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Enhancing Students' Entrepreneurial Competencies through Extracurricular Activities—A Pragmatic Approach to Sustainability-Oriented Higher Education

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Abstract: Entrepreneurship can provide a creative, disruptive, problem-solving-oriented approach to the current economic, environmental, and social challenges of the world. This article aims to provide an analysis about the way universities can have an impact on developing entrepreneurial competence in students through extracurricular activities. The research relies on a questionnaire survey of students at the University of Petrosani, who participated in a range of entrepreneurial activities both online during the COVID-19 pandemic and face-to-face afterwards. The methodology consisted of applying principal component analysis to reduce the dimensionality of the indicators, followed by classification of the respondents through cluster analysis and training of a feedforward neural network. After finishing the network-training process, the error was minimized, resulting in three classes of respondents. Furthermore, based on the three classes, follow-up conclusions, policies, and decisions can be issued regarding the perception of entrepreneurship at the societal level, which is beneficial for academia and entrepreneurs, as well as for future research undertaken in this field. The key conclusion of our research is that entrepreneurship education is a real facilitator of the transition to sustainable entrepreneurship. Students perceived meeting successful entrepreneurs as being among the most effective extracurricular activities, assessing online activities as useful, and the field of study proved to be an important factor in their entrepreneurial intention.

Keywords: entrepreneurship education; entrepreneurial competence; entrepreneurial extracurricular activities; business sustainability; entrepreneurial intentions; principal component analysis; cluster analysis

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1. Introduction

Entrepreneurship is a complex phenomenon that can be found throughout the entire economy, and in recent decades, it has reached an increasingly well-defined position in economic theory, given its important role in the development of the world economy.

At present, economies are fighting for economic development and growth, and the spread of entrepreneurship plays an outstanding part within business-environment sustainability. The Global Entrepreneurship Monitor 2022/2023 shows that governments consider the encouraging of new entrepreneurship as a major political goal, not only from the perspective of its contribution to business development and to the creation of new jobs, but also from a social perspective and from the perspective regarding environmental concerns. Under such circumstances, entrepreneurial competences and the development of entrepreneurial behavior are extremely important, as the process represents the initial stage of effectively building a business. This stage enables entrepreneurs to excel in a very competitive and dynamic market and contribute to the Sustainable Development Goals [1].

Consequently, business sustainability depends on the quality of the original conception of an idea, and education is a fundamental vector for growth and development [2]. Starting from the argument that a constant concern in higher education is education and increasing the entrepreneurial competence of students [3], the aim of this paper is to complete the literature on entrepreneurship education with opinions regarding the influence that entrepreneurial projects applied in universities as extracurricular activities have on the development of entrepreneurial skills. The starting point of our research was the implementation of projects financed with the aim of developing entrepreneurial competences in students ("EU—ENTREPRENEUR—increasing the participation of students from vulnerable categories in undergraduate study programs through entrepreneurial innovation" contract POCU/379/6 /21/, project code 125144, project co-financed by the European Social Fund through the Human Capital Operational Program, as well as projects financed from the Institutional Development Fund CNFIS-FDI-2021-0213 "Competitiveness, Initiative, Creativity with SAS UPET" and CNFIS-FDI-2022-0109 "Dream, Dare, Act" with SAS UPET!"), projects that inspired us to deepen the analysis of the way that students from the University of Petroșani acquired entrepreneurial skills through extracurricular activities carried out during the pandemic and immediately after that period (2020-2022). Starting from the general goal of this paper, namely, to identify the ways in which the entrepreneurial potential of students can be stimulated, we considered that the main research questions (RQ) underlying the present study are the following:

- (RQ1): Did the meetings with entrepreneurs have a positive impact on the entrepreneurial attitude of the students?
- (RQ2): Is the use of extracurricular activities implemented through projects accepted by students as a form of entrepreneurship education?
- (RQ3): Has the pandemic been a period of changing attitudes towards the development of business ideas and increasing the entrepreneurial intention of students?

The paper is organized as follows:

Section 1 is the introduction and contains a brief preamble regarding the main issues addressed in the content of our research, highlighting the role attributed to entrepreneurship in the global context of accelerated business development since the beginning of the millennium.

Section 2 is dedicated to a literature review regarding entrepreneurial education in universities carried out through increasingly diversified and complex extracurricular activities, with an essential role in increasing entrepreneurial skills and reshaping the entrepreneurial mindset of students, who represent the future generation of entrepreneurs. We also emphasize a few dimensions of the regulatory framework of entrepreneurship education in the European Union and Romania in order to highlight the importance of entrepreneurship education and some concerns regarding its level of efficiency.

Section 3**,** Material and Methods, puts forward the main statistical techniques employed and the results provided by the analysis of the 324 questionnaires applied to students within target groups of entrepreneurial-education projects. The authors expose within the content of this section, certain crucial approaches that were used to design the research process, to select the relevant statistical variables, to analyze the collected data, and to highlight the empirical results. To this end, we made use of the SAS Enterprise Guide software, version 8.2, released in 2020.

Section 4, Discussion, outlines a broader perspective on the research results by identifying three classes of students with different attitudes towards entrepreneurship and towards the extracurricular activities they participated in, which enables their different behavior to be outlined based on their fields of study.

Section 5 includes the main conclusions of our study, which were drawn considering the answers provided to our research questions. Furthermore, we bring to focus a few other interesting objectives that we propose for further research endeavors that we intend to initiate in the same field.

2. Literature Review

2.1. Approaches to Entrepreneurship Education

Many approaches in the literature [4] show that the most important component of entrepreneurial education falls to universities and their specific programs, designed for students to acquire the knowledge and skills necessary to start a business, on the one hand [5], whereas on the other hand, they allow students to better assess their intention and potential to pursue an entrepreneurial career [6]. Tommy and Pardede (2020) showed that university training is essential to developing the motivation levels and capabilities of graduates to engage effectively in entrepreneurial activity [7], and Turker and Sonmez (2009) postulated that entrepreneurial education and university education play a major role in shaping entrepreneurial intention among students [8]. Furthermore, entrepreneurial education is crucial to developing an entrepreneurial way of thinking and skills [9], which should ensure the problem-solving capacities, innovation, and initiative needed in almost every job.

Frequently, a positive impact of entrepreneurship-education courses or programs in universities has been the intention to start a business [10] and the attractiveness and perceived feasibility of starting firms with innovative products and services [11], depending on the students' background and initial perspectives on entrepreneurial intention [10]. The effects of university entrepreneurship education are visible, and entrepreneurs with higher education have more employees than their non-graduate counterparts, invest more in business development, have better financial performance, and scale faster [12], even though more effort is required in order to overcome their aversion to entrepreneurial risk [9]. Furthermore, some research suggests that alongside the external social-environment factor, such as formal or informal institutions and perceived social support, students' non-cognitive abilities are also relevant to entrepreneurial intention [13].

Another perspective on entrepreneurship education shows that there are differences in the approach of entrepreneurship and the expected effects of entrepreneurship education based on countries or regions. Thus, in the US, entrepreneurship generally refers to the formation of entrepreneurs who develop firms oriented towards significant growth [14], so this entrepreneurial model is not universally applicable throughout the world [15]. In Europe, entrepreneurship is "equated with small and medium-sized enterprises (SMEs) and entrepreneurship education focuses on functional management skills for small firms" [16]. The objective of entrepreneurial education in European universities is to develop entrepreneurial skills that support the behavior of citizens in society and provide a basis for entrepreneurs to develop a social activity or a company [16].

Even though entrepreneurship has been taught for over 60 years in business schools, engineering schools, and universities, [17] the chronological imprint is important in universities. The difference in approach derives from the history of entrepreneurship education, which, for example, in the US, was introduced in 1947 at Harvard Business School, and by 2008, more than 5000 entrepreneurship courses were offered in two- and four-year institutions in the United States. In Europe, and especially in Central and Eastern European countries, most universities implemented compulsory courses or extracurricular activities for entrepreneurship education after 1990. In 2008, the European Commission on Entrepreneurship in Higher Education highlighted that only 48% of European universities provided entrepreneurship education [18].

Regardless of the region in which they operate and the programs developed, universities are engines of regional economic development, and, over time, it has been proven that elite universities are more successful at developing and exploiting entrepreneurial capital, unlike many other universities that have only obtained modest results, even after changing organizational structures, incentive systems, and strategic priorities [19]. There are studies that show that university education has the potential to increase the effectiveness of the entrepreneurial education of students and that universities are increasingly involved in the development of the business environment, thus contributing to the creation of an entrepreneurial mentality and a positive attitude of individuals towards entrepreneurship [19–21].

More and more universities are in the process of strategic development at all levels in order to evolve into an engaged and entrepreneurial university with a substantial impact on economic and societal growth [22].

Consequently, we can state that in the context in which entrepreneurship is considered highly relevant for sustainable economic growth [23], it is a necessity that the number of entrepreneurial-educational programs [24], curricula related to entrepreneurship [25], and extracurricular activities [26] for entrepreneurial education in universities continuously develop.

The transfer of knowledge, attitudes, and skills acquired in the education system through entrepreneurial education from universities to the economic system materializes in the creation of new companies and their viability.

2.1.1. Extracurricular Activities in Universities

Most of the studies related to extracurricular activities converge to show their positive impact on the development of professional and transversal skills, which help students in the context of integration into the labor market [27]. In the last decade, opinions in the literature have also indicated that specific extracurricular activities can be implemented in universities and that they can have effects on the entrepreneurial skills of students in any field of study. Even if most opinions converge to demonstrate the positive effects [28] between extracurricular activities and entrepreneurial intentions, some authors have identified an unwanted effect by which some students reduce their ability and intention to start a business [29], and sometimes the effect on entrepreneurial intention is negative [30].

