of engaging in voluntary activities.
7. Determine the level of agreement among students regarding various statements.
8. Quantify the number of students who participated in the 'Researchers' Night' event.
9. Identify the existence of a correlation between the type of education pursued by respondents and their level of agreement with various statements.

In accordance with the previously outlined objectives, research hypotheses have been formulated, comprising four general hypotheses and five statistical hypotheses.

The hypotheses are as follows:

1. A relatively high percentage of students at Transilvania University utilize the official website of academic institutions as an information source.



2. Concerning the emergence of new projects, competitions, or various activities within Transilvania University, the majority of its students prefer to be informed through the institutional email address.
3. In general, respondents would be willing to dedicate 4-5 hours per week at the Research and Development Institute of Transilvania University of Braşov for engaging in voluntary activities.
4. The majority of respondents have not participated in the 'Researchers' Night' event in the last 3 years.
5. H5: The percentage of surveyed students who are aware of the existence of the Research and Development Institute of Transilvania University of Braşov is 60%.
6. H6: The percentage of students who would like to participate in a tour organized by the RDIT is 70%.
7. H7: 50% of students at Transilvania University of Braşov would like to engage in specific voluntary activities related to their faculty within the Institute.
8. H8: There is no correlation between the academic cycle pursued by students and the number of hours they would like to spend at the RDIT for voluntary activities.
9. H9: There is no correlation between the level of agreement with the statement "I would participate in various research activities within the RDIT if funded by Transilvania University of Braşov" and the form of education pursued by respondents..

#### 4. RESULTS

The questionnaire commences with a screening question aimed at identifying respondents who are students at Transilvania University of Braşov. A total of 114 responses were obtained for this question, among which 4.4% were negative. Consequently, five respondents out of the 114 were not students at Transilvania University of Braşov (Table 1).

**Table 1.** The identification of respondents who are students of Transylvania University of Braşov

		Frequency	Percentage	Valid Percentage	Cumulative Percentages
<b>Valid</b>	<b>No</b>	5	4,4	4,4	4,4
	<b>Yes</b>	109	95.6	95.6	100.0
	<b>Total</b>	114	100.0	100.0	



Out of the total of 109 students comprising the sample, 93.6% utilize the official websites of academic institutions to obtain the necessary details. Additionally, the Facebook platform holds a high percentage, being perceived as an information source among students. Only 3 subjects (2.8%) choose to gather information from magazines and specialized brochures (Figure 2). In addition to these means, respondents have indicated that they also acquire information from faculty members, friends, as well as from the university's application.

