Project: **2021-1-RO01-KA220-HED-000032162**
***"Green education for green Biotech Enterprise"* GreenBE**

R1 Critical assessment of the teaching and learning practices in Green Biotech Education

Study 2. A quantitative assessment of biotech and economics students' ecological behaviour and entrepreneurial intention

1. Introduction

Nowadays, because of the various transformations the economy and society are going through, and the disturbing factors induced by the Covid-19 pandemic and then by the Ukraine war, more and more voices say that the field of biotechnology, with an emphasis on the 'green component', can provide answers to the problems we are facing. In this regard, we refer only to a few main aspects, such as food security, ensuring energy requirement at bearable costs, environmental protection and combating the effects of climate change, slowing the rhythm, or even stopping global warming, the deficit of raw materials and materials in some industries (economic sectors), deterioration of the health of the population, the process of accentuated demographic aging in developed countries or in emerging economies, etc.

In addition, development strategies and policies are currently built around the need for the adoption, implementation, and application of 'Green' practices in all fields of activity. Therefore, the decision-making factors in the education field must adapt, develop, and implement policies that have as a main pillar the ecological component of economic and social development. Sustainability is already a well-known concept. A few years ago, sustainable development was promoted and used for declarative purposes or to provide a more attractive 'packaging' to investment projects for economic and social development; today, this is not enough. Sustainable development must mean concrete measures that positively impact on how human activities will be carried out in the future.

In general, education can make an essential contribution to changing the opinions of individuals about what ecological behaviour really means and how it can be adopted and applied to produce maximum positive effects. Specifically, the higher education component could have the greatest impact on the application of 'Green' practices. The solution that university education can offer is the preparation of graduates who have the necessary knowledge and skills in "green" practices and the adoption of ecological behaviour. Moreover, graduates are needed who want and can contribute decisively to intensify the initiatives and entrepreneurial activities in 'green' practices.

For this objective to be achieved, we need to know and understand the best factors that could contribute to change. Specifically, we refer to the model that currently governs the relationship between university education and the skills needs of the labour market in the 'green' segment. The information available on this topic is poor, considering that we have very few research studies, both due to the specific budgetary limitations for education, regardless of its level, and because of the reduced concerns about carrying out extensive research in this field.

This study aims to identify factors that influence, or model, the entrepreneurial intent in the 'green' economy and the ecological behaviour of students (future graduates) in the European context. The investigated sample includes students from several EU member countries, both from Western and Eastern Europe. We believe that this will contribute to a better understanding of the existing situation regarding the skills and knowledge of the students, future specialists in the 'green economy' area.

2. Purpose

In accordance with the above, ecological education has become vital. Although this subject is widely promoted at all levels, there are very few specific approaches. This can affect the quality of the elaboration of sustainable development policies and strategies, as they must be based on the results of research on currently applied practices, including in the education field.

The responsible research and innovation that must be implemented in the higher education system, both in terms of teachers and students, are based on the principles of sustainable development, at least in theory. For this to really happen so that the positive impact is as high as possible, teachers and students need to become actors, activists and innovators when they must meet the challenges generated by the need for sustainable development. For this reason, we set out to conduct a study, based on which we can quantitatively evaluate the ecological behaviour and the entrepreneurial intention of students in activities with ecological orientation (in short, students' ecological behaviour and entrepreneurial intention).

The methodology of descriptive and structural equation modelling (SEM) will be used in the study to evaluate the influence of various factors on the students' and future graduates' entrepreneurial intention and ecological behaviour.

Hence, based on the results obtained, we will be able to better understand which are the reasons why students practice (or do not practice) each of the patterns of pro-environmental behaviour (PEBs) (a questionnaire aimed to determine why consumers practice or do not practice ecological behaviour). The questionnaire must contain questions aimed at:

- Clarifying the environmental literacy and environmental self-awareness of the respondents (Self-Evaluation of an Individual's Pro-Ecological Attitudes).
- Environmental and health consciousness.
- Ecological consumption intention.

In addition, the questionnaire was presented to the UPV "Ethics in Research Committee" meeting, on May 25, 2022, and have been approved by the Committee.

3. Methods

Regarding the SEM methodology, we want to present some brief details regarding its definition and conceptual framework. Maclean and Gray (1998), for example, consider that SEM includes, in an effective way, a wide range of multivariate analysis methods (methods considered standard). These include methods such as regression or analysis of factors, or variant analysis, etc. In their opinion, although SEM seems a simple methodology, in practice, it is difficult to apply because it has a high level of sophistication, so the results are constituted by a set of predictions on elements or behaviours that cannot be estimated or measured.

From another point of view (Streiner, 2006), SEM is used for analysing the various paths that can be drawn between hypothetical factors, also called latent variables, which manifest their influence by the effect they produce on variables or behaviours that can be observed. The authors refer here to questionnaires applied to a target group or to various behavioural measures.

According to other approaches (Hoe, 2008), SEM is a solid statistical method, which combines simultaneously in a statistical test, what is called the analysis of confirmation factors (CFA) with a structural model. Thus, SEM can be used successfully if you want, for example, to test predetermined hypotheses that are presented or included in an inter-relating model. In other words, SEM is used mainly for testing the causal relationships between various variables previously established.

From another perspective (Hooper et al., 2008), SEM is a method widely used in all areas, especially in the field of social sciences. The main difficulty in applying this technique is selecting the variables that are included in the analysis model, considering the abundance of available information, which can often be contradictory.

In another approach (Hair Jr. et al., 2021), SEM is a very frequently used method for identifying factors or variables that influence a specific phenomenon or attitude, such as the level of consumer satisfaction in relation to the consumption of economic goods (products or services), the degree of loyalty of a company's customers (or the loyalty of its customers), the intentions to use a new product or service, the behaviour adopted by consumers in relation to the use of certain technologies or the consumption of economic goods, etc.

3.1. Conceptual and operational definition of research variables

The conceptual definition refers to how the questions are formulated, and the operational one highlights the answer options. The conceptual model, as designed by the authors of this study, is presented in Figure 1.

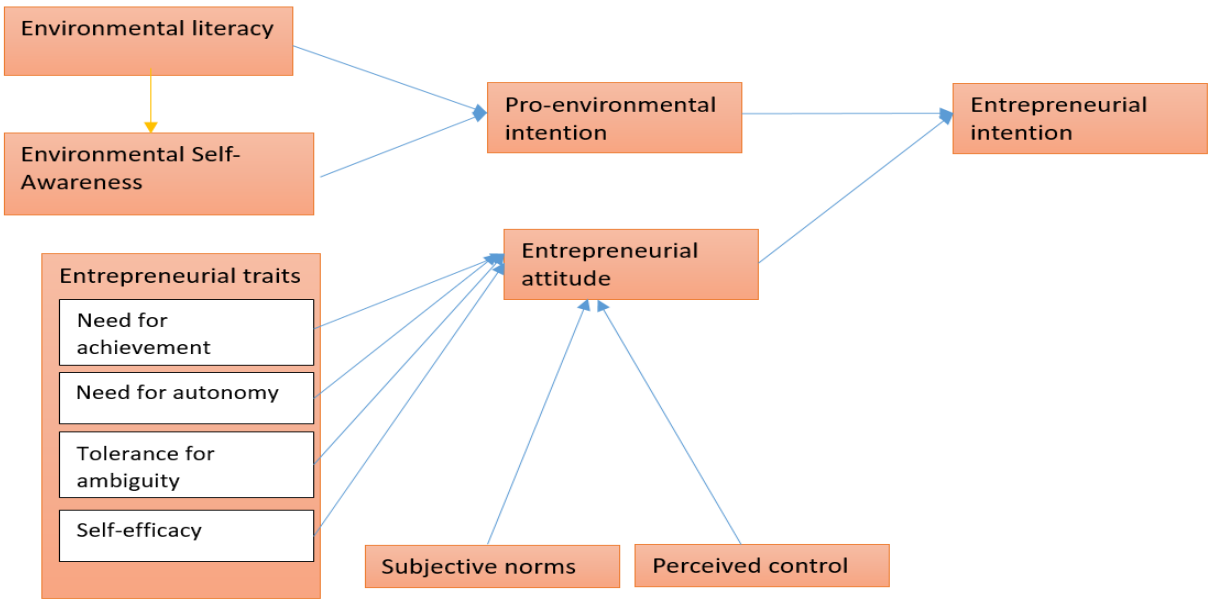

Figure 1. Conceptual model

The variables included in the model, which we consider influencing entrepreneurial intention, are presented below. On the one hand, we refer to the Pro-environmental intention, which has as influence factors Environmental literacy and Environmental Self-Awareness.
On the other hand, we consider the entrepreneurial attitude, which is influenced by a much more consistent set of variables, such as:

- The entrepreneurial traits of the individual (need for achievement, need for autonomy, tolerance for ambiguity, self-efficacy).
- Subjective norms.
- Perceived control.