However, identifying educational activities that can help students build their entrepreneurial spirit and capabilities is especially important for students with limited business experience. Therefore, this poses a challenge to identify activities that complement the formal curriculum and involve new actions and experiences, which can be organized inside or outside universities [10], such as business mentoring, entrepreneurial workshops, entrepreneurial clubs and societies, innovative competitions, business incubators, etc. [31], as presented in detail in several scientific works:

- Entrepreneurial games prepare participants to solve real-life problems and improve collaborative learning, and their main purpose is to show how a company works [32].
- Entrepreneurial ideas and business-plan competitions enable students to develop their presentation skills and confidence through participation and networking and extend the theory of experiential learning in entrepreneurship education [33].
- Meetings with entrepreneurs who can become models allow students to gain the knowledge needed to be an entrepreneur [34] and have a positive effect by creating an environment that triggers entrepreneurial behavior [35], so successful entrepreneurs can be real models for young people in terms of influencing their entrepreneurial attitude and intention [36].
- Business mentoring in which the mentor provides expert information and expresses positive expectations is a protective and encouraging behavior that helps the mentee feel special and determines the strengthening of their self-confidence [37].

Extracurricular activities need to be approached differently for students in different fields of study. Thus, in the last decade, an intention towards entrepreneurship has been frequently found among students in the field of engineering sciences, being influenced by technological development. Law and Breznic (2017), following an applied study on a group of Hong Kong students, showed that it is strongly influenced by innovation [38] and is more evident in engineering students than those studying non-engineering fields. The same conclusions were also drawn by Sumarwati et al. [39], who also found a significant difference between students from different study programs, namely, engineering and non-engineering, in terms of the level of entrepreneurial tendency.

In conclusion, universities expand their preoccupations in the field by including additional responsibilities of entrepreneurial education, in line with the current needs of the economic sectors, to provide future generations with a new entrepreneurial impulse.

2.1.2. Entrepreneurial Competences

According to Tu et al. [40], stimulating entrepreneurship and changing entrepreneurial education are required because they may help achieve excellence in economic development and diminish the persisting gap between the ratio of potential entrepreneurs and active entrepreneurs. In that respect, the importance of entrepreneurial education increases, and it should be more individually tailored, as one cannot talk about a single entrepreneurial profile or personality; it is important that entrepreneurial-education programs enable the correlation of the entrepreneur's features with the entrepreneurial skills required so that each skill is developed. The part played by entrepreneurial competences has been identified as a specific group of competences relevant to the exercise of successful entrepreneurship [41]. In accordance, some authors consider that entrepreneurial competences represent a group of competences, skills, features, and other such capacities that are relevant for building entrepreneurship. According to Silveyra, these competences are grouped into four categories: entrepreneurship, management and business, human resources, and interpersonal skills [42]. In his study, Tittel showed that the main categories of entrepreneurial competences that have been pinpointed are as follows: domain-specific competences, personal competences, and relational competences. The most diverse ones are domain competences, which include, besides management competences, skills that regard recognizing opportunities and organizational and communication skills [43].

With regard to entrepreneurial skills, Jardim [44] put forward a reference framework with three categories: skills that enable the creation of something new (where we can find creativity and innovation; spirit of initiative; self-efficacy and resilience), skills that provide solutions that effectively add value to customers (strategic planning and evaluation; problem-solving and decision-making; transformational leadership), and skills that indicate the ability to differentiate yourself from others (clear and visual communication; teamwork and networking; digital communication). Peschi et al. [45] created an integrative framework for entrepreneurial education based on seven essential and teachable entrepreneurial-thinking skills to form future leaders: problem solving, tolerance for ambiguity, failing forward, empathy, creativity with limited resources, responding to critical feedback, and teamwork approach, which, together with the associated pedagogical methods and tools (such as a flipped-classroom approach, experiential-learning activities, and open educational resources), help to develop such skills. Irrespective of their structure, we are able to assert that the portfolio of entrepreneurial competences changes over time, correlated with the fact that entrepreneurship is a dynamic process of vision and change [46]. At present, one of the most indispensable skills for entrepreneurs to drive economic growth and ensure sustainability is their capacity to adapt to change [47]. Other authors have shown that all entrepreneurs should understand and implement data and abilities that regard the efficient use of the newest informational technologies while developing their capacity to innovate [48].

The study of entrepreneurial competences usually starts from the analysis of the entrepreneurial behavior and attitude of a sample of individuals to whom we apply questionnaires containing quantitative and/or qualitative items. The data collected are processed through various methods by means of specialized software; thereafter, principal component analysis is applied in order to decrease the indicators' dimensionality, which is followed by the classification of respondents through cluster analysis and the training of a feed-forward neuronal network. At present, a very important trend regards the collection of data from an analysis basis that is more inclusive and complex due to data collection from social networks. In this new digital era, users' thinking is expressed on digital platforms and media and is called user-generated content (UGC). During the last decade, UGC has been used in research with a view to collecting data regarding the experience described as online comments and reviews on online platforms, which, subsequently, may be processed through latent Dirichlet allocation (LDA), which is able to select subjects from a database containing the qualitative reviews of clients and through neural connection analysis to analyze the groups of users that interact.

2.2. Concerns Regarding the Institutional Framework for the Development of Entrepreneurial Education in Romania

After 1990, the development of the market economy, correlated with institutional capacity building, ensured a favorable environment for entrepreneurship development. Obviously, its development changed significantly with the opening offered by the acquisition of the EU member-state status, so after 2007, the promotion of entrepreneurship materialized by increasing the transparency and predictability of the business environment [49], diversifying financing sources, increasing the competitiveness of businesses, developing logistics and transport services, and, last but not least, improving entrepreneurship education, all of which are correlated and stimulated by the legal and methodological framework created at the European Union level for entrepreneurship education and the stimulation of entrepreneurship development.

Concerns for creating a portfolio of tools to develop entrepreneurship have been the subject of various communications, analyses, and reports [50–52] of many member states, as well as at the level of the European Union [53], and what intensified these efforts was the onset of the most severe economic crisis in the last 50 years, in 2008.

Europe needs more entrepreneurs, more sustainable enterprises, and jobs; therefore, efforts have been continuously made to develop specific skills through sustained entrepreneurial education. Thus, at the beginning of 2013, in the Entrepreneurship 2020 action plan, the European Commission proposed as the first field of action entrepreneurial education and training to support the growth and creation of enterprises [52], in which, unlike other documents previously analyzed or issued, the need to develop entrepreneurial skills was emphasized by increasing the number and quality of entrepreneurial studies and was complemented by other strategic directions, namely, the promotion of entrepreneurial culture in EU countries and changing citizens' perception of entrepreneurship.

In 2016, the EU Commission developed EntreComp: The Entrepreneurial Competence Framework, which showed what it means to be entrepreneurial in all aspects of life and set out the importance of developing entrepreneurial skills to face economic, social, and cultural challenges. This framework allowed, in addition to increasing the number of entrepreneurs, to create a bridge between the world of education and that of labor [54] because graduates with entrepreneurial skills are more creative in their job search [55].

Education and entrepreneurial skills were also mentioned in the 2018 European Framework [56], where it was shown that coordinated approaches to entrepreneurship education are required at all levels of the education system.

Efforts of the European Union regarding entrepreneurship education are complemented by the United Nations Sustainable Development Goals (SDGs), which aim to approach entrepreneurship education in a sustainable manner. Achieving the SDGs will end poverty, protect the planet, and ensure prosperity for all by 2030. SDGs 4 and 8 aim for sustainable development through high-quality entrepreneurial learning and development (L&D). The development of entrepreneurship is also supported by decent work [57], economic growth, and the promotion of development-oriented policies [58].

The alignment of entrepreneurial education with the European legislative framework was a necessity, considering the context of stimulating entrepreneurship in Romania. As is known, compared to other countries, Romanians have shown a weak entrepreneurial culture [59] due to the lack of entrepreneurial education and the lack of a stimulating entrepreneurial environment during the entire period of communism, i.e., over 40 years, when the notion of private ownership did not exist and there were not even basic forms of entrepreneurial education. After 1990, the elements of entrepreneurial education were missing or, in many situations, entrepreneurial education was carried out by people without specialized training and without teaching practical knowledge, the emphasis being on theoretical concepts, without stimulating a favorable attitude towards entrepreneurship. This is why the need for entrepreneurial and financial education is evident for Romania, from the primary and secondary to the university level of education.

In this context, European regulations have been included in Romanian pre-university education since 2002, when the Ministry of Education and Research introduced the entrepreneurial-education discipline into high-school education and stimulated the establishment of training companies that aim to develop the entrepreneurial spirit of students by simulating the processes of real companies [54]. In addition, it is worth mentioning the expansion of the entrepreneurial-education program run by Junior Achievement Young Enterprise, which, in Romania, was implemented in more than 1890 educational institutions and engaged over 254,000 pupils and students.

After 2013, more and more universities in Romania included entrepreneurship-specific courses in the curricula of many fields of study, aiming to comply with the Entrepreneurship Action Plan 2020 adopted by the European Commission in the same year. In Romanian higher education there is a visible effect of the inclusion of courses related to entrepreneurship in the university curriculum and of the establishment of student entrepreneurial societies, as well as of the implementation of various extracurricular activities to stimulate the entrepreneurial intention of students. In order to produce entrepreneurial competences in a short period of time, as required by the constantly changing socioeconomic environment within Romanian universities, student entrepreneurial societies [60] have been organized since 2017. Their objective is to support, develop, and encourage the entrepreneurial spirit in the university environment for students and graduates regardless of the fields of study, thus highlighting the need to develop interdisciplinary entrepreneurial programs [61].

In this process, an accelerating factor in universities is the implementation of European projects that allow the financing of extracurricular activities and through which the portfolio of activities intended for entrepreneurial education is much more diversified. Worthy of mention in this context are those carried out through the Regional Operational Program, Priority Axis 6—Education and skills; the Student Entrepreneur Scholarship, which aims to increase the attractiveness of educational offers, with an important influence on the increase of entrepreneurial skills; and Innotech Student, which aims to finance entrepreneurial schemes of students that are innovative and bring real added value.

3. Methodology

The research methodology assumed that, based on the answers from the questionnaire, we would find an efficient grouping of respondents and observe for each class formed the impact of the extracurricular activities within the projects. The research methodology included the following stages: coding and verification of indicators; applying the principal-component-analysis (PCA) technique for indicator sets using the SAS Enterprise Guide software package; building a data set for the application of the clustering technique, this being formed by the main components found in the previous step and the indicators that did not participate in the PCA; and an initial classification of the participants' answers, also using SAS Enterprise Guide and refining the result by applying the training of a classification neural network. By using the SAS Enterprise Miner program package, the neural network was trained and the scoring functions were obtained. The classes and were then built and the results were interpreted.