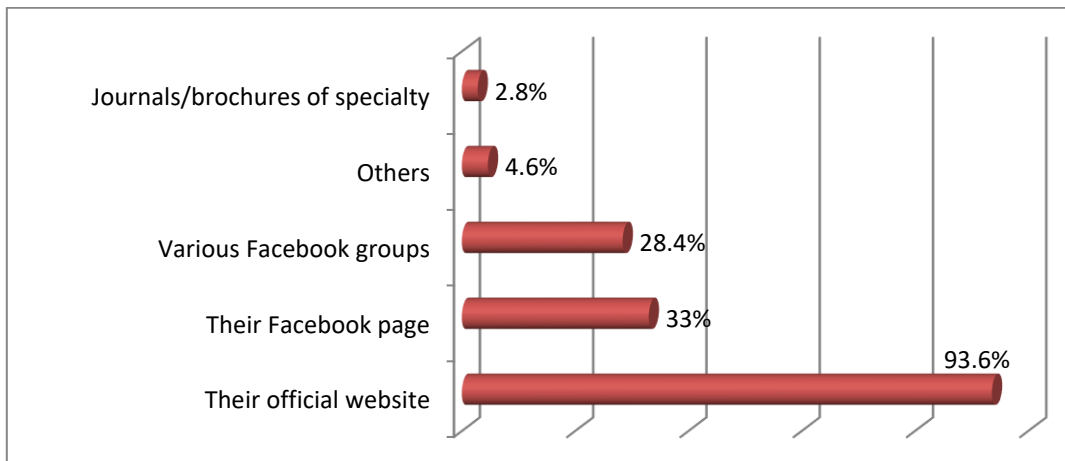
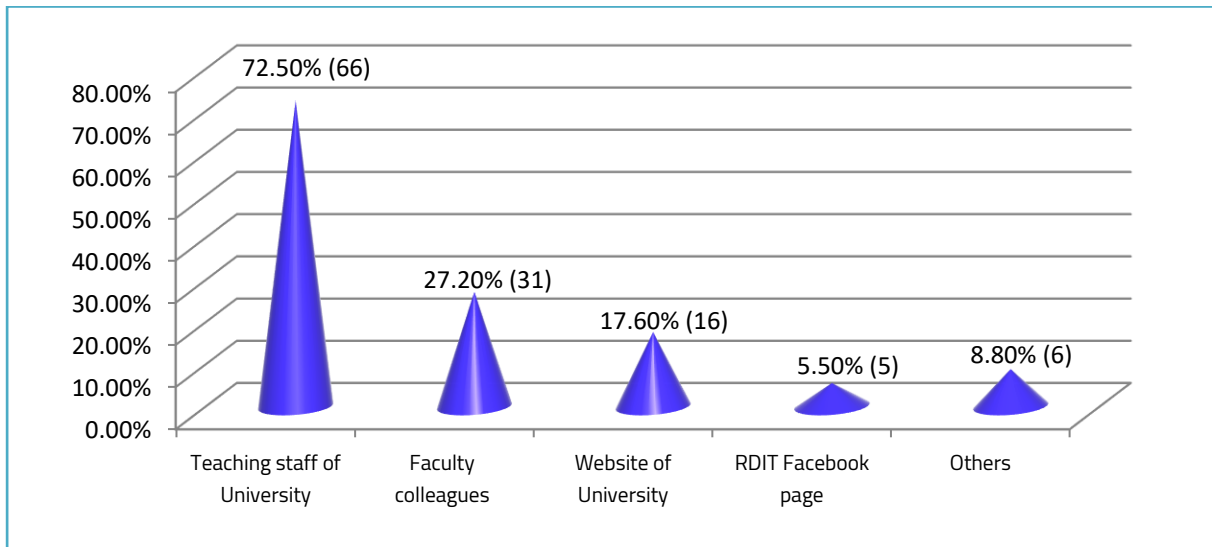


Figure 2. Sources of Information about the Academic Environment Utilized by Students

As the qualitative research revealed a low visibility of the RDIT, the investigation sought to understand how students became aware of its existence. Figure 3 illustrates that more than half of the students, specifically 66 of them, were informed about the RDIT's existence by professors. Only 21 respondents obtained details from online sources, with only 5 from the unit's Facebook page. Other sources of information were also identified, including individuals engaged in activities within the institute or through seminars and courses conducted at the research center.



**Figure 3.** Sources of information regarding The Research and Development Institute of Transilvania University of Braşov

According to the results obtained from qualitative research, before establishing a promotional strategy for the Institute, the object to be promoted must be clearly defined. Therefore, in the quantitative research, the focus was on understanding the expectations that students have regarding the opportunities offered by the Institute. Their opinions are presented in Figure 4. The majority of respondents would like to engage in practical activities and research under the guidance of qualified individuals. 7.4% of subjects consider transportation a relatively important factor since the positioning of the Institute makes access difficult for students. Similarly, respondents desire well-equipped facilities and laboratories tailored to the specifics of their faculties.

Only 3 students express the desire to engage in volunteer activities, with the same percentage of respondents mentioning professional development activities. Figure 4 highlights that 5 students mentioned the term 'job opportunities,' indicating their preference for the Institute to provide employment prospects.