3.2. Research objectives and hypotheses

Given the proposed research model, research objectives were formulated as follows:

O1. To investigate students' environmental literacy.
O2. To investigate students' environmental self-awareness.
O3. To investigate students' entrepreneurial traits.
O4. To investigate students' entrepreneurial attitude.
O5. To investigate students' pro-environmental intentions.
O6. To investigate students' entrepreneurial intentions.
O7. To investigate the subjective norms of students in starting a business.
O9. To investigate the perceived control of students over starting a business venture.

Hypotheses:
H1. Regarding their environmental education background, most students have taken part in environmental courses or environmental education workshops.
H2. Most students have taken part in entrepreneurship or start-up courses.
H3. Most students have never started a business.
H4. Most students have a friend or relative who has started their own business.
H5. Students manifest a positive entrepreneurial attitude.
H6. The most important people in supporting students' entrepreneurial decisions are close family and friends.
H7. Student perceptions of behavioural control over starting a business are negative (disagreement).
H8. Students manifest a positive intent towards starting a business.
H9. Students manifest a positive need for achievement.
H10. Students manifest a positive need for autonomy.
H11. Students manifest a high tolerance for ambiguity.
H12. Students manifest high self-efficacy.
H13. Students will positively assess their environmental literacy.
H14. Students will register high environmental self-awareness.
H15. Students will register a positive pro-environmental intention.

3.3. Determination of sample size and structure

The sample size was established according to the project proposal at a minimum number of n = 200 students from the fields of life sciences, economics, and IT from partner universities, as well as from others that have joined during the implementation period. The sample size was exceeded, with the final sample size being **n=213**.

3.4. Questionnaire design

The questionnaire was designed according to the funnel principle, the questions addressed moving from general to specific, and composed of 40 questions, 39 closed, 1 open, 32 of the questions measured on a Likert scale. The questionnaire contains 3 socio-demographic questions aimed at identifying the surveyed segments. The questionnaire template is attached in Annex 1.

4. Results and Discussion

Initially, the sample considered was a minimum of 200 respondents (students). However, this number was exceeded, the total being 213 completed questionnaires.

During the reporting period, responses to questions on study variables were analysed, comparing the frequencies of responses to each question.

Next, the results of the study and the conclusions of the quantitative research are presented in two parts, the first containing the presentation of the respondents' characteristics, and the second dedicated to the study of the researched variables.

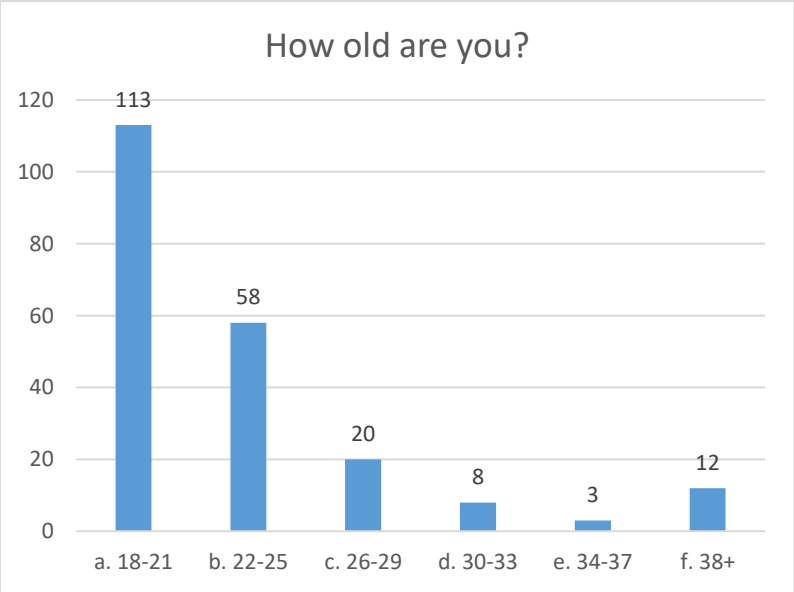

Figure 2. Age

Most respondents belong to the 18-21 age group, followed by the 22-25 age group (Table 1, Appendix 2 and Fig. 2. This is consistent with the general age of the typical master's student, relevant for the investigated community.

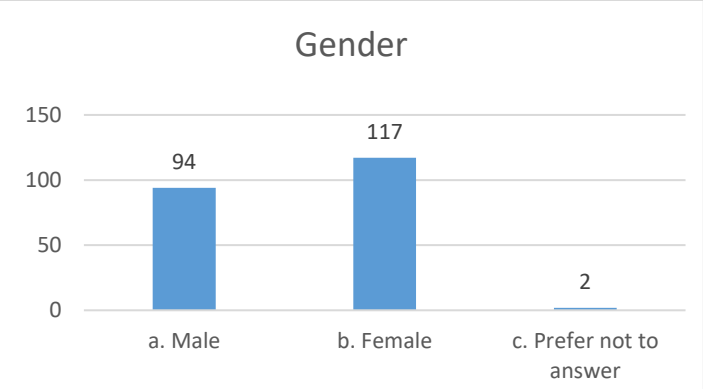

Figure 3. Gender

As can be observed in Table 2 (Appendix 2) and Fig. 3, most respondents are female, though the groups are pretty similar in size, which is relevant for the investigated community.

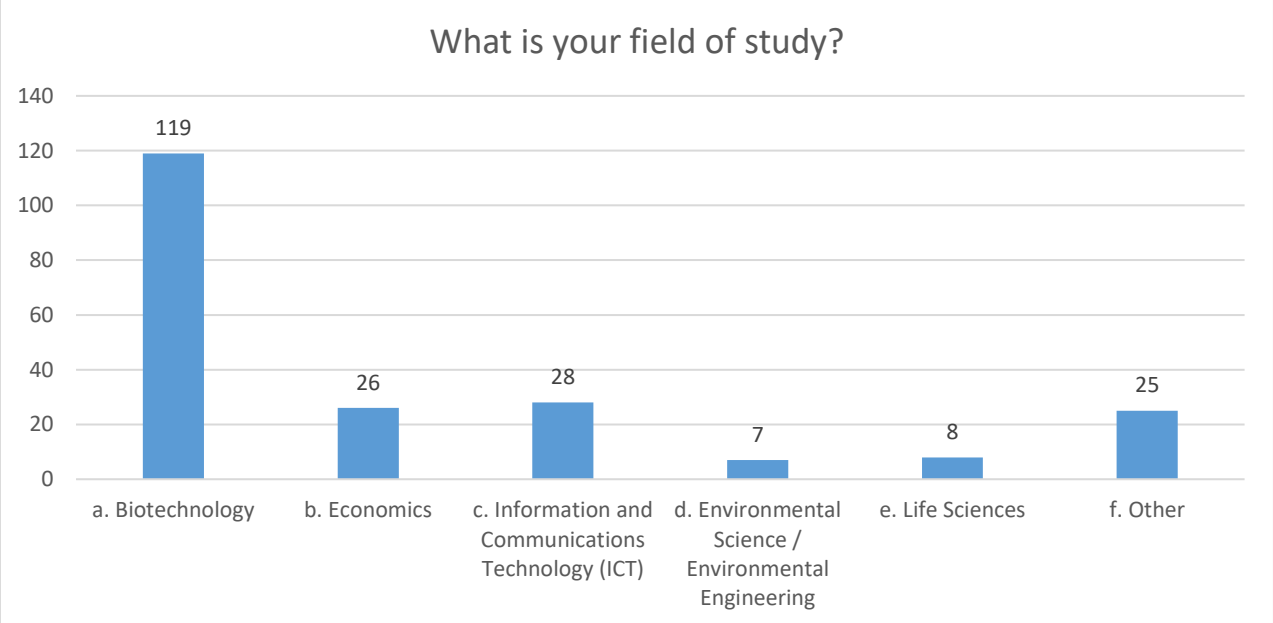

Figure 4. Field of study

From Table 3 (Appendix 2) and Fig. 4., we can observe that the investigated sample structure is relevant to the current investigation, as most students come from biotechnology-related fields.

