

**THE IMPORTANCE OF GREEN AREAS IN EVERYDAY LIFE
IN THE VIEW OF FIRST-YEAR STUDENTS AT THE
FACULTY OF FOOD AND ANIMAL SCIENCES**

**IMPORTANȚA ZONELOR VERZI ÎN VIAȚA COTIDIANĂ ÎN VIZIUNEA
STUDENȚILOR DIN ANUL I DE LA FACULTATEA DE INGINERIA
RESURSELOR ANIMALE SI ALIMENTARE**

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***Abstract:** The fast pace of development of cities in the last decades has led to an increase in the degree of pollution and implicitly to a lower urban comfort. A viable option to slow down the negative effects of urbanization is to reintroduce green areas to cities. For this approach to be successful, it is important for the young generation to be aware of the benefits of natural and landscaped green spaces in everyday life. A questionnaire about green areas was applied to 88 students from the Faculty of Animal and Food Resources Engineering, to assess their opinion on how green areas, in different forms, can make life healthier and more beautiful. The sample was composed of 62 female and 26 male students who had to answer 15 questions in the questionnaire. Regarding the results of the survey, the presence of parks near home or workplace is highly appreciated by 57% of the respondents and there is an increase in interest among students towards new methods of expanding green spaces, they consider green facades attractive (18%), balconies decorated with plants (15%) and green roofs (11%).*

Key words: students' opinion, questionnaire survey, green areas

***Rezumat:** Ritmul alert de dezvoltare al orașelor din ultimele decenii a condus la creșterea gradului de poluare și implicit la un confort urban mai scăzut. O opțiune viabilă pentru a încetini efectele negative ale urbanizării este aceea de a reintroduce zonele verzi la nivelul orașelor. Pentru ca acest demers să aibă succes, este important ca tânăra generație să conștientizeze beneficiile spațiilor verzi naturale și amenajate în viața de zi cu zi. Un chestionar referitor la zonele verzi a fost aplicat la 88 de studenți din cadrul Facultății de Ingineria Resurselor Animale și Alimentare, pentru a evalua opinia lor cu privire la modul în care zonele verzi, sub diferite forme, pot face viața mai sănătoasă și mai frumoasă. Eșantionul a fost compus din 62 studenți și 26 de studenți ce au trebuit să răspundă la 15 întrebări în cadrul chestionarului. În ceea ce privesc rezultatele sondajului prezența parcurilor în apropiere locuinței sau a locului de muncă este foarte mult apreciată de către 57% dintre repondenți și se remarcă creșterea interesului în rândul studenților față de metodele noi de extindere a spațiilor verzi, ei considerând atractive fațadele verzi (18%), balcoanele amenajate cu plante (15%) și acoperișurile verzi (11%).*

Cuvinte cheie: opinia studenților, chestionar, zone verzi,

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INTRODUCTION

The development of cities by suppressing green spaces at the expense of built-up areas generates a multitude of problems for the inhabitants of the respective areas. Rapid urbanization poses a challenge to the environment, including increased energy consumption, pollution and loss of biodiversity. In this context, more and more emphasis is placed on finding ways to introduce green areas into built-up areas, in all possible forms. Either parks or landscaped squares, where there is available land around the buildings, or even in the building or on the building (balconies, terraces or facades and green roofs). The advantages are numerous and are experienced especially by the inhabitants of the respective areas by reducing aridity and obtaining an increased degree of attractiveness (Dascălu and Cojocariu, 2016). Through statistical methods, O.A. Neto analyzes people's perceptions and evaluations of green facades in public environments (Neto *et. al.*, 2021). Less traditional methods of extending green areas such as facades and green roofs have become increasingly interesting for both researchers and city dwellers. Studies conducted on green roofs and facades have shown that they contribute to the greening of habitats (Francis and Lorimer, 2011). At the same time, they offer an improvement in air quality and mitigates excessive heat, which leads to increased attention in order to introduce them on a larger scale, at the level of cities.

The present study aims to evaluate the opinion of students from the Faculty of Animal and Food Resources Engineering before they participate in specialized courses in the environment or environmental protection, in relation to ways to counterbalance the undesirable effects of the disappearance of natural green areas, for example walls and green roofs.

MATERIAL AND METHOD

The questionnaire on the topic of green areas in the students' perception was applied to a number of 88 students, 50 of which from the Specialization in Control and Expertise of Food Products (CEPA) and 38 from the Specialization in Engineering and Management in Public Food and Agrotourism (IMAPA).