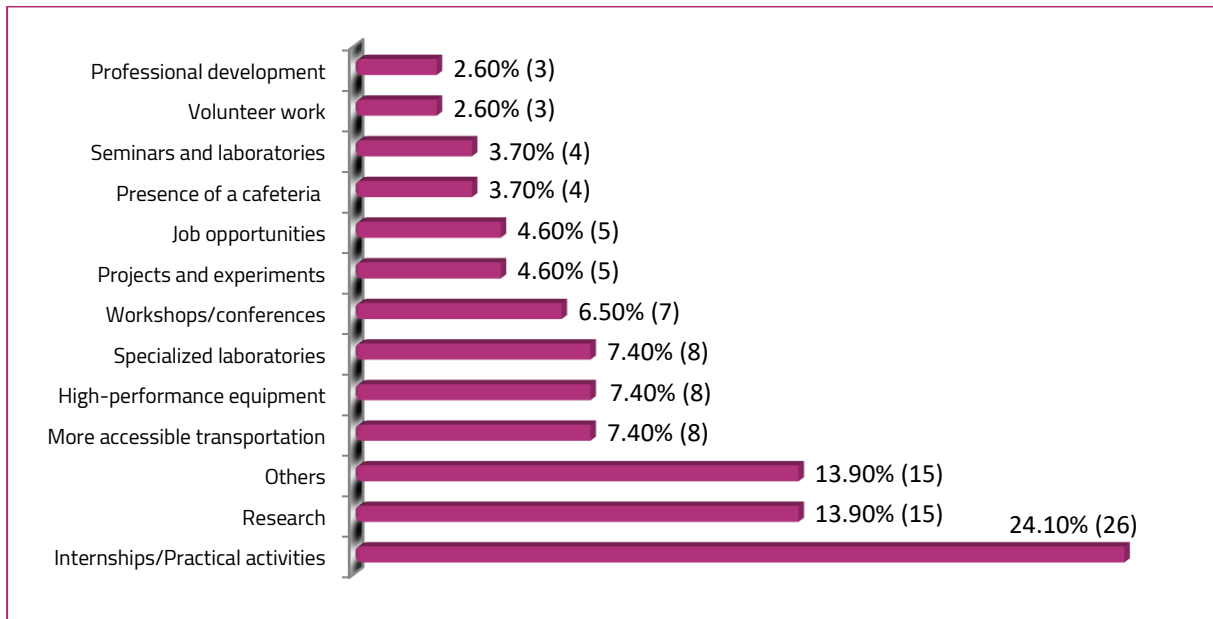


Figure 4. The opportunities students would like RDIT to provide

The benefits that students anticipate from the RDIT are diverse and vary according to individual needs, with the majority focusing on practical activities in appropriately equipped laboratories, as well as employment opportunities. The following will test the statistical hypotheses.

**H5: The percentage of surveyed students who are aware of the existence of the Research and Development Institute of Transilvania University of Braşov is 60%.**

To test the first statistical hypothesis of the quantitative research among students, the t-student test was employed, and the results obtained in SPSS are presented in Table 2 and Table 3.

Table 2. Descriptive statistical indicators of the t-Student test

	N	Mean	Std. Deviation	Std. Error Mean
Do you know about the existence of RDIT?	109	0.8349	0.37302	0.03573

At the level of the 109 respondents, the mean of the binary characteristic is 0.83, indicating that 83% of the respondents are aware of the Research and Development Institute.

Table 3. Results obtained following the application of the t-Student test

	Test Value = 0.6					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper



<b>Do you know about the existence of RDIT?</b>	6.573	108	0.000	0.23486	0.1640	0.3057
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The calculated significance level in this case is equal to 0, which is lower than the theoretical level (0.05). Therefore, we reject hypothesis  $H_5$ . Thus, it can be guaranteed with a 95% probability that at the population level under investigation, the percentage of students who are aware of the existence of the Research and Development Institute of Transilvania University of Braşov is different from 60%.

**$H_6$ : The percentage of students who would like to participate in an ICDT tour is 70%.**

**Table 4.** Descriptive statistical indicators of the t-Student test

	N	Mean	Std. Deviation	Std. Error Mean
<b>Participation in a tour of RDIT</b>	109	0.6239	0.48666	0.04661

In Table 4, it can be observed that at the level of the 109 respondents, the mean of the binary characteristic is 0.62, indicating that 62% of the subjects would like to participate in a tour of the Transilvania University Institute.