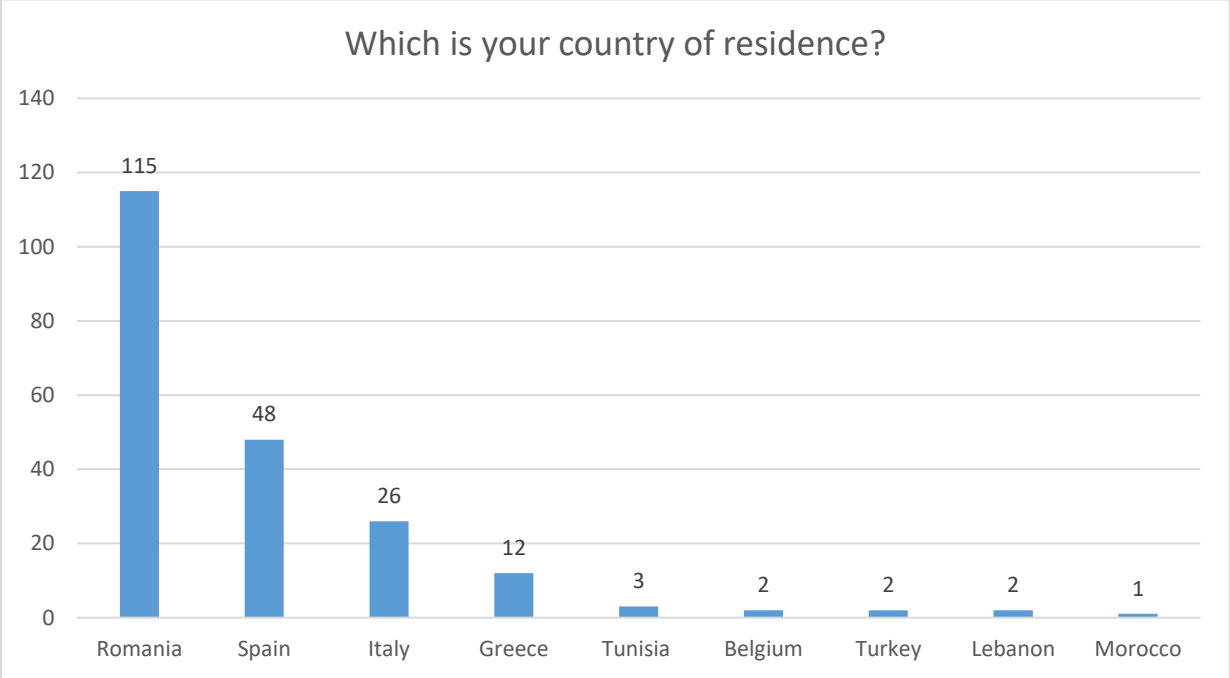

Figure 5. Country

The distribution of subjects in terms of country of residence (Table 4, Appendix 2 and Fig. 5.) is in the majority for those who are from Romania and Spain, followed by Italy and Greece. This is in accordance with the largest partner biotechnology universities and institutes.

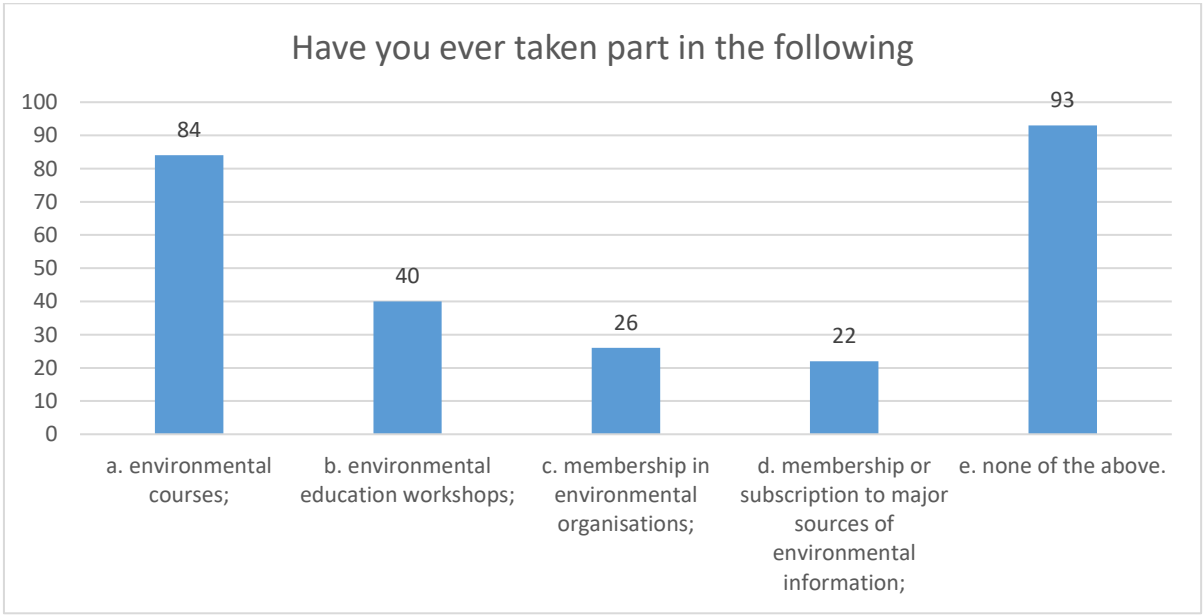

Figure 6. Environmental literacy

In terms of environmental literacy (Table 5, Appendix 2, and Fig. 6), the results indicate that most Master and PhD students who underwent some form of organised activities towards environmental awareness improvement have taken environmental courses, followed by environmental education workshops and have been members of environmental organisations.

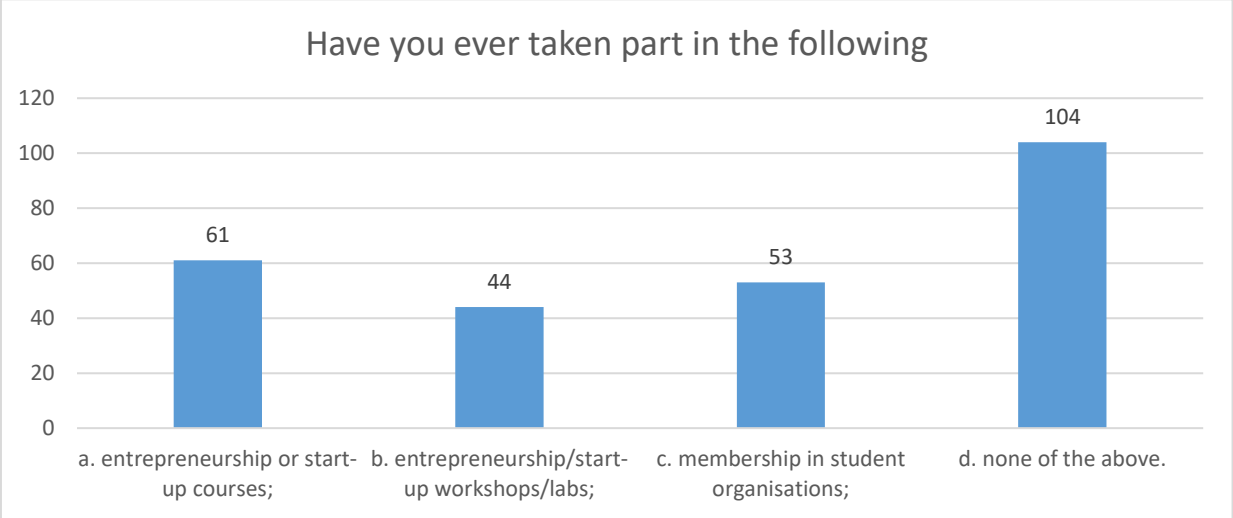

Figure 7. Entrepreneurial background 1

The entrepreneurial background was measured using three items. For the first item (Table 6, Appendix 2 and Fig. 7), the results indicate that entrepreneurship courses are the most popular amongst senior students, followed by membership in student organisations. There is also a severe lack of training and experience amongst the subjects, as many of those investigated have not received entrepreneurial training or have no entrepreneurial experience.