3.1. The Selection of Variables

In trying to identify the most effective activities and methods to increase entrepreneurial skills, we applied a questionnaire through which students participating in the target groups of several projects expressed their opinions regarding the organization of these activities. The projects we referred to were EU—ENTREPRENEUR, aimed at increasing the participation of students from vulnerable categories in undergraduate-study programs through entrepreneurial innovation; CNFIS-FDI-2021-0213 "Competitiveness, Initiative, Creativity with SAS UPET"; and CNFIS-FDI-2022-0109 "Dream, Dare, Act with SAS UPET!," and were carried out between 2020–2022 within the University of Petroșani. The questionnaire was sent to 400 bachelor's and master's students enrolled in various fields of study, such as

economic sciences, engineering sciences, administrative sciences, and social sciences. We received 324 questionnaires, which represented a collection rate of over 80%.

Before the quantitative research, we carried out a qualitative study to check the theoretical model of the research, and considering the characteristics of the respondents, i.e., students from the target groups of the projects carried out in the university and the nature of entrepreneurial extracurricular activities, we determined 7 thematic blocks (A—assessment of the level of skills acquired; B—the impact of meetings with entrepreneurs; C—evaluation of entrepreneurs' experiences; D—appreciation of extracurricular activities; E—influence of the pandemic on the entrepreneurial intention of students; F—form of interaction; G—effectiveness of online activities) that included specific questions that could be evaluated by the respondents on a 5-point Likert scale.

The questions in the questionnaire were correlated with aspects found in the specialized literature, and some were adapted by the project experts. Thus, for the evaluation of the interaction with entrepreneurs, the questions were taken or adapted according to the study by Lafuente [62], which showed that the level of entrepreneurial activity can be explained by the presence of entrepreneur models in an area, and the research by Boldureanu [36], who published a study on entrepreneurial models conducted with students. In order to assess the effects of extracurricular activities on some types of entrepreneurial competences, information from Arranz's study [29] was adapted to the extracurricular activities that took place in projects with students from the University of Petroșani, such as entrepreneurial workshops, presentation of business ideas, etc. Since most of the extracurricular activities took place online, we tracked the quality of online interaction and the authors of the paper adapted questions about the technical aspects of conducting online activities [63], the content of online meetings, communication with the virtual community, the psychological safety of the participant, and their comfort [64].

As previous mentioned, the questionnaire was sent in two stages to 400 respondents studying economics, engineering, administrative sciences, and social sciences. In the first stage of pre-testing, a pilot questionnaire was sent to 43 students and experts within the projects, and, after a reliability analysis of the completion and clarity of the questions, the initial questionnaire was revised. In the second stage, the new questionnaire was sent to 357 respondents, for whom the anonymity and confidentiality of the collected data were guaranteed.

In determining the survey sample size, a 95% level of confidence was expected, which presupposed that 95 out of 100 random samples would display the general-population values within the boundaries of the pre-established margin of error (e = 4.85%). Keeping in mind that the total number of bachelor's students enrolled at the University of Petrosani reached the value of 2801 individuals and the z-score value equaled 1.96 in the case of the 95% confidence level, we assessed the sample size by using the following formula:

$$n = \frac{\frac{z^2 \cdot p \cdot (1-p)}{e^2}}{1 + \left[\frac{z^2 \cdot p \cdot (1-p)}{e^2 \cdot N}\right]} = \frac{\frac{1.96^2 \cdot 0.5(1-0.5)}{0.0485^2}}{1 + \left[\frac{1.96^2 \cdot 0.5(1-0.5)}{0.0485^2 \cdot 2670}\right]} = 357$$

After gathering the data from 357 individuals from the projects' target groups, 33 respondents who had skipped at least one mandatory question from our questionnaire were identified. Therefore, after removing non-response biases, the research focused on 324 students who had given complete and correct answers to our questionnaire.

In order to measure the internal consistency of the questions in the questionnaire, to avoid problems of collinearity between variables, and to capture the maximum variability of the data, we used the Cronbach's-alpha indicator [65], which can have values in the range of [0;1]. A high value of this indicator would show that the questions in the questionnaire were more reliable. We applied the Cronbach's-alpha indicator to the entire table with the respondents' answers to the questionnaire and to each indicator chosen in the analysis (Table 1). The value of the indicator at the level of the entire questionnaire

was 0.941 (>0.7, minimally acceptable), which indicates that the internal consistency of the survey was excellent.

Table 1. Cronbach's alpha coefficient with deleted variables.

Deleted Variable	Raw Variable		Standardized Variable	
	Correlation with Total	Alpha	Correlation with Total	Alpha
I1	0.6526	0.9399	0.6663	0.9497
I2_1	0.7627	0.9379	0.7883	0.9486
I2_2	0.7700	0.9378	0.7960	0.9486
I2_3	0.7452	0.9380	0.7729	0.9488
I3_1	0.7432	0.9384	0.7696	0.9488
I3_2	0.7091	0.9387	0.7442	0.9490
I3_3	0.7294	0.9382	0.7626	0.9489
I4_1	0.6636	0.9387	0.7012	0.9494
I4_2	0.7198	0.9382	0.7459	0.9490
I4_3	0.7132	0.9385	0.7432	0.9490
I4_4	0.6270	0.9391	0.6457	0.9498
I4_5	0.6489	0.9390	0.6646	0.9497
I4_6	0.6977	0.9383	0.7219	0.9492
I4_7	0.7225	0.9381	0.7492	0.9490
I4_8	0.6994	0.9385	0.7263	0.9492
I5_1	0.4927	0.9404	0.4773	0.9512
I5_2	0.5702	0.9394	0.5701	0.9504
I5_3	0.5387	0.9398	0.5191	0.9509
I5_4	0.2125	0.9436	0.1846	0.9535
I5_5	0.6740	0.9383	0.6624	0.9497
I5_6	0.4257	0.9416	0.4131	0.9517
I5_7	0.2413	0.9430	0.2000	0.9534
I5_8	0.2770	0.9436	0.2610	0.9529
I5_9	0.0029	0.9470	−0.0148	0.9551
I6_1	0.5334	0.9397	0.5515	0.9506
I6_2	0.4907	0.9401	0.4776	0.9512
I7_1	0.7341	0.9377	0.7264	0.9492
I7_2	0.6479	0.9386	0.6365	0.9499
I7_3	0.6430	0.9386	0.6254	0.9500
I7_4	0.7277	0.9379	0.7217	0.9492
I7_5	0.5905	0.9393	0.5824	0.9503
I7_6	0.7361	0.9377	0.7284	0.9491

The Cronbach's-alpha coefficient was calculated for the raw and standardized data after removing each indicator. If the value decreased after removing a variable from the structure, then that variable was highly correlated with other variables on the scale. In our case, the values of the Cronbach's-alpha coefficient were kept somewhat constant; they had no significant changes, neither on the raw data nor on the standardized data. This indicated that all the indicators could be kept in the analysis, as there were no correlations.

Consequently, the indicators we considered in our analysis in order to estimate the impact of extracurricular activities were centralized and coded according to the Cruz-Sandoval model [66], emerging from 32 questions regarding extracurricular activities as tools of entrepreneurial education that were carried out with the students in the projects (Table 2).

The results of this study are linked to the possibility of designing a series of instruments closely related to the identification of the most effective activities for increasing the entrepreneurial competence of students. That is why the indicators tracked the impact of meetings with entrepreneurs from the perspective of the influence they had on entrepreneurial intention, the importance of experiences presented by entrepreneurs at meetings, evaluation of the most effective tools used in the interaction with entrepreneurs, and the influence of the pandemic on the intention to start/develop a business.

Table 2. Assessment of input indicators.

Thematic Block	Indicator	Item	Question
Assessment of the level of acquired competences	Evaluate the effect of project activities on entrepreneurial competences	I1	Do you think that, by participating in the activities of the projects carried out in the university, you increased your entrepreneurial competences?
The impact of meetings with entrepreneurs	Evaluate the impact of UP entrepreneurs	I2-1	Evaluate the impact of meetings with entrepreneurs who are graduates of the University of Petrosani (UP).
	Evaluate the impact of local entrepreneurs	I2-2	Evaluate the impact of meetings with local entrepreneurs and from the area adjacent to the university.
	Evaluate the impact of successful entrepreneurs	I2-3	Evaluate the impact of meetings with other successful entrepreneurs.
Evaluation of entrepreneurs' experiences	Personal life experiences	I3-1	Evaluate the impact of personal life experiences presented by entrepreneurs at meetings.
	How to choose a business idea	I3-2	Evaluate the impact of how to choose a business idea presented by entrepreneurs at meetings.
	Business development and management	I3-3	Evaluate the impact of the personal example of business development and management presented by entrepreneurs at meetings.
Appreciation of extracurricular activities	Exchange of experience	I4-1	Evaluate the exchange of experience used in the project to increase entrepreneurial competence.
	Entrepreneurial workshop	I4-2	Evaluate the entrepreneurial workshop used in the project to increase entrepreneurial competence.
	Debates	I4-3	Evaluate the debates used in the project to increase entrepreneurial competence.
	Presentation of business idea	I4-4	Evaluate the presentation of business ideas used in the project to increase entrepreneurial competence.
	Complementary entrepreneurship courses	I4-5	Evaluate the complementary entrepreneurship courses on the platform used in the project to increase entrepreneurial competence.
	Entrepreneurial-reading evenings	I4-6	Evaluate the entrepreneurial-reading evenings used in the project to increase entrepreneurial competence.
	Organization of business events together with other universities	I4-7	Evaluate the organization of business events together with other universities used in the project to increase entrepreneurial competence.
	Handbook of good entrepreneurial practices	I4-8	Evaluate the handbook of good entrepreneurial practices used in the project to increase entrepreneurial competence.
Evaluation of how the pandemic period influenced you regarding the initiation/development of a business	Creating a business plan	I5-1	I have made a detailed plan of a business that I will develop soon.
	Identification of business ideas	I5-2	I have thought of many business ideas.
	Investment propensity	I5-3	I have done a lot of research to become an investor without getting involved in business management.
	Business is risky	I5-4	I have realized that it is too risky to develop a business.
	Analysis of the business environment	I5-5	We have analyzed the entrepreneurial environment and business evolution.
	First business idea	I5-6	It was the period when I thought for the first time that I might open a business.
	Closing business	I5-7	I closed or suspended the business I had.
	Continuing the business	I5-8	I continued my activity at the business I already had.
	Low propensity towards entrepreneurship	I5-9	I am not interested in the entrepreneurial field.
Form of interaction	Non-online interaction	I6-1	Face-to-face meetings
	Online interaction	I6-2	Online meetings
Effectiveness of online activities	Access to many online meetings	I7-1	It allowed me access to many online meetings.
	Participating in debates	I7-2	I was not nervous participating in the debates.
	Using chat for questions	I7-3	I was able to use the chat for questions/observations without getting emotionally involved.
	Suitable schedule	I7-4	The timings of the activities were suitable.
	Online-transmission quality	I7-5	The quality of the online transmission affected the efficiency of the meetings.
	Efficient organization	I7-6	I had access to a lot more useful information by doing online activities.