The questionnaire analyzes whether the environment the students come from (rural area, a small and quiet town or a big and crowded city) influences their choices regarding green spaces. The students' openness to other ways of obtaining green spaces through balconies, terraces and green walls is also analyzed. Comparisons will also be made between the opinions of students according to specialization.

In the statistical research, the statistical description through radial structure type graphs and the non-linear Spearman correlation performed with the MS EXCEL application from the MS Office 2019 professional package were used (Chiruță, 2019). The Spearman correlation of the ranks is the non-parametric version of the Pearson correlation.

In this case, in order to determine the correlations between the answers to the questions, the Spearman correlation was used as the answers to the questions lead to data of an ordinary type (Very much, Much, Moderate, Little bit, Not at all) and it is not necessary to fulfill the condition that the data to have a normal distribution (David Levine and David Stephan, 2014).

The survey consists of the following 15 questions, and also, personal information concerning the age, sex, and faculty major of the respondents:

Q1. Until you came to college you lived: a. In a rural area, b. In a small and quiet town, c. In a big and crowded city;

Q2. After graduation you would like to live: a. In a rural area, b. In a small and quiet town, c. In a big and crowded city;

Q3. If you could decide where to live what would you choose: a. House with land arranged as a green area, b. House without land or with a paved yard without vegetation, c. Block of flats;

Q4. For the arrangement of the green area near the house you would decide to: a. Do the arrangements yourself, b. Hire a specialist c. Don't arrange;

Q5. For the interior of your home, would you use plants for decoration?

Q6. If you are going to develop the land next to your home, would you be interested in allocating time for the maintenance of the development? a. Every day, b. Weekly, c. Monthly, d. Not at all;

Q7. What kinds of green areas do you prefer: a. A natural area nearby (wooded area, lake or stream, etc.), b. Parks in neighborhoods, c. Green facades and roofs, d. Balconies or terraces furnished with plants;

Q8. What layouts do you think bring more relaxation to cities? a. A natural area nearby (wooded area, lake or stream, etc.), b. Parks in neighborhoods, c. Green facades and roofs, d. Balconies or terraces furnished with plants

Q9 How much would you appreciate it if the property where you live or work had. A natural area nearby (wooded area, lake or stream, etc.): a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

Q10. How much would you appreciate it if the property where you live or work had. Parks in neighborhoods: a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

Q11. How much would you appreciate it if the property where you live or work had. Green facades and roofs: a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

Q12. How much would you appreciate it if the property where you live or work had. Balconies or terraces furnished with plants: a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

Q13. Which of the following types of man-made landscaping do you find more attractive or visually impactful: a. Green facades, b. Green roofs, c. Balconies or terraces furnished with plants, d. Terraces arranged with plants e. None;

Q14. Do you think that, in order to improve the quality of everyday life, local authorities should invest more in: a. Green areas, b. Production/industrial/commercial areas, c. Combined areas (green areas and industrial/commercial areas);

Q15. What do you think is the right attitude to take to increase the quality of life in densely built urban areas: a. Nothing, nature reaches a balance by itself, b. To abandon polluting activities, c. To give up traditional individual car traffic and to develop shared electric traffic; d. To create green facades and roofs in as many areas as possible, e. To create green parks between the buildings.

RESULTS AND DISCUSSIONS

The centralization of the data was done in the MS Excel program for each question in the questionnaire, and the analysis of the obtained results was done

using graphic representations, both comparative between the groups of students from CEPA and IMPA and on the entire sample.

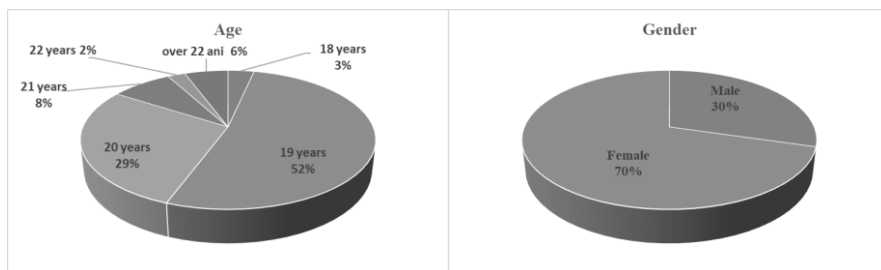


Fig. 1. Distribution of students according to age and gender

Figure 1 shows the distribution of students participating in the questionnaire according to age and gender. Thus, 52% of them are 19 years old and 70% are female.