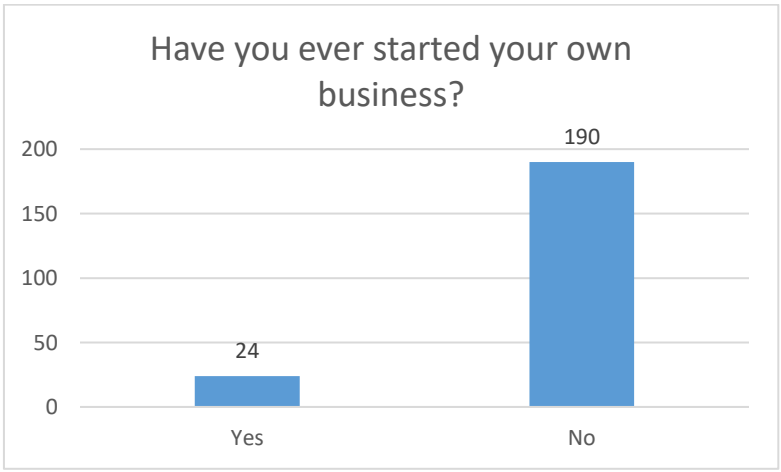

Figure 8. Entrepreneurial background 2

The majority of respondents have not started a business until this investigation (Table 7, Appendix 2 and Fig. 8). However, as the entrepreneurial background is also influenced by subjective norms, the propensity towards an entrepreneurial attitude is not as alarming since most of their relatives or close friends feature an entrepreneurial background (Table 8, Appendix 2 and Fig. 9).

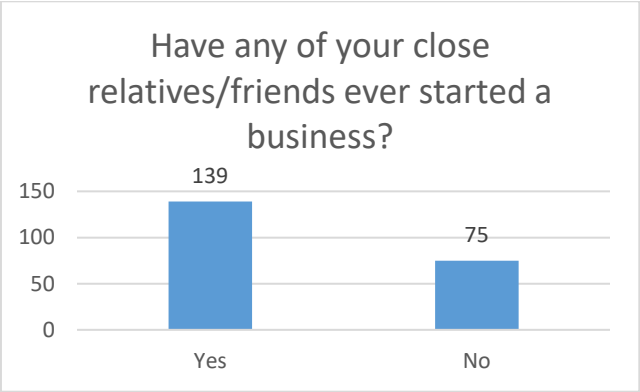

Figure 9. Entrepreneurial background 3

The entrepreneurial attitude was measured using 3 items on a 5-point Likert scale (measured in 5 points from 2 to -2 as follows: total agreement at 2.0, agreement at 1.0, neither agreement nor disagreement at 0, disagreement at -1.0, total disagreement at -2.0), as shown in Table 9, Appendix 2 and Fig. 10.

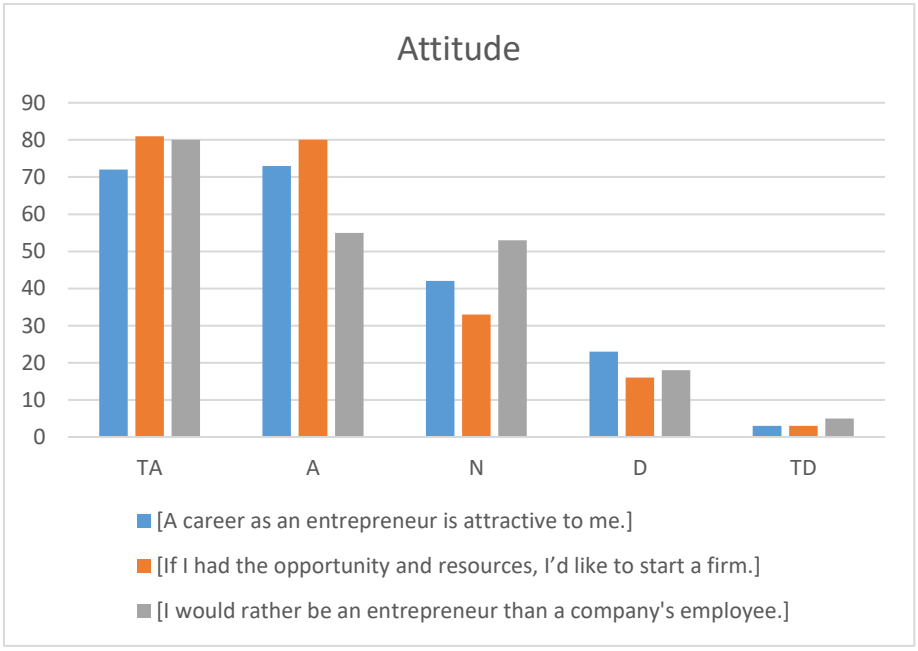

Figure 10. Entrepreneurial attitude

Item results for entrepreneurial attitude (Table 9, Appendix 2 and Fig. 10) show positive appreciation on all three measures.

The highest appreciation is registered for the **[If I had the opportunity and resources, I'd like to start a firm.] item,** at a score of 1.033 (measured in 5 points from 2 to -2 as follows: total agreement at 2.0, agreement at 1.0, neither agreement nor disagreement at 0, disagreement at -1.0, total disagreement at -2.0).

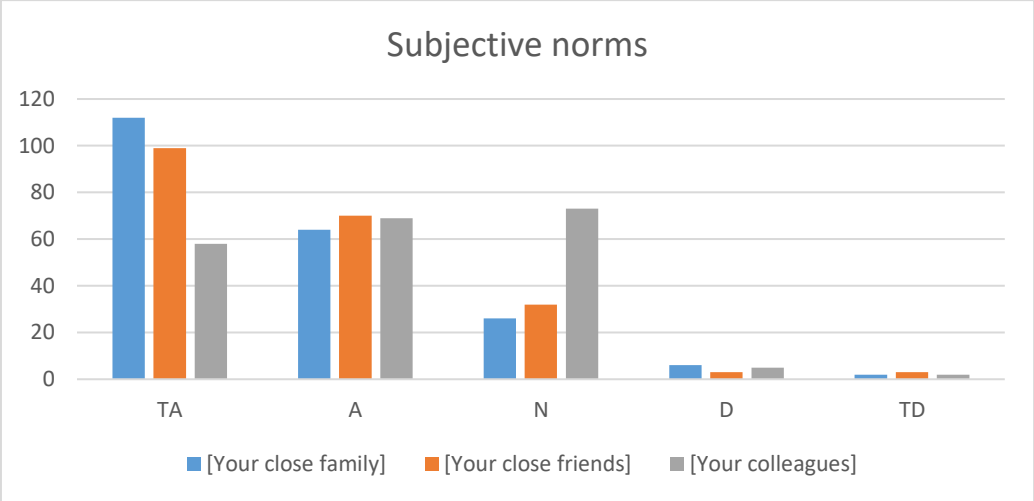

Figure 11. Subjective norms

All measures for the "Subjective norms" variable indicate positive appreciations, the highest score for subjective norms in entrepreneurship was registered by close family, followed by friends and colleagues.

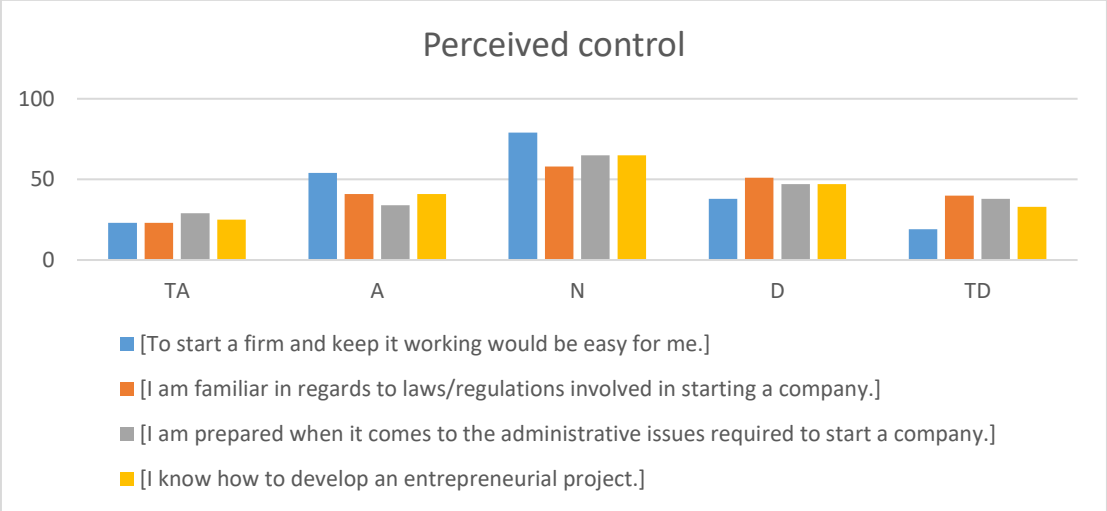

Figure 12. Perceived control

For measures of perceived behavioural control (Table 11, Appendix 2 and Fig. 12), except for the positive appreciation of the ease of starting a company (which is rather an undecided one, at a value closest to neither agree nor disagree with a very low score of 0.113), respondents have negative perceptions regarding their control over starting a business. The lowest score is registered by the perception of one's familiarity with the laws and regulations involved in starting a company, followed by the required administrative issues.