3.2. The RPROP Learning Algorithm

In order to provide substantiated answers to our research questions, the data collected from the 324 questionnaires were processed by principal component analysis (PCA), which is a multivariate analysis that reduces the complexity of data sets while preserving the

covariance of the data and is a statistical tool used in modern data analysis [67]. By applying the RPROP algorithm, a very fast iterative process is generated that requires more repetitions than other techniques implemented in SAS Enterprise Miner. The algorithm uses a learning rate for each weight, adjusting them all during training, and this rate changes depending on the sign changes of the partial derivatives in two successive iterations.

Weight adjustments are made according to the formula:

$$\delta^{(n)} = -\Delta_i^{(n)} \cdot \delta^{(n+1)}, w^{(n)} = w^{(n-1)} - \Delta_i^{(n)} \cdot w^{(n+1)}, \quad (1)$$

where $\Delta_{min} \leq \Delta_i^{(n)} \leq \Delta_{max}$

$\delta^{(n)}$—iterative step at the nth iteration;

$\Delta_i^{(n)}$—updated weight (the step size) at the nth iteration.

The updated $\Delta_i^{(n)}$ at the nth iteration is determined as follows:

$$\Delta_i^{(n)} = \begin{cases} \eta^+ \cdot \Delta_i^{(n-1)} if \frac{\partial E^{(n-1)}}{\partial w_i} \cdot \frac{\partial E^{(n)}}{\partial w_i} > 0 \\ \eta^- \cdot \Delta_i^{(n-1)} if \frac{\partial E^{(n-1)}}{\partial w_i} \cdot \frac{\partial E^{(n)}}{\partial w_i} < 0 \\ \Delta_{max} if \Delta_{n-1}^{(n)} > \Delta_{max} \\ \Delta_{min} if \Delta_{n-1}^{(n)} < \Delta_{min} \end{cases}, \quad (2)$$

where $\begin{cases} g^{(n)} = \frac{\partial E^{(n)}}{\partial w_i} \text{is the curent gradient} \\ g^{(n-1)} = \frac{\partial E^{(n-1)}}{\partial w_i} \text{is the previous gradient} \end{cases}$

The learning rate $\Delta_i^{(n)}$ decrease by a factor of η^- every time the gradient or the partial derivative of the updated weight changes signs, indicating that the last update was too big and that the algorithm has gone over a local minimum. An updated learning rate $\Delta_i^{(n)}$ is slightly increased each time the gradient does not change signs between each successive iteration to accelerate convergence in fairly flat regions.

3.3. Analysis of Empirical Results

The principal-components technique was applied to each data set from which the principal components that brought the maximum information were extracted. Thus, problems of collinearity between the variables were avoided and the maximum variability of the data was captured. PCA was applied indicator sets I4, I5, and I7 in order to reduce the dimensionality and, implicitly, the calculation speed for future analyses.

After applying the PCA technique to the set of indicators from the I4 indicator component, the correlation matrix (Table A2 in Appendix A.1) contained mostly values higher than 0.5, which indicates that there was a significant direct statistical link between variables and that principal component analysis could be applied to reduce dimensionality. Thus, I4-2 was strongly positively correlated with I4-3, I4-7 was strongly positively correlated with I4-6, I4-3 was strongly positively correlated with I4-1, and I4-5 was strongly positively correlated with I4-4 (Appendix A.1). After calculating the eigenvalues of the correlation matrix and retaining the main components that contained the maximum amount of information based on an accepted error (greater than 80%), the first three main components were kept (Table A3 of Appendix A.1), which concentrated 86.15% of the information.

For indicator set I5, the same algorithm was applied, and from the correlation matrix (Table A6 in Appendix A.2) it can be seen that indicator I5-3 was strongly positively correlated with I5-1, I5-2, and I5-6; indicator I5-9 was strongly positively correlated with indicators I5-4 and I5-7; indicator I5-2 was strongly positively correlated with I5-5; and I5-7 was correlated with I5-8. After the calculation of the eigenvalues of the correlation matrix, the first five components with an informational percentage of 85.70% were kept for further analysis (Table A7 of Appendix A.2).

For indicator set I7, from the correlation matrix (Table A10 of Appendix A.3) it can be seen that indicator I7-4 was strongly positively correlated with indicators I7-1 and I7-5, I7-1 was strongly positively correlated with I7-6, and I7-2 was strongly positively correlated with I7-3. The first two main components were kept in the analysis because they brought 87.50% of the information (Table A11 in Appendix A.3).

The next step in the methodology was to form the set of indicators and to apply cluster analysis in order to group the answers.

Cluster analysis refers to data-analysis techniques for structure and class discovery [68] in order to identify the way in which different objects can be associated in several distinct groups that present similar characteristics. The software product SAS Enterprise Guide, version 8.2, released in 2020, was used for this. The clustering algorithm used was Ward, and the method was minimum-variance cluster analysis. This algorithm allows the realization of a first grouping of the responses to the questionnaire, thus creating homogeneous, distinct groups, with a maximum distance between them and a minimum distance between the objects of a single group. After applying the algorithm to the data, a grouping graph of the objects was built (Figure 1). The cut on the graph was carried out at the threshold level of 0.05 and three distinct, homogeneous, and quite distant groups were obtained.

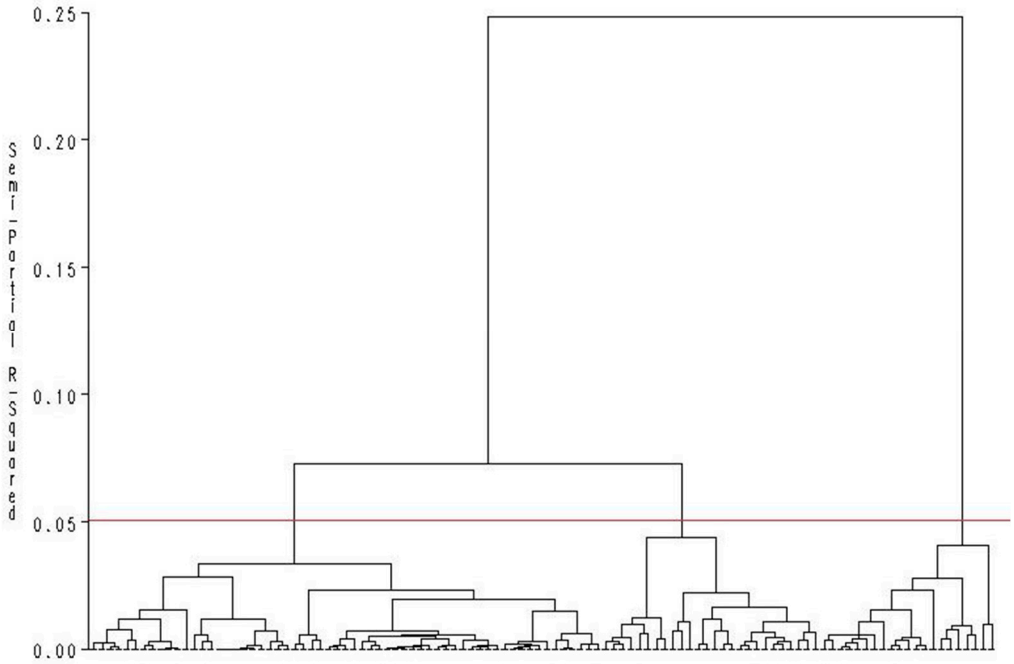

Figure 1. Cluster dendogram provided by the SAS Enterprise Guide version 8.3.

After applying Ward's algorithm to the data, a grouping graph of the objects was generated (Figure 1). The cut on the graph was carried out at the 0.05 threshold level and three distinct groups were obtained that were homogeneous and quite far from each other. Of course, at the theoretical level there can be many types of groupings, implicitly cutting levels of the graph. For example, if it were cut at the level of 0.03, several groups would be obtained, but very close to each other, so the objects would have very similar characteristics. If the graph were cut at the level of 0.20, two distinct classes would be obtained, but the elements in either group would not be homogeneous. In Appendix A.4 the structure of each obtained class can be seen.

The next step in the proposed methodology for solving the problem was the training of a classification neural network with the help of the SAS Enterprise Miner software, version 15.2. The network we proposed was feed-forward, multilayer type, with three layers: a hidden layer of neurons, 19 neurons in the input layer, and three neurons, one for each class found in the previous cluster analysis, in the output layer. The retrieved data were

randomly divided into three categories: 40% network-training data, 30% test data, and 30% training-network-validation data.

By training the neural network, the aim was to minimize the classification error, the objective function being maximum likelihood (maximum belonging to a class). The weights in the output layer and the thresholds (bias) were chosen randomly. The training algorithm was of the RPROP type. Before starting the process of training the neural network, the coefficients of the scoring functions were determined as follows: The coefficients of the hidden layer of neurons can be seen in Table 3; the output layer of the network included Class_1 = 0, Class_2 = 0, and Class_3 = 0; and the activation thresholds for the two layers had the following values: for the hidden layer −0.046, 0.160, −0.176, 0.104, −0.074, 0.054, −0.063, 0.136, −0.003, and 0.014 and for the output layer 0.185, −1.248, and −1.204.