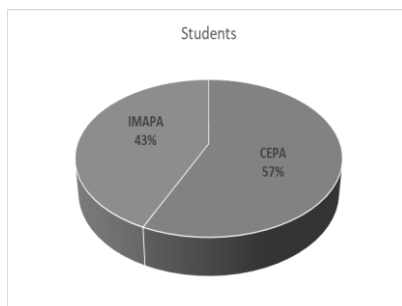


Fig. 2. Distribution of students by specializations CEPA vs. IMPA

Regarding their specialization, the questionnaire participants are distributed as follows: 57% are in the CEPA specialization and the rest, 43%, in the IMPA specialization (fig.2).

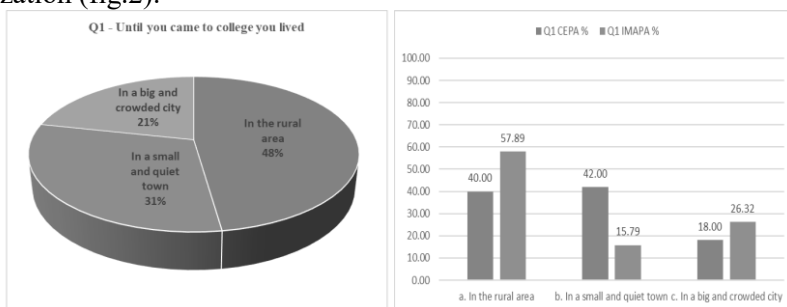


Fig. 3. Quiz results for question Q1. Until you came to college you lived: a. In a rural area, b. In a small and quiet town, c. In a big and crowded city

We notice that more than half of the students from the IMPA specialization, about 29 students come from rural areas, and from the CEPA specialization we have a number of 15 students from rural areas. In the case of small and quiet towns, we find 8 students from the IMPA specialization and 16 students from the CEPA

specialization. In the case of large and congested cities, we observe a similar share between the two faculties (fig. 3).

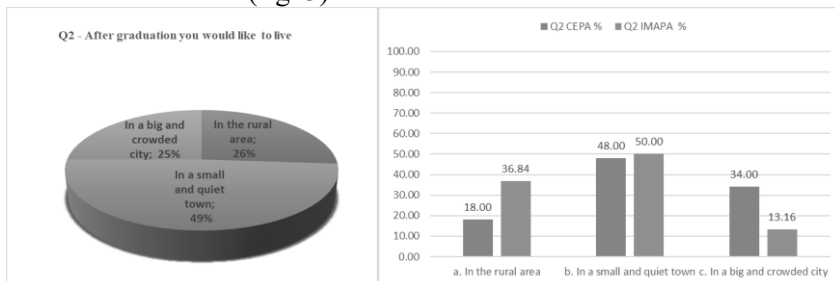


Fig. 4. Comparative results of CEPA versus IMAPA for question Q2. After graduation you would like to live: a. In a rural area, b. In a small and quiet town, c. In a big and crowded city

The majority of students (48%) from the CEPA specialization want to settle in a quiet or crowded city after graduation. For IMPA students, it can be seen that half of them want a small and quiet town, while the other half prefers the rural area (fig. 4).

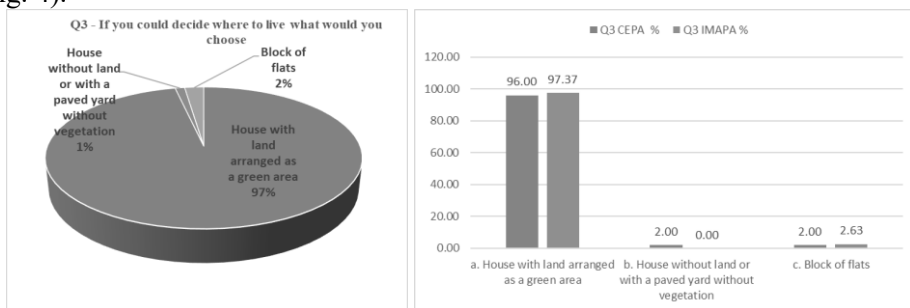


Fig. 5. Comparative results of CEPA versus IMAPA for question Q3. If you could decide where to live what would you choose: a. House with land arranged as a green area, b. House without land or with a paved yard without vegetation, c. Block of flats;

In figure 5 it can be seen that a clear majority (97%) for both specializations opted in favor of the house with land arranged as a green area.