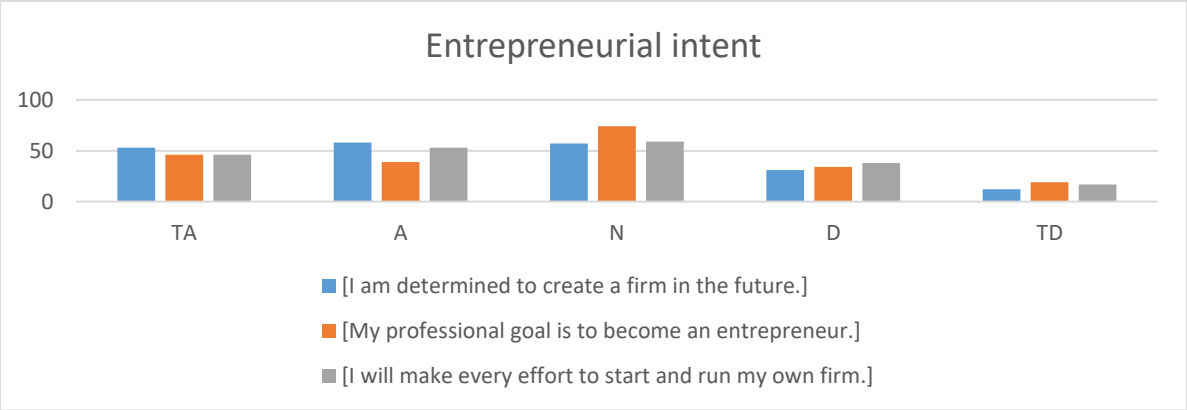

Figure 13. Entrepreneurial intent

Entrepreneurial intent (Table 12, Appendix 2 and Fig. 13), measured with 3 items, has positive results tending towards agreement on all three items, even if the scores are low.

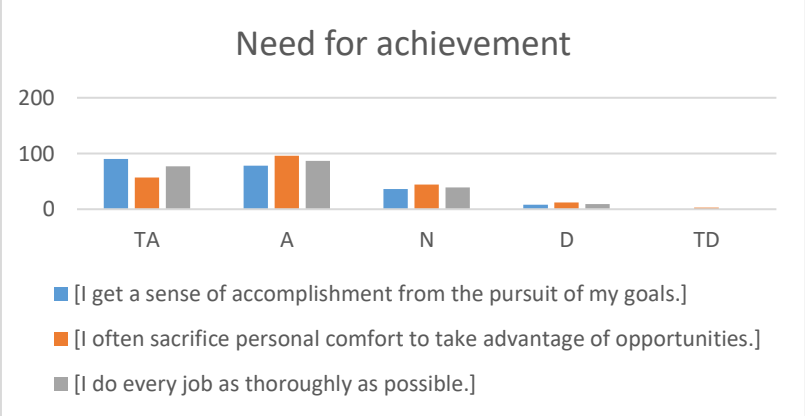

Figure 14. Need for achievement

The "Need for achievement" variable (Table 13, Appendix 2 and Fig. 14) registers positive values, at relatively high scores, with an agreement for all items. There is thus a high need for

achievement amongst the investigated subjects, which translates as a high entrepreneurial potential for this entrepreneurial trait.

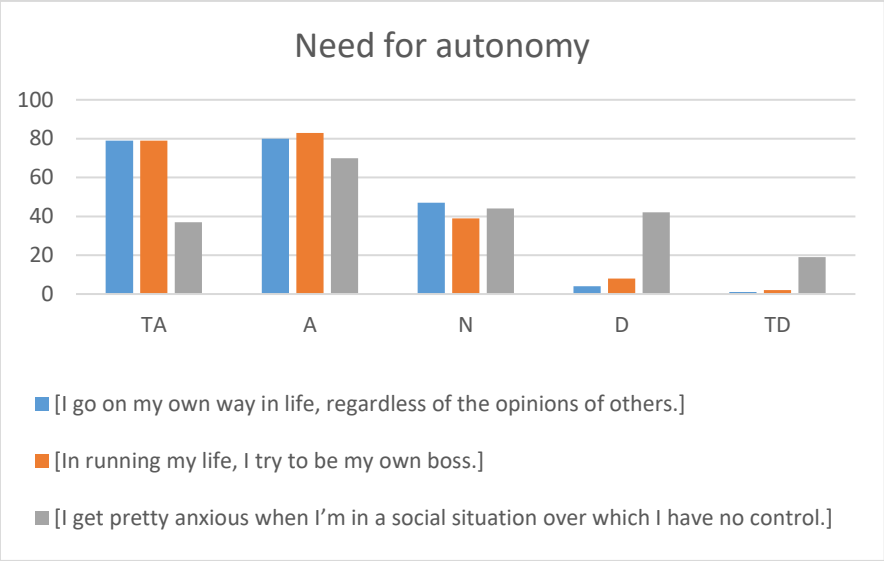

Figure 15. Need for autonomy

The need for autonomy (Table 14, Appendix 2 and Fig. 15), another entrepreneurial trait, registers positively across all three questionnaire items. The first two items indicate agreement, and "I get pretty anxious when I'm in a social situation over which I have no control", at a low score of 0.3, still yields towards agreement.

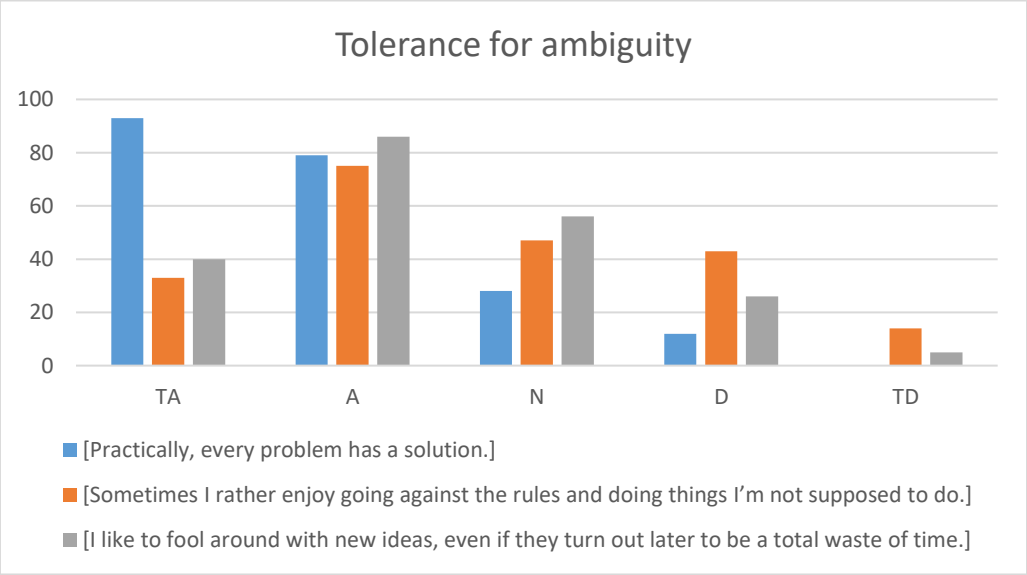

Figure 16. Tolerance for ambiguity

Tolerance for ambiguity yields positive results (Table 15, Appendix 2 and Fig. 16); at low scores, the first item ("Practically, every problem has a solution") features the highest appreciation (1.188 – slight tendency towards total agreement).
It is safe to assert that the investigated population exhibits a positive tolerance for ambiguity as an entrepreneurial trait.