Table 3. The initial weights calculated from the input layer to the hidden layer (H).

	Hidden-Layer Neurons									
	H1	**H2**	**H3**	**H4**	**H5**	**H6**	**H7**	**H8**	**H9**	**H10**
I1	−0.001	0.017	−0.011	−0.027	−0.040	−0.002	−0.016	−0.035	−0.048	−0.004
I2_1	−0.002	0.004	−0.013	−0.004	−0.021	0.023	0.018	0.005	0.016	−0.008
I2_2	−0.006	0.014	−0.024	0.033	0.017	−0.009	0.015	−0.002	−0.016	0.021
I2_3	−0.005	−0.024	0.013	−0.005	0.002	0.043	0.039	0.003	0.012	−0.019
I3_1	0.002	0.011	−0.018	0.009	−0.009	0.033	0.008	0.009	0.007	−0.004
I3_2	0.011	0.034	0.037	0.029	−0.014	0.012	0.007	0.023	0.032	−0.022
I3_3	−0.035	0.042	0.009	0.018	0.013	−0.007	−0.006	0.028	−0.046	0.015
I6_1	0.018	−0.026	−0.033	−0.019	−0.001	−0.014	0.028	0.019	−0.025	−0.011
I6_2	0.013	−0.036	−0.008	0.006	−0.013	−0.011	0.022	−0.001	−0.028	−0.025
PRIN1_I4	0.004	−0.032	0.047	0.024	−0.040	0.015	0.001	−0.010	−0.031	0.024
PRIN1_I5	−0.033	−0.026	0.007	−0.018	−0.025	0.053	0.016	0.023	−0.067	0.025
PRIN1_I7	0.010	0.008	−0.035	0.035	−0.009	0.024	0.015	−0.003	−0.011	0.006
PRIN2_I4	−0.015	−0.026	−0.039	−0.013	0.015	−0.015	−0.002	−0.002	0.036	0.018
PRIN2_I5	0.039	0.012	0.014	−0.002	0.024	−0.018	0.030	0.008	−0.013	0.001
PRIN2_I7	0.001	−0.001	−0.011	−0.011	0.014	0.028	0.008	−0.016	0.013	0.008
PRIN3_I4	0.022	−0.010	−0.056	−0.002	0.005	−0.038	−0.023	−0.028	−0.009	−0.009
PRIN3_I5	0.014	−0.018	0.007	0.024	−0.029	−0.038	−0.009	−0.029	0.002	0.021
PRIN4_I5	0.007	−0.018	0.004	0.008	0.008	−0.019	−0.016	−0.042	−0.050	0.021
PRIN5_I5	0.019	−0.012	−0.024	0.016	−0.005	−0.021	−0.015	−0.067	−0.026	−0.011

After finishing the process of training, validating, and testing the neural network, 100 epochs were found, and the error decreased from 0.293 to 0.001. After the training process of the neural network was successfully completed, the scoring functions, for future use of the already-trained neural network, had the shape depicted in Appendix A.4.

The neural network decreased the object-classification error, and the structure of the classes changed as follows (Appendix A.4): class 1 contained, by transfer from class 3, the additional objects P42, P150, and P258; class 2 contained the additional objects P149 and P257 by transfer from class 3; and class 3 had no additional objects.

4. Discussion

The implemented neural network allowed for the identification of three classes of respondents that we will present from the perspective of both the respondents' profile and the indicators chosen for the classification.

- Class 1 contained answers from respondents with the following characteristics: mostly up to 30 years old (62.9%) female (79.03%), and living in urban areas (67.74%). This class contained over 80% of bachelor's/master's students with average grades above 8, had the highest percentage of students who had had at least one experience in the field of entrepreneurship in high school and/or middle school (27.42%), and had the highest share of students who had positive examples in their family regarding the development of a business or freelance activities (50%), and, unlike the other two classes, it stood out for the fact that 77.73% of all bachelor's/master's students in the field of engineering sciences were in this class.
- Class 2 included the highest proportion of respondents with the following characteristics: over 30 years old (67.69%) and female (81.54%). This class contained the highest percentage of grade averages below 8 (32.31%) and the highest percentage of bachelor's/master's students in administrative sciences (46.15%) and economic sciences (44.62%). Compared to the other two classes, it was noted that this class had the lowest percentage of students who had had an entrepreneurship experience in high school and/or middle school (9.23%) and the highest percentage of students who did not have positive examples regarding the development of a business or freelance activities (86.15%).
- Class 3 contained more than half of the respondents under the age of 30 (57.54%), those living mostly in an urban environment (87.67%), and those studying economic and social sciences and with grade averages above 8 (71.24%). From the perspective of the respondents who had had an experience in the field of entrepreneurship in high school and/or middle school, the percentage of 24.66% was similar to that of the respondents in class 1 (27.42%), and compared to the other two classes, there was an average level of positive examples regarding the development of a business or freelance activities (28.77% versus 50% for class 1 and 13.85% for class 2).

The evaluation of the interaction with entrepreneurs, the methods used to increase entrepreneurial competence, and how the pandemic period had an influence on the students' intention of developing a business shows that the average level of importance for each indicator was the highest in class 1 and the smallest in class 2, with class 3 falling between class 1 and class 2. The average values of the indicators recorded in each group are presented in Table 4.

The analysis of the answers from class 1 showed that 88.71% of the students in this class appreciated the most that the projects in which they were involved brought a high value of entrepreneurial competence and stood out for an appreciation of the entrepreneurs who are graduates of the University of Petroșani (4.85) and who shared their personal life experiences and how they had developed their business (4.87). Among the tools used for interaction with entrepreneurs, the students appreciated as the most effective the exchange of experiences (4.87) and the organization of business events in collaboration with other universities (4.76), and equal averages were placed on the entrepreneurial workshops, complementary entrepreneurship workshop, and courses accessible on the https://cursuri-antrepreneuri.eu/ (accessed on 20 January 2020) platform (4.69). The activities carried out during the pandemic showed a slightly higher average value for online meetings with entrepreneurs compared to those carried out face to face (4.87 compared to 4.65), with the arguments in this regard being that access to online meetings was easier (4.87), the hours of the activities were suitable (4.77), and the amount of information received was significant (4.74). It is also noteworthy that students thought of many business ideas (4.37), analyzed the entrepreneurial environment and business evolution (4.23), drew up a business plan (3.42), and carried out research on becoming an investor (3.69).

Table 4. The average values of the indicators recorded in each class.

	Class 1			Class 2			Class 3		
	Level 5 (%)	**Average**	**Level 1 (%)**	**Level 5 (%)**	**Average**	**Level 1 (%)**	**Level 5 (%)**	**Average**	**Level 1 (%)**
I1	88.71	4.85	0	9.23	3.12	13.85	32.88	4.12	0
I2-1	85.48	4.85	0	0	2.82	9.23	20.55	3.99	0
I2-2	79.03	4.77	0	0	2.74	9.23	20.55	3.97	0
I2-3	79.03	4.79	0	4.62	2.78	9.23	24.66	4.1	0
I3-1	88.71	4.89	0	0	3.22	9.23	32.88	4.16	0
I3-2	79.03	4.77	0	0	3.17	4.62	36.99	4.25	0
I3-3	87.1	4.87	0	0	3.18	4.62	41.1	4.27	0
I4-1	90.32	4.87	0	4.62	3.03	13.85	45.21	4.21	4.11
I4-2	75.81	4.69	0	4.62	2.89	13.85	36.99	4.16	0
I4-3	74.19	4.69	0	4.62	3.08	9.23	41.1	4.29	0
I4-4	69.35	4.66	0	9.23	3.14	9.23	53.42	4.4	0
I4-5	69.35	4.69	0	18.46	3.35	4.62	32.88	4	4.11
I4-6	61.29	4.58	0	0	2.66	18.46	16.44	3.63	4.11
I4-7	75.81	4.76	0	9.23	2.95	13.85	28.77	3.82	0
I4-8	66.13	4.66	0	9.23	2.95	13.85	28.77	4.15	0
I5-1	32.26	3.42	11.29	0	1.98	41.54	8.22	2.34	36.99
I5-2	66.13	4.37	6.45	4.62	2.4	23.08	24.66	3.53	8.22
I5-3	33.87	3.69	11.29	0	2.17	32.31	16.44	3.08	16.44
I5-4	20.97	2.89	19.35	13.85	2.85	23.08	24.66	2.97	24.66
I5-5	50	4.23	1.61	4.62	2.62	23.08	8.22	3.1	8.22
I5-6	43.55	3.56	22.58	0	1.94	41.54	20.55	2.88	24.66
I5-7	16.13	1.82	77.42	4.62	1.71	69.23	0	1.48	69.86
I5-8	33.87	2.61	54.84	0	1.89	50.77	4.11	1.89	57.53
I5-9	20.97	2.24	61.29	23.08	2.75	32.31	8.22	2.48	41.1
I6-1	80.65	4.65	0	4.62	2.85	23.08	73.97	4.53	4.11
I6-2	80.65	4.77	0	21.54	3.71	4.62	38.36	3.44	24.66
I7-1	88.71	4.87	0	35.38	2.97	18.46	38.36	3.85	4.11
I7-2	72.58	4.61	1.61	26.15	2.83	27.69	38.36	3.48	12.33
I7-3	69.35	4.56	1.61	40	3.02	27.69	34.25	3.48	12.33
I7-4	80.65	4.77	0	26.15	2.88	18.46	38.36	4.01	4.11
I7-5	67.74	4.4	4.84	16.92	2.55	32.31	38.36	3.6	16.44
I7-6	75.81	4.74	0	26.15	2.83	23.08	38.36	3.81	4.11

Compared to class 1, in class 2 the averages of the qualifications granted were much more reduced and show a lower interest in entrepreneurship from the respondents, who showed a low average of appreciation (3.12) for the increase in entrepreneurial competence (also having a weight of 13.85 among responses with a qualification of total disagreement) and the efficiency of meetings with entrepreneurs. The ranking of the activities from class 1 was maintained (the highest average for entrepreneurs who had graduated from the University of Petroșani, successful entrepreneurs, and local entrepreneurs) but with much smaller averages (from 2.82 to 2.74). A different situation compared to class 1 was evident in the methods used for meetings with entrepreneurs, and, surprisingly, the respondents

appreciated the complementary courses held offline on the platform (3.35), followed by the presentation of business ideas (3.14) and workshops (3.08). Online meetings with entrepreneurs (3.71) were appreciated more compared to face-to-face meetings (2.85), and among the advantages of this form of meeting, they chose the possibility to use the chat for questions (3.02), participating in more online meetings (2.97) and considering the meeting times appropriate (2.88). The interest in analyzing the business environment (2.62) and identifying business ideas (2.4) was much lower compared to class 1 (4.37) and class 3 (3.53). There was a lack of interest in the entrepreneurial field (2.75), and developing a business was considered risky (2.85).