**Table 5.** Results obtained following the application of the t-Student test

	Test Value = 0.7					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
<b>Participation in a tour of RDIT</b>	-1.634	108	0.105	-.07615	-.1685	0.0162

Comparing the calculated significance level in Table 5 (0.105) with the theoretical level (0.05), it can be observed that the latter is smaller, and in this situation,  $H_6$  is accepted. Therefore, we can guarantee with a 95% probability that at the population level under investigation, 70% of the respondents would like to participate in a tour of the Research and Development Institute of Transilvania University.



**H7: 50% of the students at Transilvania University of Braşov would like to engage in voluntary activities specific to their faculty within the Institute.**

In the table below (Table 6), it can be observed that the mean of the 109 students who expressed their desire to volunteer at Transilvania Institute is 0.64. Thus, it can be stated that 64% of the respondents would be willing to engage in volunteering. In this case, the percentage of standard deviation is 48%.

**Table 6.** Descriptive statistical indicators of the t-Student test

	N	Mean	Std. Deviation	Std. Error Mean
<b>The willingness to volunteer at the RDIT</b>	109	0.64220	0.481566	0.046126

To test hypothesis 7, the t-Student test was applied (Table 7), and the minimum significance level value obtained was 0.003. This is lower than the theoretical value (0.05), thus rejecting hypothesis H7. Therefore, we can guarantee with a 95% probability that at the population level under investigation, the percentage of students at Transylvania University who would like to engage in voluntary activities at the Institute is different from 50%.

**Table 7.** Results obtained following the application of the t-Student test

	Test Value = 0.5					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
<b>The willingness to volunteer at the RDIT</b>	3.083	108	0.003	0.142202	0.05077	0.23363

Subsequently, the statistical hypothesis concerning the correlation between the students' study cycle and the number of hours they are willing to spend in the Institute for volunteering was tested. The following hypotheses were verified:

**H8: There is no correlation between the study cycle pursued by students and the number of hours they would like to spend at RDIT for voluntary activities.**

In Table 8, it can be observed that the highest percentage of students willing to spend less than 4 hours per week on volunteer activities belongs to the master's degree cycle (39.1%). The



majority of doctoral students stated that they would be willing to dedicate between 4-5 hours per week for this purpose. More than 8 hours of volunteering per week would be considered by only 3 undergraduate students. Overall, the highest percentage of students (50%) would prefer to engage in volunteer activities within a range of 4-5 hours per week.

Table 8. Contingency table based on absolute and relative frequencies

			Academic cycle			Total
			Bachelor's	Master's	Doctorate	
Time spent within RDIT	Less than 4 hours per week	Count % within Academic cycle	10 22.7%	9 39.1%	1 33.3%	20 28.6%
	4-5 hours per week	Count % within Academic cycle	24 54.5%	9 39.1%	2 66.7%	35 50.0%
	6-8 hours per week	Count % within Academic cycle	7 15.9%	5 21.7%	0 0.0%	12 17.1%
	More than 8 hours per week	Count % within Academic cycle	3 6.8%	0 0.0%	0 0.0%	3 4.3%
Total		Count % within Academic cycle	44 100.0%	23 100.0%	3 100.0%	70 100.0%

There are differences in percentages among the three groups (types of study cycles), suggesting an association between the variables. To test this hypothesis, the Chi-square test was employed. The results obtained are presented in Table 9.

Table 9. The results of the Chi-Square test

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	4.949 <sup>a</sup>	6	0.550
Likelihood Ratio	6.423	6	0.378
Linear-by-Linear Association	1.827	1	0.176
N of Valid Cases	70		

After analyzing the above table, it can be observed that the calculated  $\chi^2$  value is 4.949, and the calculated significance level is 0.550. The latter being higher than the theoretical level of  $\alpha=0.05$ , we will accept the hypothesis  $H_0$ , according to which we cannot guarantee with a 95% probability that there is a connection between the two variables. Therefore, the type of study cycle does not have an influence on the number of hours students are willing to spend at RDIT for voluntary activities.