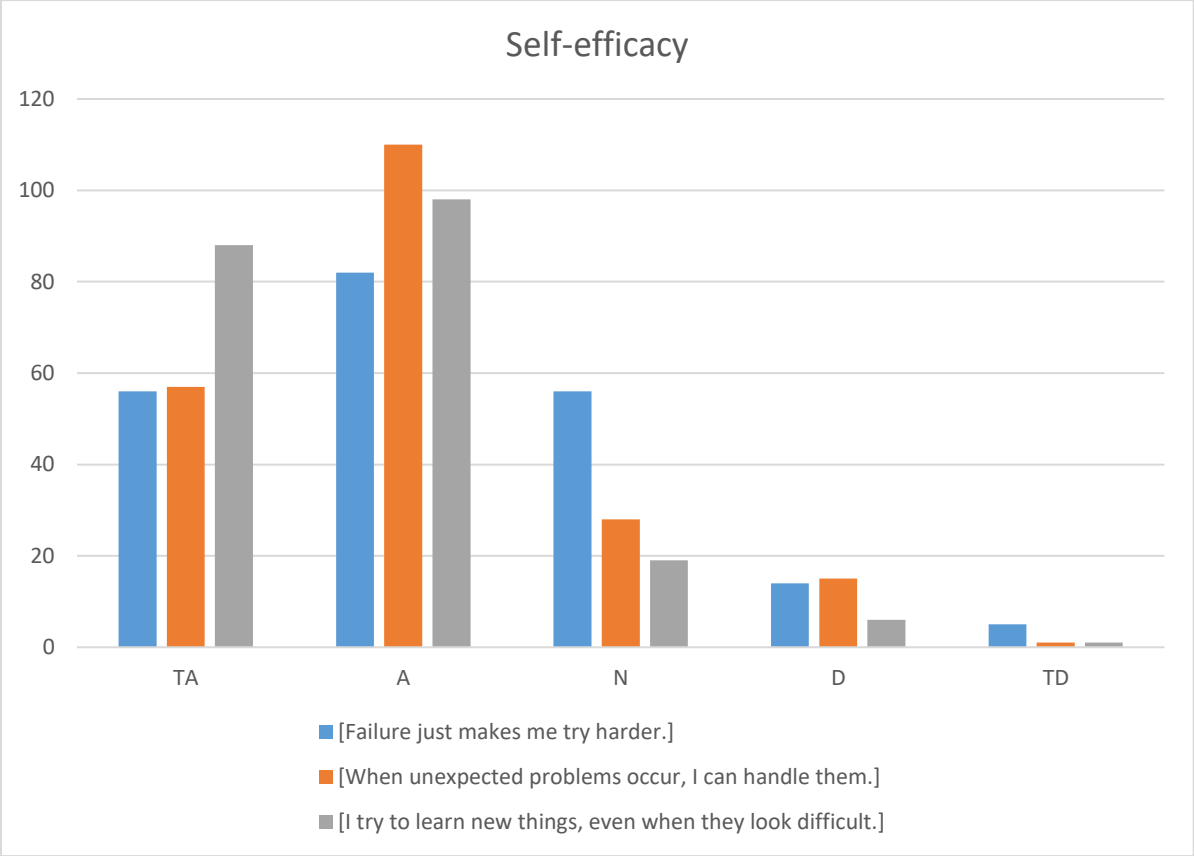

Figure 17. Self-efficacy

Self-efficacy, another entrepreneurial trait, registers positive results (Table 16, Appendix 2 and Fig. 17), with the highest positive perception for its third item, "I try to learn new things, even when they look difficult".
As generally expected, the lowest score is rendered by the first item, "Failure just makes me try harder", though even in this case, the tendency is towards agreement.

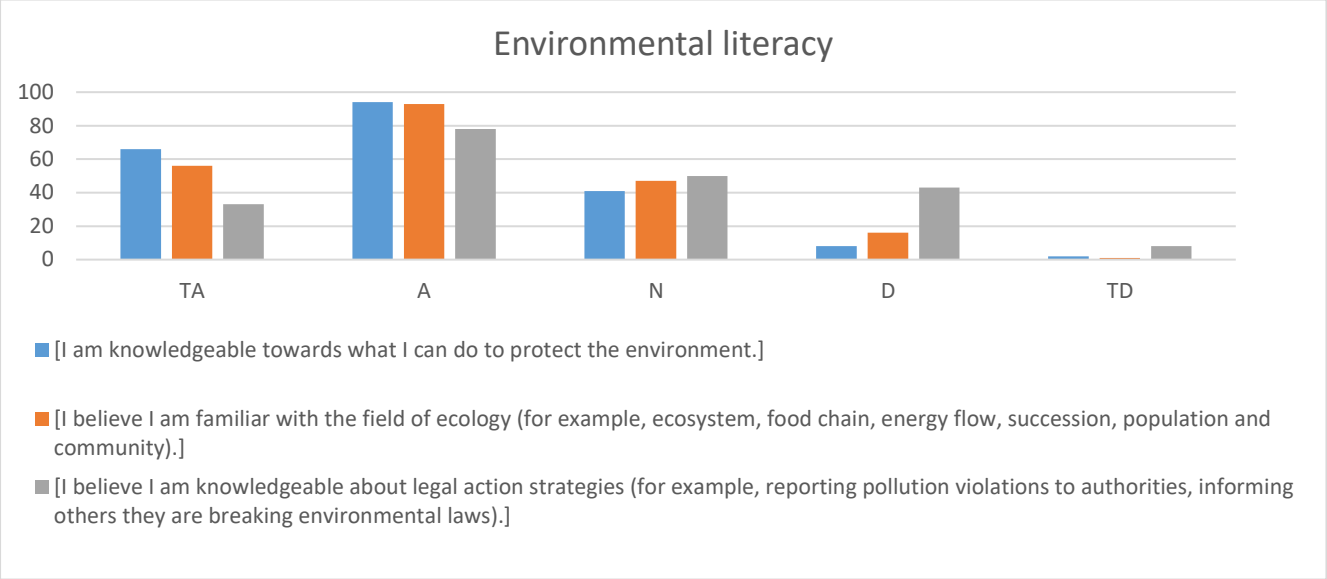

Figure 18. Perceived environmental literacy

Perceived environmental literacy also exhibits positive appreciations (Table 17, Appendix 2 and Fig. 18); however, knowledge about legal action strategies has a very low positive score (0.399), which means that respondents are generally undecided when it comes to asserting their level of knowledge regarding this particular topic.

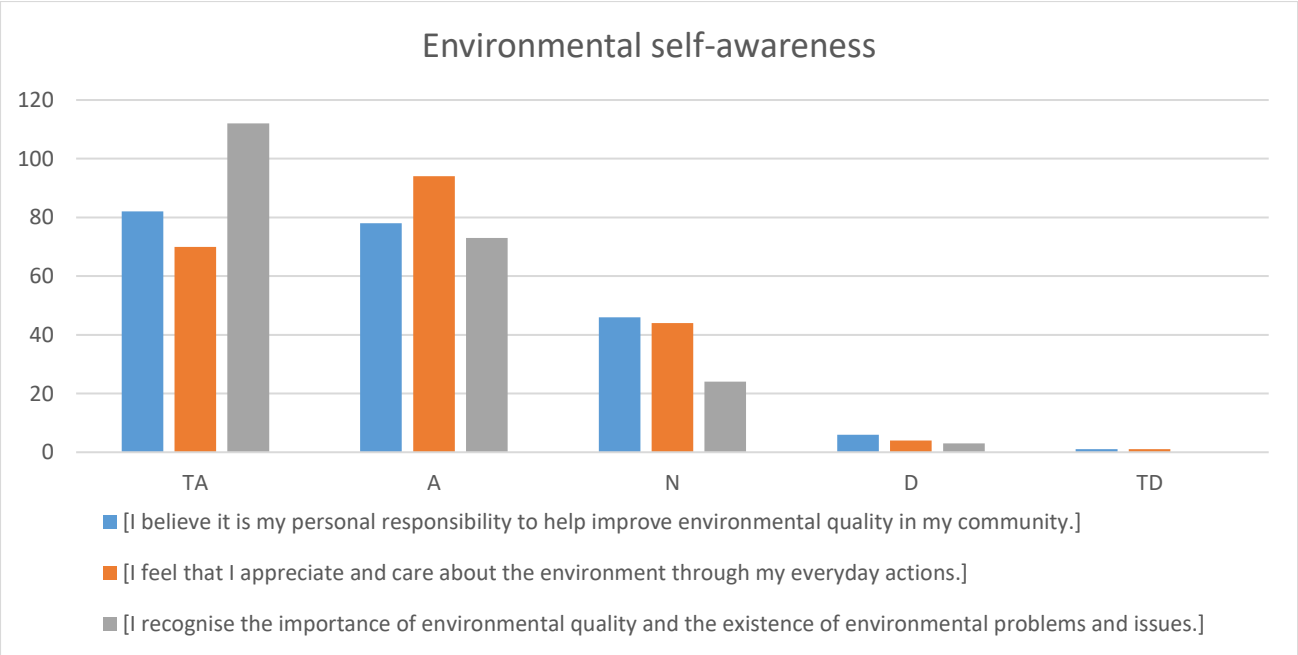

Figure 19. Environmental self-awareness

Perceived environmental self-awareness registers positive results at high scores (Table 18, Appendix 2 and Fig. 19), meaning that the investigated population manifests an increased environmental awareness, and the highest registered score is for the "I recognize the importance of environmental quality and the existence of environmental issues" item.