The analysis of the responses from class 3 showed that, although the average rating of entrepreneurial projects was relatively high (4.12), only 32.88% of all respondents in this group rated this participation with the highest rating. Unlike class 1 and class 2, where the ranking of entrepreneurs was the same, respondents in class 3 were primarily interested in successful entrepreneurial models (4.1 versus 4.79 and 2.78, respectively) and graduate entrepreneurs of the University of Petroșani, which were ranked second in terms of relevance. A special characteristic of this group is that, compared to the other two classes, the respondents valued face-to-face meetings the most (4.53), and the tools used for interaction with entrepreneurs emphasized this characteristic by employing interactive methods, namely, the presentation of ideas for business (4.40), workshops (4.29), experience exchanges (4.21), and entrepreneurial workshops (4.16). However, for the activities carried out online to interact with the entrepreneurs, in the periods when the activities could not be carried out face-to-face there was an average percentage of 37.67% of respondents who ranked this the highest of all the answers. Another gap compared to the other two classes showed that, although the respondents in class 3 had better averages than class 2 for the way in which, during the pandemic, they thought about business ideas (3.53), documented investment possibilities (3.08), or analyzed the evolution of the entrepreneurial and business environment (2.97), their conclusion was that they are not interested in the field of entrepreneurship (2.48) and it is too risky to develop a business (2.97—the highest average among the three classes).

Following the analysis of these classes, it can be concluded that the results of the study converged to confirm the statements presented in the theoretical part of the paper.

Thus, the majority of students appreciated the meetings with the entrepreneurs who are alumni of the University of Petroșani (I-2.1), which corresponds to similar situations found in the specialized literature, such as Lafuente et al., who appreciated that the people in close contact with an entrepreneur are more inclined to develop the desire and confidence to create their own business [62]. The virtual models of successful entrepreneurs (I-2.3) were appreciated as important for the development of entrepreneurial competence, as we presented in the literature review.

If the average for I-4 is compared, which was 4.7 for class 1 and 3.00 for class 2, the same conclusions can be drawn as those of Arranz et al. [29], who found that extracurricular activities do not affect entrepreneurial intention [44]. However, there is only a partial overlap, given that the study by Arranz et al. was conducted with marketing students, whereas this research applied the questionnaire to students in the field of administrative sciences for whom the expectations regarding entrepreneurial intentions were reserved. Considering the heterogeneity of the student group in terms of fields of study, the conclusions converged towards similar situations in the specialized literature, and we appreciate that these extracurricular activities had a positive impact on the entrepreneurial intention of students. The analysis of the correlation between fields of study and entrepreneurial inclination showed a significant differentiation between engineering students in class 1 and administrative-science students, who predominated in class 2, as follows: Engineering students responded at a rate of 100% with maximum qualification for the seven indicators (I1-1, I2-1, I3-1, I4-1, I5-1, I6-1, I6-2, and I7-1) and at a rate of 90% with maximum qualification for eight indicators (I2-2, I4-3, I4-4, I4-6, I4-7, I5-5, I7-2, and I7-4). Students in the field of administrative sciences gave answers showing low interest in entrepreneurship;

for example, only 9.23% of them rated highly the fact that university projects would increase their entrepreneurial competence (I1-1). Furthermore, 66% of engineering students thought about business ideas during the development of projects (I5-2), unlike only 4.62% of administrative-science students. At the opposite pole is the indifference towards entrepreneurship of students in the field of administrative sciences, which is evident in the fact that none of them rated with a maximum qualification the fact that they drew up a business plan (I5-1), in contrast to the students in the field of engineering sciences, where the favorable answers to the same questions reached 66.13% (I1-1, I2-1, I3-1, I4-1, I5-1, I6-1, I6-2, and I7-1).

These results are not isolated and correspond to the trends found in the literature and presented in the first part of the paper.

Even if the analysis of these classes identified a significant group of students who did not have entrepreneurial intentions, their inclusion in the target groups of the projects is justified because the competences acquired through entrepreneurial education are necessary for career development in any field and due to the fact that there is a significant relationship between entrepreneurship education and attitude towards entrepreneurship. In this context, and correlated with the results obtained, two scenarios can be constructed in which the groups of students are more homogeneous and are distinguished by the extracurricular activities specific to the study field and can be included in our future scientific efforts: Scenario 1: Innovative Entrepreneur—to include, with priority, engineering students for whom integration into entrepreneurship-education programs creates a stronger link between academia and industry and allows innovation to be stimulated [69], and Scenario 2: Social Entrepreneur, dedicated, above all, to students in the field of administrative sciences, considering that social entrepreneurship addresses local issues in order to improve the quality of life of citizens and is involved in the development of their communities [65].

5. Conclusions, Limitations, and Future Research Directions

The conclusions of this research are structured into two categories: conclusions derived from the research hypotheses and the general conclusions of the work related to the theoretical part.

Regarding RQ1: Did the meetings with the entrepreneurs have a positive impact on the entrepreneurial attitude of the students?, it was shown that successful entrepreneurs influence students' entrepreneurial intentions and their attitudes towards entrepreneurship. Most of the students appreciated the meetings with the entrepreneurs who are graduates of the University of Petroșani (I-2.1) and virtual models of successful entrepreneurs (I-2.3). In conclusion, we can say that the presence of entrepreneurial models in universities must be frequent because the students' experience of being exposed to presentations given by entrepreneurs containing their personal life experiences and how to choose a business idea brought them a better understanding of entrepreneurship and sparked their entrepreneurial interest.

The research results provided a positive answer to our second research question, RQ2: Are the use of extracurricular activities implemented through projects accepted by students in entrepreneurship education? The direct impact of the extracurricular activities carried out in the projects was shown. Thus, a favorable assessment was maintained for all types of extracurricular activities from class 1, in which engineering-science students predominated, with the highest score assigned to experience exchanges (I-4.1). In class 2, a high value was perceived for courses on the online platform (I-4.5), and for class 3, the most attractive tool was the presentation of business ideas (I-4.6). If we make a comparison between the average for I-4, which was 4.7 for class 1 and 3.00 for class 2, we can appreciate that the effect of carrying out extracurricular activities did not positively affect entrepreneurial intention for all students, which was expected for students from the field of administrative sciences, for whom our expectations regarding entrepreneurial intentions were reserved. Considering the heterogeneity of the student group in terms of fields of study, we appreciate that these extracurricular activities had a positive impact on the entrepreneurial intention of students.

Consequently, we can conclude that extracurricular activities can significantly amplify the attitude towards entrepreneurship for students from certain fields of study—in our case, students from class 1 and class 3. The limited effect on class 2, represented by students from the field of administrative sciences, leads us to consider, for the future, that the involvement of these students should be achieved through their choice of certain extracurricular activities that they consider more attractive, especially those that follow the sphere of social entrepreneurship.

Since the extracurricular activities within the presented projects also took place partially during the COVID-19 pandemic, the conclusions of our research regarding RQ3: The pandemic was a period of changing attitudes towards the development of business ideas and increasing entrepreneurial intention of students? show that although remote work was implemented according to the demands imposed by the pandemic, the students retained a certain entrepreneurial intention. We tested this hypothesis through three thematic blocks in the questionnaire, and the results showed that during the pandemic students thought of many business ideas for I-5.2 (students from class 1 and class 3 appreciated this indicator, giving it the highest score from thematic block D, in which they analyzed the entrepreneurial environment and the evolution of businesses (I-5.5, especially students from class 3)). The method of interaction with entrepreneurs was appreciated due to the possibility to take part in many online meetings (I-7.1), and the running hours were considered appropriate (I-7.4), which also corresponded to other studies that showed that an effect of the COVID-19 pandemic was the increase of students' interest in starting their own business. Even if for class 1 and partially class 3 the results tended to confirm RQ3, there were indicators that did not support it—for example, for I-5.6, regarding opening a business: The average of the three classes is 2.79, and for I-5.4 more than 19% of respondents considered it risky to develop a business.

The conclusion is that this split of opinion was influenced, on the one hand, by the technology used during the pandemic, the online environment of the activities, and the amplification of the digitization process by assimilating high-performance IT products and applications being more attractive for students in class 1, and, on the on the other hand, by the economic environment, with the economic stability before the pandemic being replaced by an accelerated economic decline and an unstable business environment, which, for some students in classes 2 and 3, was not encouraging for their entrepreneurial intentions.

In conclusion, even if the aim of the paper—to provide substantiated answers to the initial research questions—was achieved, the authors are aware that this study is also subject to some limitations. Thus, among the limitations of this work we list the fact that it only used a quantitative approach and that the study was conducted on students from only one university. With this starting point, we believe that the research can include qualitative items in the research questionnaire as a valuable extension, and apply it within several universities and to students in the same fields of study.

Currently, the economic and social changes in society indicate the need to develop entrepreneurial competence in the young generation, and the role of universities is essential in this endeavor. The study of the specialized literature allowed us to conclude that entrepreneurship education is a complex and necessary endeavor in universities, as is inventorying a portfolio of entrepreneurship-education tools, starting from adjusting the curriculum by fields of study and up to the realization of appropriate extracurricular activities to increase students' level of entrepreneurial competence.

The essential conclusion of our research is that entrepreneurship education represents a real facilitator of the transition to sustainable entrepreneurship and is in agreement with the views in the specialized literature that universities can offer a series of extracurricular activities that help develop entrepreneurial capabilities.

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Data Availability Statement: The data presented in this research are available upon request from the corresponding authors.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Appendix A.1. Principal Component Analysis for Indicator I

Table A1. Simple statistics.