**H<sub>9</sub>: There is no correlation between the agreement level regarding the statement 'I would participate in various research activities within RDIT if they were funded by Transylvania University Brasov' and the form of education followed by the respondents.**

In Table 10, it is highlighted that the percentage of students following an on-site form of education (52.4%) who fully agreed with the statement in question is different from that of distance learning students (57.1%) who attributed the same rating to this aspect. Thus, we can assert that there is a correlation between the two analyzed variables.

**Table 10. Tabel de contingență pe baza frecvențelor absolute și relative**

			Form of education		Total
			Full-time	Distance Learning	
Research funded by Transylvania University of Brasov	3	Count % within Form of education	2 3.2%	0 0.0%	2 2.9%
	4	Count % within Form of education	28 44.4%	3 42.9%	31 44.3%
	5-Acord total	Count % within Form of education	33 52.4%	4 57.1%	37 52.9%
Total		Count % within forma de învățământ	63 100.0%	7 100.0%	70 100.0%

For testing the significance of this relationship at the level of the researched population, the Kolmogorov-Smirnov test was used, and the results are presented in Table 11.

**Tabel 11. Results of the Kolmogorov-Smirnov Test**

		Research funded by Transylvania University of Brasov
Most Extreme Differences	Absolute	.048
	Positive	.048
	Negative	.000
Kolmogorov-Smirnov Z		.120
Asymp. Sig. (2-tailed)		1.000

$$D_{calc} = 0,048 = 4,8\%$$

$$D_{alpha} = 136 * \sqrt{[(63+7)/(63*7)]} = 54,18\%$$

Considering that  $4.8\% < 54.18\%$ , hypothesis H<sub>9</sub> is accepted, and thus, we cannot guarantee with a 95% probability that there is a connection between the form of education followed by students and the degree of participation in various research activities within RDIT if these were funded by the Transylvania University of Braşov.



## 5. CONCLUSIONS

A first significant conclusion that is highly beneficial for the Institute of Research and Development is that a very large number of students, namely 93.6%, use the official websites of university institutions to obtain the details they need. Therefore, for greater visibility, the Institute should focus primarily on its website, as well as on social media platforms, given that Facebook is often considered a reliable source of information. Nevertheless, RDIT is known to 83% of the respondents.

Conclusions regarding the ways in which respondents learned about the Institute of Research and Development have highlighted the crucial role of professors at the Transylvania University in informing students. A total of 72.50% of subjects first heard about RDIT from their academic instructors. It can be argued that, in this case, one of the oldest promotion techniques (word-of-mouth promotion) has been employed, which is simultaneously one of the most credible and impactful methods. Making a comparison between the means of information commonly used by students regarding the academic environment and those employed specifically for RDIT, it is evident that they differ. The official website of Transylvania University of Braşov, for instance, was mentioned by only 16 of the surveyed students.

Another aspect that RDIT should take into consideration pertains to the fact that 24% of respondents would like to engage in practical activities within the institute. Additionally, 14% of them have expressed interest in research, 6.5% in workshops and conferences, while 7.4% of subjects deem the equipping of laboratories with state-of-the-art equipment as important. In light of this information, the university's institute could initiate several actions to implement the students' expectations, thereby fostering increased activity within RDIT.

Currently, the opportunity to engage in volunteer activities within the institute is not widely known, although, according to quantitative research, 64% of respondents express a willingness to volunteer. Most of those interested would be willing to dedicate between 4 and 5 hours per week to such activities.

In a general conclusion, RDIT should pay increased attention to the activities that could be conducted within the center, especially focusing on the means of informing students about these activities. It is evident that respondents tend to be receptive to such activities.



The objectives of the quantitative research were achieved at the end of the entire process. Regarding the quantitative research conducted among students, a limitation was noted due to the exclusion of students from all 18 faculties and all forms of education. Students from non-attendance education were also absent. It should be mentioned that the number of respondents was relatively small.

An important limitation encountered is imposed by the typology of the researched population, as a non-random sampling method had to be used, leading to the impossibility of extrapolating the research results.

**CONFLICTS OF INTEREST AND PLAGIARISM:** The authors declare no conflict of interest and plagiarism.

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