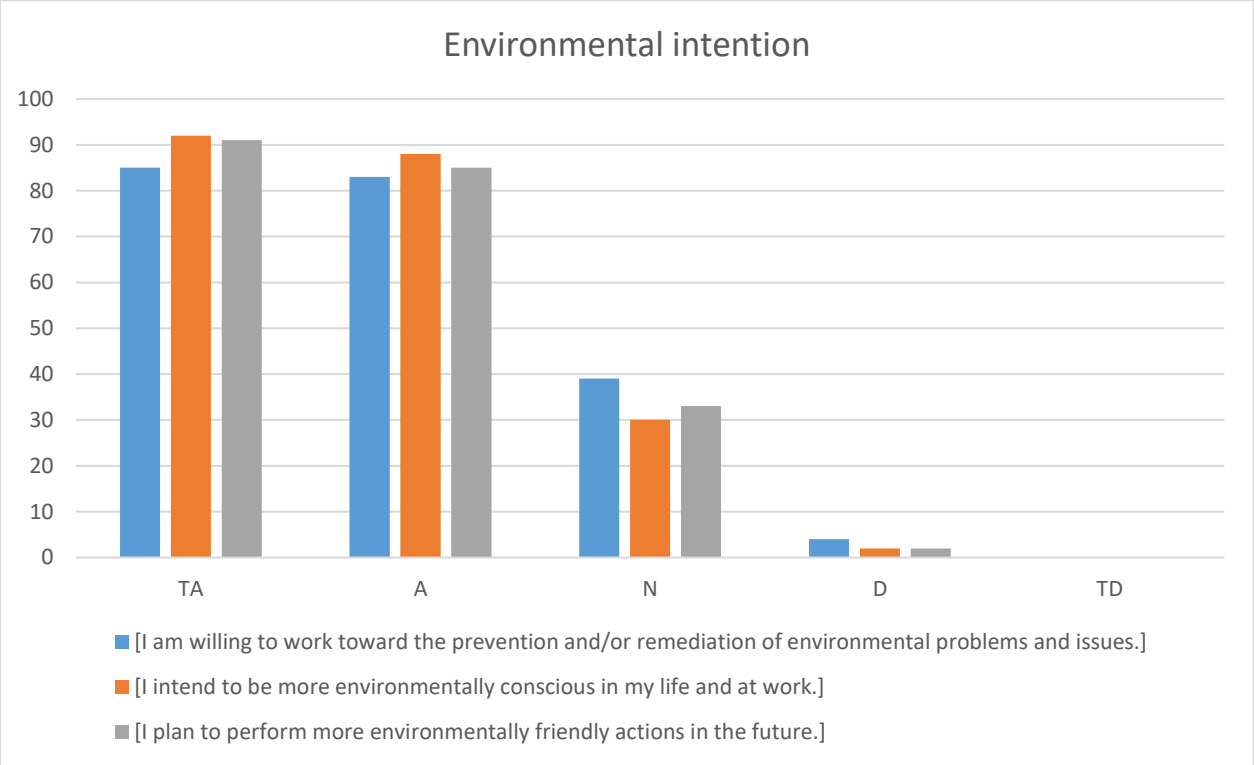

Figure 20. Pro-environmental intention

The pro-environmental intention was measured using three items (Table 19, Appendix 2 and Fig. 20) and registers a positive evaluation across all items at high scores.
The investigated population thus manifests a high intention to perform environmentally friendly actions.
Scores for all three items constituting this variable slightly exceed agreement.

5. Conclusion

Most of the hypotheses are confirmed, as can be seen in Table 20.

Table 20. Hypotheses confirmation

Hypothesis	Validation
H1. Regarding their environmental education background, most students have taken part in environmental courses or environmental education workshops.	Yes
H2. Most students have taken part of entrepreneurship or start-up courses.	Yes
H3. Most students have never started a business.	Yes
H4. Most students have a friend or relative who has started their own business.	Yes
H5. Students manifest a positive entrepreneurial attitude.	Yes
H6. The most important people in supporting students' entrepreneurial decisions are close family and friends.	Yes
H7. Students' perceptions of behavioural control over starting a business are negative (disagreement).	Yes
H8. Students manifest a positive intent towards starting a business.	Yes
H9. Students manifest a positive need for achievement.	Yes
H10. Students manifest a positive need for autonomy.	Yes
H11. Students manifest a high tolerance for ambiguity.	Yes
H12. Students manifest high self-efficacy.	Yes
H13. Students will positively assess their environmental literacy.	Yes
H14. Students will register high environmental self-awareness.	Yes
H15. Students will register a positive pro-environmental intention.	Yes

Project: **2021-1-RO01-KA220-HED-000032162**
***"Green education for green Biotech Enterprise"* GreenBE**

Appendix 1. Questionnaire- A quantitative assessment of biotech students' ecological behaviour and entrepreneurial intention

Part 1. Information Sheet

This page provides you with information about the processing and protection of your personal data in Erasmus+ Project **GreenBE** (Green Education for Green Biotech Enterprise).

The result intended for this project activity is a **critical assessment of the teaching and learning practices in Green Biotech Education.** The target respondents for this particular survey are Life Sciences/Biotech students. The aim of this survey is to provide an assessment of Life Sciences/Biotech students' ecological behaviour and green entrepreneurial intention.

The results should provide a clearer view of which factors foster ecological behaviour and green entrepreneurial intention and how the results of professors' responsible research and innovation practices can be integrated into student courses, mentorship programmes, and existing business ventures. Our conclusions will be provided for the HEIs partners' top management recommendations to be inserted into their strategies and further green action plans.

The results of the present study will also help us deliver the following:

- Innovative educational resources (new module course, training materials, mentoring guide, teaching/learning digital portal) for Master and PhD students in Biotech & Economics covering the topic of Biotech Green start-ups/enterprises.
- Develop specific knowledge and competences in Biotech Green Entrepreneurship by direct training of 55 teachers/tutors and 25 Master and PhD students from the Biotech & Economics areas.
- Strengthen the integration of the project's partners into the national and European Biotech Green Entrepreneurial Ecosystem.

If you're here, then you are at least thinking about completing this survey. The survey is relatively short—it takes a maximum of 10 minutes to complete, **your answers are anonymous and will only be used for statistical purposes.**

Important note: When answering the questions, do not overthink the answer. Go with your first impression. There's no right or wrong answer to anything in this survey. And please be sure to actually select an answer for each question!

Thanks for taking this survey!
The GreenBE Team

Please check the following box if you agree to proceed with the survey:

I have read this page and agree to proceed with the survey. ○

Project: **2021-1-RO01-KA220-HED-000032162**
***"Green education for green Biotech Enterprise"* GreenBE**

1. How old are you? (circle one)
a. 18-21 b. 22-25 c. 26-29 d. 30-33 e. 34-37 f. 38+

2. Gender? (circle one) a. Male b. Female c. Prefer not to answer

3. What is your field of study?
a. Biotechnology
b. Economics
c. Information and Communications Technology (ICT)
d. Environmental Science / Environmental Engineering
e. Life Sciences
f. Other (*OR… f. Engineering / g. Other*)

4. Which is your country of residence?

_____

5. Have you ever taken part in the following (multiple answers possible):
a. environmental courses;
b. environmental education workshops;
c. membership in environmental organisations;
d. membership or subscription to major sources of environmental information;
e. none of the above.

6. Have you ever taken part in the following (multiple answers possible):
a. entrepreneurship or start-up courses;
b. entrepreneurship/start-up workshops/labs;
c. membership in student organisations;
d. none of the above.

7. Have you ever started your own business? yes no

8. Has any of your close relatives/friends ever started a business? yes no

9. Indicate your level of agreement with the statements in the following paragraphs (circle one answer in each case): Totally agree (TA), Agree (A), Neither agree nor disagree (N), Disagree (D), Totally disagree (TD)

A career as an entrepreneur is attractive to me. TA A N D TD
If I had the opportunity and resources, I'd like to start a firm. TA A N D TD
I would rather be an entrepreneur than a company's employee. TA A N D TD

Project: **2021-1-RO01-KA220-HED-000032162**
***"Green education for green Biotech Enterprise"* GreenBE**

To start a firm and keep it working would be easy for me. TA A N D TD
I am familiar in regard to laws/regulations involved in starting a company. TA A N D TD
I am prepared when it comes to the administrative issues required to start a company. TA N D TD
I know how to develop an entrepreneurial project. TA A N D TD

I am determined to create a firm in the future. TA A N D TD
My professional goal is to become an entrepreneur. TA A N D TD
I will make every effort to start and run my own firm.