	I4-1	I4-2	I4-3	I4-4	I4-5	I4-6	I4-7	I4-8
Mean	4.352	4.213	4.277	4.296	4.269	9.981	4.185	4.204
Standard deviation	1.032	1.011	0.923	0.927	0.910	1.090	1.039	0.952

Table A2. Correlation matrix.

	I4-3	I4-6	I4-1	I4-2	I4-4	I4-5	I4-7	I4-8
I4-3	1.000	0.707	0.785	0.822	0.598	0.519	0.759	0.749
I4-6	0.707	1.000	0.699	0.694	0.557	0.576	0.823	0.765
I4-1	0.785	0.699	1.000	0.738	0.454	0.591	0.701	0.721
I4-2	0.822	0.694	0.738	1.000	0.596	0.462	0.740	0.717
I4-4	0.598	0.557	0.454	0.596	1.000	0.665	0.492	0.553
I4-5	0.519	0.576	0.591	0.462	0.665	1.000	0.546	0.569
I4-7	0.759	0.823	0.701	0.740	0.492	0.546	1.000	0.807
I4-8	0.749	0.765	0.721	0.717	0.553	0.569	0.807	1.000

Table A3. Eigenvalues of the correlation matrix.

	Eigenvalues	Difference	Proportion (%)	Cumulative (%)
1	5.635	4.854	70.44	70.44
2	0.781	0.3605	9.76	80.20
3	0.476	0.079	5.95	86.15
4	0.396	0.162	4.95	91.10
5	0.234	0.043	2.92	94.02
6	0.190	0.020	2.38	96.40
7	0.170	0.052	2.13	98.53
8	0.118		1.47	100

Table A4. Eigenvectors for the principal components.

	PRIN1	PRIN2	PRIN3	PRIN4	PRIN5	PRIN6	PRIN7	PRIN8
I4-3	0.376	−0.171	0.339	0.211	−0.701	0.126	−0.721	−0.358
I4-6	0.368	−0.101	−0.293	−0.411	0.571	−0.422	−0.019	−0.307
I4-1	0.359	−0.191	−0.132	0.670	0.108	−0.385	0.066	0.451
I4-2	0.365	−0.201	0.492	0.079	0.157	0.294	0.643	−0.229
I4-4	0.302	0.638	0.484	−0.263	−0.003	−0.241	−0.068	0.368
I4-5	0.303	0.631	−0.459	0.305	0.002	0.343	0.081	−0.283
I4-7	0.372	−0.241	−0.245	−0.345	0.043	0.566	−0.135	0.533
I4-8	0.372	−0.137	−0.179	−0.223	−0.795	−0.276	0.178	−0.146

Appendix A.2. Principal Component Analysis for Indicator I5

Table A5. Simple statistics.

	I5-1	I5-2	I5-3	I5-4	I5-5	I5-6	I5-7	I5-8	I5-9
Mean	2.889	3.787	3.250	2.898	3.648	3.083	1.722	2.306	2.398
Standard deviation	1.398	1.363	1.364	1.416	1.237	1.596	1.341	1.627	1.607

Table A6. Correlation matrix.

	I5-1	I5-2	I5-3	I5-4	I5-5	I5-6	I5-7	I5-8	I5-9
I5-1	1.000	0.562	0.569	0.116	0.504	0.362	0.286	0.284	0.049
I5-2	0.562	1.000	0.693	−0.040	0.644	0.465	0.074	0.226	−0.271
I5-3	0.569	0.693	1.000	0.206	0.532	0.481	0.231	0.346	−0.147
I5-4	0.116	−0.040	0.206	1.000	0.191	0.229	0.279	0.054	0.459
I5-5	0.504	0.644	0.532	0.192	1.000	0.391	0.165	0.234	−0.116
I5-6	0.362	0.465	0.481	0.229	0.391	1.000	0.263	0.029	0.117
I5-7	0.286	0.074	0.231	0.279	0.165	0.263	1.000	0.503	0.526
I5-8	0.284	0.226	0.347	0.054	0.234	0.029	0.503	1.000	0.163
I5-9	0.049	−0.271	−0.147	0.459	−0.116	0.117	0.526	0.163	1.000

Table A7. Eigenvalues of the correlation matrix.

	Eigenvalue	Difference	Proportion	Cumulative
1	3.411	1.451	0.379	0.379
2	1.961	0.851	0.218	0.597
3	1.109	0.429	0.123	0.720
4	0.681	0.131	0.076	0.796
5	0.550	0.072	0.061	0.857
6	0.478	0.156	0.053	0.910
7	0.321	0.035	0.036	0.946
8	0.286	0.084	0.032	0.978
9	0.202		0.022	1.000

Table A8. Table eigenvectors.

	PRIN1	PRIN2	PRIN3	PRIN4	PRIN5	PRIN6	PRIN7	PRIN8	PRIN9
I5-1	0.412	−0.039	−0.065	−0.044	−0.767	−0.329	0.006	−0.343	0.086
I5-2	0.428	−0.314	−0.008	−0.053	0.014	0.070	0.161	0.606	0.563
I5-3	0.452	−0.132	0.003	0.114	0.274	−0.500	−0.171	0.262	−0.584
I5-4	0.158	0.412	0.497	0.606	0.157	−0.180	−0.057	−0.121	0.339
I5-5	0.409	−0.151	0.092	0.324	−0.108	0.754	−0.045	−0.114	−0.319
I5-6	0.348	0.023	0.433	−0.610	0.342	0.043	0.226	−0.384	0.032
I5-7	0.249	0.493	−0.271	−0.282	0.059	0.159	−0.696	0.073	0.153
I5-8	0.255	0.219	−0.681	0.189	0.318	−0.021	0.449	−0.272	0.095
I5-9	0.031	0.631	0.122	−0.147	−0.280	0.088	0.449	0.438	−0.289

Appendix A.3. Principal Component Analysis for Indicator I7

Table A9. Simple statistics.

	I7-1	I7-2	I7-3	I7-4	I7-5	I7-6
Mean	4.259	4.000	4.009	4.222	3.852	4.148
Standard deviation	1.222	1.349	1.332	1.159	1.448	1.210

Table A10. Correlation matrix.

	I7-1	I7-2	I7-3	I7-4	I7-5	I7-6
I7-1	1.000	0.766	0.763	0.838	0.610	0.904
I7-2	0.766	1.000	0.899	0.789	0.528	0.762
I7-3	0.763	0.899	1.000	0.769	0.617	0.766
I7-4	0.838	0.789	0.769	1.000	0.656	0.798
I7-5	0.610	0.528	0.617	0.656	1.000	0.617
I7-6	0.904	0.762	0.766	0.798	0.617	1.000

Table A11. Eigenvalues of the correlation matrix.

	Eigenvalue	Difference	Proportion	Cumulative
1	4.716	4.182	0.786	0.786
2	0.534	0.165	0.089	0.875
3	0.369	0.164	0.061	0.936
4	0.205	0.113	0.034	0.971
5	0.092	0.007	0.015	0.986
6	0.085		0.014	1.000

Table A12. Eigenvectors.

	PRIN 1	PRIN2	PRIN3	PRIN4	PRIN5	PRIN6
I7-1	0.425	−0.082	−0.500	0.107	−0.605	0.430
I7-2	0.414	−0.392	0.429	−0.029	0.396	0.578
I7-3	0.418	−0.209	0.517	0.248	−0.429	−0.518
I7-4	0.421	0.019	−0.142	−0.851	0.067	−0.271
I7-5	0.343	0.889	0.231	0.107	0.056	0.153
I7−6	0.422	−0.067	−0.475	0.437	0.534	−0.339