I get a sense of accomplishment from the pursuit of my goals. TA A N D TD
I often sacrifice personal comfort to take advantage of opportunities. TA A N D TD
I do every job as thoroughly as possible. TA A N D TD

I go on my own way in life, regardless of the opinions of others. TA A N D TD
In running my life, I try to be my own boss. TA A N D TD
I get pretty anxious when I'm in a social situation over which I have no control. TA A N D TD

Practically, every problem has a solution. TA A N D TD
Sometimes I rather enjoy going against the rules and doing things I'm not supposed to do. TA A N D TD
I like to fool around with new ideas, even if they turn out later to be a total waste of time. TA A N D TD

Failure just makes me try harder. TA A N D TD
When unexpected problems occur, I can handle them. TA A N D TD
I try to learn new things, even when they look difficult. TA A N D TD

I am knowledgeable towards what I can do to protect the environment. TA A N D TD
I believe I am familiar with the field of ecology (for example, ecosystem, food chain, energy flow, succession, population and community). TA A N D TD
I believe I am knowledgeable about legal action strategies (for example, reporting pollution violations to authorities, informing others they are breaking environmental laws). TA A N D TD

I believe it is my personal responsibility to help improve environmental quality in my community. TA A N D TD
I feel that I appreciate and care about the environment through my everyday actions. TA A N D TD
I recognise the importance of environmental quality and the existence of environmental problems and issues. TA A N D TD

I am willing to work toward the prevention and/or remediation of environmental problems and issues. TA A N D TD
I intend to be more environmentally conscious in my life and at work. TA A N D TD
I plan to perform more environmentally friendly actions in the future. TA A N D TD

10. If you decided to create a firm, to what extent do you think people in your close environment would approve of that decision? (circle one)
Your close family TA A N D TD
Your close friends TA A N D TD
Your colleagues TA A N D TD

Project: **2021-1-RO01-KA220-HED-000032162**
***"Green education for green Biotech Enterprise"* GreenBE**

Appendix 2. Tables

Table 1. Age

1. How old are you?	Count
a. 18-21	113
b. 22-25	58
c. 26-29	20
d. 30-33	8
e. 34-37	3
f. 38+	12

Table 2. Gender

2. Gender	Count
a. Male	94
b. Female	117
c. Prefer not to answer	2

Table 3. Field of study

What is your field of study?	Count
a. Biotechnology	119
b. Economics	26
c. Information and Communications Technology (ICT)	28
d. Environmental Science / Environmental Engineering	7
e. Life Sciences	8
f. Other	25

Table 4. Country

Which is your country of residence?	Count
Romania	115
Spain	48
Italy	26
Greece	12
Tunisia	3
Belgium	2
Turkey	2
Lebanon	2
Morocco	1

Project: **2021-1-RO01-KA220-HED-000032162**
***"Green education for green Biotech Enterprise"* GreenBE**

Table 5. Environmental literacy

Have you ever taken part in the following	Count
a. environmental courses;	84
b. environmental education workshops;	40
c. membership in environmental organisations;	26
d. membership or subscription to major sources of environmental information;	22
e. none of the above.	93

Table 6. Entrepreneurial background 1

6. Have you ever taken part in the following	Count
a. entrepreneurship or start-up courses;	61
b. entrepreneurship/start-up workshops/labs;	44
c. membership in student organisations;	53
d. none of the above.	104

Table 7. Entrepreneurial background 2

7. Have you ever started your own business?	Count
Yes	24
No	190

Table 8. Entrepreneurial background 3

8. Have any of your close relatives/friends ever started a business?	Count
Yes	139
No	75

Table 9. Entrepreneurial attitude

Indicate your level of agreement	[A career as an entrepreneur is attractive to me.]	[If I had the opportunity and resources, I'd like to start a firm.]	[I would rather be an entrepreneur than a company's employee.]
TA	72	81	80
A	73	80	55
N	42	33	53
D	23	16	18
TD	3	3	5
per item	**0.883**	**1.033**	**0.878**

Table 10. Subjective norms

10. If you decided to create a firm, to what extent do you think people in your close environment would approve of that decision?	**[Your close family]**	**[Your close friends]**	**[Your colleagues]**
TA	112	99	58
A	64	70	69
N	26	32	73
D	6	3	5
TD	2	3	2
per item	**1.305**	**1.216**	**0.826**

Table 11. Perceived control

Indicate your level of agreement	**[To start a firm and keep it working would be easy for me.]**	**[I am familiar in regard to laws/regulations involved in starting a company.]**	**[I am prepared when it comes to the administrative issues required to start a company.]**	**[I know how to develop an entrepreneurial project.]**
TA	23	23	29	25
A	54	41	34	41
N	79	58	65	65
D	38	51	47	47
TD	19	40	38	33
per item	**0.113**	**-0.207**	**-0.146**	**-0.103**

Table 12. Entrepreneurial intent

Indicate your level of agreement	**[I am determined to create a firm in the future.]**	**[My professional goal is to become an entrepreneur.]**	**[I will make every effort to start and run my own firm.]**
TA	53	46	46
A	58	39	53
N	57	74	59
D	31	34	38
TD	12	19	17
per item	**0.512**	**0.277**	**0.343**

Table 13. Need for achievement

Indicate your level of agreement	[I get a sense of accomplishment from the pursuit of my goals.]	[I often sacrifice personal comfort to take advantage of opportunities.]	[I do every job as thoroughly as possible.]
TA	90	57	77
A	78	96	87
N	36	44	39
D	8	12	9
TD	0	3	0
per item	**1.174**	**0.901**	**1.089**

Table 14. Need for autonomy

Indicate your level of agreement	[I go on my own way in life, regardless of the opinions of others.]	[In running my life, I try to be my own boss.]	[I get pretty anxious when I'm in a social situation over which I have no control.]
TA	79	79	37
A	80	83	70
N	47	39	44
D	4	8	42
TD	1	2	19
per item	**1.089**	**1.075**	**0.300**

Table 15. Tolerance for ambiguity

Indicate your level of agreement	[Practically, every problem has a solution.]	[Sometimes I rather enjoy going against the rules and doing things I'm not supposed to do.]	[I like to fool around with new ideas, even if they turn out later to be a total waste of time.]
TA	93	33	40
A	79	75	86
N	28	47	56
D	12	43	26
TD	0	14	5
per item	**1.188**	**0.329**	**0.610**

Table 16. Self-efficacy

Indicate your level of agreement	[Failure just makes me try harder.]	[When unexpected problems occur, I can handle them.]	[I try to learn new things, even when they look difficult.]
TA	56	57	88
A	82	110	98
N	56	28	19
D	14	15	6
TD	5	1	1
per item	**0.798**	**0.972**	**1.249**

Table 17. Perceived environmental literacy

Indicate your level of agreement	[I am knowledgeable towards what I can do to protect the environment.]	[I believe I am familiar with the field of ecology (for example, ecosystem, food chain, energy flow, succession, population, and community).]	[I believe I am knowledgeable about legal action strategies (for example, reporting pollution violations to authorities, informing others they are breaking environmental laws).]
TA	66	56	33
A	94	93	78
N	41	47	50
D	8	16	43
TD	2	1	8
per item	**1.005**	**0.878**	**0.399**

Table 18. Environmental self-awareness

Indicate your level of agreement	[I believe it is my personal responsibility to help improve environmental quality in my community.]	[I feel that I appreciate and care about the environment through my everyday actions.]	[I recognize the importance of environmental quality and the existence of environmental problems and issues.]
TA	82	70	112
A	78	94	73
N	46	44	24
D	6	4	3
TD	1	1	0
per item	1.099	1.070	1.380

Table 19. Pro-environmental intention

Indicate your level of agreement	**[I am willing to work toward the prevention and/or remediation of environmental problems and issues.]**	**[I intend to be more environmentally conscious in my life and at work.]**	**[I plan to perform more environmentally friendly actions in the future.]**
TA	85	92	91
A	83	88	85
N	39	30	33
D	4	2	2
TD	0	0	0
per item	**1.169**	**1.268**	**1.244**