Appendix A.4. Transfer-Function Equations

	For the Hidden Layer
H1	0.217 * I1 − 0.427 * I2_1 + 0.118 * I2_2 + 0.293 * I2_3 − 0.153 * I3_1 + 0.078 * I3_2 + 0.435 * I3_3 + 0.435 * I6_1 − 0.229 * I6_2 − 0.1 * PRIN1_I4 + 0.17 *PRIN1_I5 + 0.146 * PRIN1_I7 + 0.002 * PRIN2_I4 + 0.192 * PRIN2_I5 − 0.091 * PRIN2_I7 − 0.141 * PRIN3_I4 − 0.062 * PRIN3_I5 − 0.291 * PRIN4_I5 − 0.207 * PRIN5_I5
H2	0.318 * I1 + 0.419 * I2_1 + 0.127 * I2_2 − 0.231 * I2_3 + 0.312 * I3_1 + 0.069 * I3_2 − 0.089 * I3_3 − 0.71 * I6_1 − 0.474 * I6_2 − 0.136 * PRIN1_I4 − 0.359 * PRIN1_I5 − 0.146 * PRIN1_I7 − 0.344 * PRIN2_I4 − 0.15 * PRIN2_I5 − 0.015 * PRIN2_I7 − 0.072 * PRIN3_I4 + 0.064 * PRIN3_I5 − 0.073 * PRIN4_I5 + 0.158 * PRIN5_I5
H3	0.789 * I1 + 0.488 * I2_1 − 0.497 * I2_2 − 0.53 * I2_3 + 0.295 * I3_1 − 0.332 * I3_2 − 0.942 * I3_3 − 0.689 * I6_1 + 0.577 * I6_2 + 0.055 * PRIN1_I4 − 0.216 * PRIN1_I5 − 0.383 * PRIN1_I7 + 0.083 * PRIN2_I4 + 0.256 * PRIN2_I5 + 0.292 * PRIN2_I7 + 0.065 * PRIN3_I4 − 0.511 * PRIN3_I5 + 0.711 * PRIN4_I5 + 0.006 * PRIN5_I5
H4	−0.09 * I1 − 0.022 * I2_1 − 0.07 * I2_2 − 0.194 * I2_3 − 0.157 * I3_1 + 0.124 * I3_2 − 0.106 * I3_3 − 0.384 * I6_1 −0.159 * I6_2 + 0.058 * PRIN1_I4 − 0.123 * PRIN1_I5 + 0.048 * PRIN1_I7 − 0.129 * PRIN2_I4 + 0.162 * PRIN2_I5 − 0.076 * PRIN2_I7 − 0.129 * PRIN3_I4 + 0.087 * PRIN3_I5 − 0.001 * PRIN4_I5 − 0.037 * PRIN5_I5
H5	−0.032 * I1 + 0.149 * I2_1 + 0.249 * I2_2 + 0.164 * I2_3 + 0.258 * I3_1 − 0.193 * I3_2 + 0.066 * I3_3 + 0.215 * I6_1 + 0.291 * I6_2 + 0.046 * PRIN1_I4 + 0.188 * PRIN1_I5 + 0.086 * PRIN1_I7 + 0.101 * PRIN2_I4 − 0.08 * PRIN2_I5 + 0.311 * PRIN2_I7 − 0.263 * PRIN3_I4 − 0.102 * PRIN3_I5 + 0.253 * PRIN4_I5 + 0.0602 * PRIN5_I5
H6	0.57 * I1 + 0.916 * I2_1 + 0.255 * I2_2 + 0.271 * I2_3 + 0.729 * I3_1 + 0.571 * I3_2 + 0.161 * I3_3 − 0.466 * I6_1 + 1.139 * I6_2 + 1.221 * PRIN1_I4 + 1.118 * PRIN1_I5 + 0.801 * PRIN1_I7 − 0.282 * PRIN2_I4 + 0.139 * PRIN2_I5 − 0.138 * PRIN2_I7 − 0.309 * PRIN3_I4 − 0.2 * PRIN3_I5 − 0.554 * PRIN4_I5 − 0.463 * PRIN5_I5
H7	0.525 * I1 + 0.719 * I2_1 + 0.258 * I2_2 + 0.127 * I2_3 + 0.599 * I3_1 + 0.564 * I3_2 + 0.139 * I3_3 − 0.503 * I6_1 + 0.596 * I6_2 + 0.648 * PRIN1_I4 + 0.563 * PRIN1_I5 + 0.672 * PRIN1_I7 − 0.312 * PRIN2_I4 + 0.065 * PRIN2_I5 − 0.099 * PRIN2_I7 − 0.352 * PRIN3_I4 − 0.065 * PRIN3_I5 − 0.39 * PRIN4_I5 − 0.239 * PRIN5_I5
H8	−0.489 * I1 + 0.156 * I2_1 − 0.167 * I2_2 − 0.367 * I2_3 + 0.126 * I3_1 − 0.186 * I3_2 + 0.039 * I3_3 − 0.823 * I6_1 + 0.665 * I6_2 + 0.442 * PRIN1_I4 + 0.208 * PRIN1_I5 − 0.179 * PRIN1_I7 − 0.165 * PRIN2_I4 − 0.046 * PRIN2_I5 + 0.278 * PRIN2_I7 − 0.499 * PRIN3_I4 − 0.361 * PRIN3_I5 − 0.016 * PRIN4_I5 − 0.378 * PRIN5_I5
H9	−0.378 * I1 + 0.541 * I2_1 + 0.084 * I2_2 − 0.616 * I2_3 + 0.195 * I3_1 − 0.217 * I3_2 − 0.245 * I3_3 − 0.934 * I6_1 + 0.204 * I6_2 − 0.254 * PRIN1_I4 − 0.034 * PRIN1_I5 − 0.281 * PRIN1_I7 − 0.389 * PRIN2_I4 − 0.279 * PRIN2_I5 + 0.169 * PRIN2_I7 − 0.535 * PRIN3_I4 + 0.153 * PRIN3_I5 + 0.188 * PRIN4_I5 − 0.109 * PRIN5_I5
H10	0.043 * I1 + 0.057 * I2_1 + 0.243 * I2_2 + 0.158 * I2_3 + 0.111 * I3_1 + 0.214 * I3_2 + 0.341 * I3_3 − 0.076 * I6_1 − 0.347 * I6_2 + 0.052 * PRIN1_I4 + 0.004 * PRIN1_I5 + 0.034 * PRIN1_I7 − 0.137 * PRIN2_I4 − 0.029 * PRIN2_I5 − 0.024 * PRIN2_I7 − 0.14 * PRIN3_I4 + 0.018 * PRIN3_I5 − 0.219 * PRIN4_I5 − 0.081 * PRIN5_I5
	For the ouput layer:
Class_1	−4.088 * H1 + 0.78 * H2 + 1.083 * H3 + 6.69 * H4 − 11.231 * H5 + 15.857 * H6 + 11.079 * H7 + 5.576 * H8 − 13.094 * H9 + 0.147 * H10
Class_2	2.688 * H1 − 0.285 * H2 + 2.126 * H3 − 6.639 * H4 + 11.169 * H5 − 10.765 * H6 − 7.921 * H7 − 3.09 * H8 + 13.377 * H9 − 0.683 * H10
Class_3	1.531 * H1 − 1.178 * H2 − 2.996 * H3 − 0.589 * H4 + 0.743 * H5 − 4.734 * H6 − 2.33 * H7 − 2.691 * H8 + 0.125 * H9 + 0.717 * H10
The activation thresholds for the two layers had the following values: for the hidden layer -0.232, 0.641, −1.558, 0.467, −0.84, −0.676, −0.508, 0.668, −0.653, and 0.018.	
For the output layer −0.868, −2.468, and −2.192.	

Appendix A.5. Class Structure Derived from the Cluster Analysis and from Neural-Network Training

Class	Class Structure Derived from the Cluster Analysis	Class Structure Derived from the Neural Network
Class 1	P1, P4, P5, P9, P12, P13, P16, P19, P34, P35, P36 P37, P38, P40, P43, P45, P51, P53, P58, P59, P61, P64, P65, P67, P68, P70, P72, P73, P75, P76, P78, P79, P80, P81, P82, P83, P84, P85, P86, P87, P88, P89, P90, P91, P92, P93, P94, P95, P96, P97, P98, P99, P100, P101, P102, P103, P104, P105, P106, P107, P108, P109, P112, P113, P117, P120, P121, P124, P127, P142, P143, P144, P145, P146, P148, P151, P153, P159, P161, P166, P167, P169, P172, P173, P175, P176, P178, P180, P181, P183, P184, P186, P187, P188, P189, P190, P191, P192, P193, P194, P195, P196, P197, P198, P199, P200, P201, P202, P203, P204, P205, P206, P207, P208, P209, P210, P211, P212, P213, P214, P215, P216, P217, P220, P221, P225, P228, P229, P232, P235, P250, P251, P252, P253, P254, P256, P259, P261, P267, P269, P274, P275, P277, P280, P281, P283, P284, P286, P288, P289, P291, P292, P294, P295, P296, P297, P298, P299, P300, P301, P302, P303, P304, P305, P306, P307, P308, P309, P310, P311, P312, P313, P314, P315, P316, P317, P318, P319, P320, P321, P322, P323, P324	P1, P4, P5, P9, P12, P13, P16, P19, P34, P35, P36 P37, P38, P40, P43, P45, P51, P53, P58, P59, P61, P64, P65, P67, P68, P70, P72, P73, P75, P76, P78, P79, P80, P81, P82, P83, P84, P85, P86, P87, P88, P89, P90, P91, P92, P93, P94, P95, P96, P97, P98, P99, P100, P101, P102, P103, P104, P105, P106, P107, P108, P109, P112, P113, P117, P120, P121, P124, P127, P142, P143, P144, P145, P146, P148, P151, P153, P159, P161, P166, P167, P169, P172, P173, P175, P176, P178, P180, P181, P183, P184, P186, P187, P188, P189, P190, P191, P192, P193, P194, P195, P196, P197, P198, P199, P200, P201, P202, P203, P204, P205, P206, P207, P208, P209, P210, P211, P212, P213, P214, P215, P216, P217, P220, P221, P225, P228, P229, P232, P235, P250, P251, P252, P253, P254, P256, P259, P261, P267, P269, P274, P275, P277, P280, P281, P283, P284, P286, P288, P289, P291, P292, P294, P295, P296, P297, P298, P299, P300, P301, P302, P303, P304, P305, P306, P307, P308, P309, P310, P311, P312, P313, P314, P315, P316, P317, P318, P319, P320, P321, P322, P323, P324, P42, P150, P258
Class 2	P2, P3, P7, P11, P14, P15, P17, P20, P21, P28, P29, P31, P47, P48, P49, P50, P54, P55, P62, P66, P71, P110, P111, P115, P119, P122, P123, P125, P128, P129, P136, P137, P139, P155, P156, P157, P158, P162, P163,P170, P174, P179, P218, P219, P223, P227, P230, P231, P233, P236, P237, P244, P245, P247, P263, P264, P265, P266, P270, P271, P278, P282, P287	P2, P3, P7, P11, P14, P15, P17, P20, P21, P28, P29, P31, P47, P48, P49, P50, P54, P55, P62, P66, P71, P110, P111, P115, P119, P122, P123, P125, P128, P129, P136, P137, P139, P155, P156, P157, P158, P162, P163,P170, P174, P179, P218, P219, P223, P227, P230, P231, P233, P236, P237, P244, P245, P247, P263, P264, P265, P266, P270, P271, P278, P282, P287, P149, P257
Class 3	P6, P8, P10, P18, P22, P23, P24, P25, P26, P27, P30, P32, P33, P39, P41, P42, P44, P46, P52, P56, P57, P60, P63, P69, P74, P77, P114, P116, P118, P126, P130, P131, P132, P133, P134, P135, P138, P140, P141, P147, P149, P150, P152, P154, P160, P164, P165, P168, P171, P177, P182, P185, P222, P224, P226, P234, P238, P239, P240, P241, P242, P243, P246, P248, P249, P255, P257, P258, P260, P262, P268, P272, P273, P276, P279, P285, P290, P293	P6, P8, P10, P18, P22, P23, P24, P25, P26, P27, P30, P32, P33, P39, P41, P44, P46, P52, P56, P57, P60, P63, P69, P74, P77, P114, P116, P118, P126, P130, P131, P132, P133, P134, P135, P138, P140, P141, P147, P152, P154, P160, P164, P165, P168, P171, P177, P182, P185, P222, P224, P226, P234, P238, P239, P240, P241, P242, P243, P246, P248, P249, P255, P260, P262, P268, P272, P273, P276, P279, P285, P290, P293

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