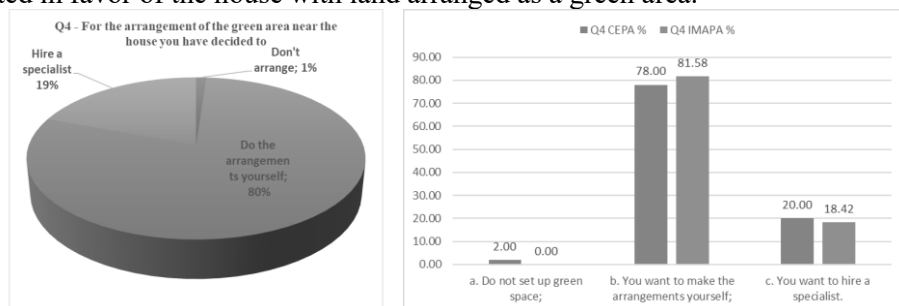


Fig. 6. Comparative results of CEPA versus IMAPA for question Q4. For the arrangement of the green area near the house you have decided to: a. Do the arrangements yourself, b. Hire a specialist c. Don't arrange;

Most students want to hire a specialist for the arrangement of the green area near the house. In addition, it can be observed that no student from the IMPA major wants to arrange their own green area (fig. 6).

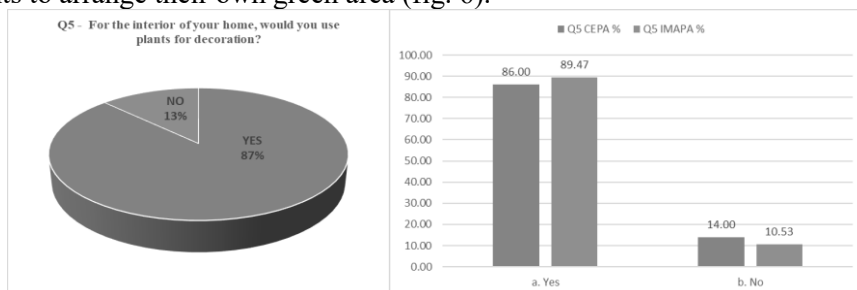


Fig. 7. Comparative results of CEPA versus IMAPA for question Q5. For the interior of your home, would you use plants for decoration? a. Yes, b. No.

Also, 87% of the total number of respondents were in favor of decorating interiors with natural plants. Taken separately by specialization, the percentages are 89.47% for those from the IMAPA specialization and 86% for the CEPA specialization (fig. 7).

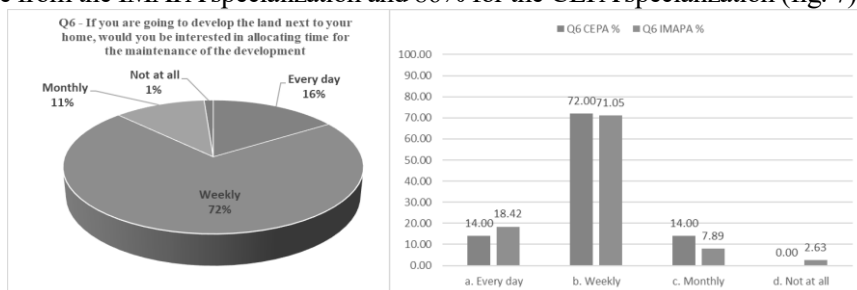


Fig. 8. Comparative results of CEPA versus IMAPA for question Q6. If you are going to develop the land next to your home, would you be interested in allocating time for the maintenance of the development? a. Every day, b. Weekly, c. Monthly, d. Not at all;

Students from both specializations prefer (72%) to take care of the land in the area of the house on a weekly basis (Fig. 8).

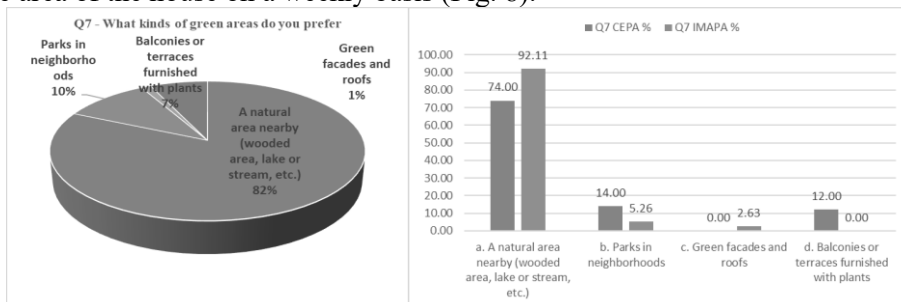


Fig. 9. Comparative results of CEPA versus IMAPA for question Q7. What kinds of green areas do you prefer: a. A natural area nearby (wooded area, lake or stream, etc.), b. Parks in neighborhoods, c. Green facades and roofs, d. Balconies or terraces furnished with plants;

The preference of students from the two specializations for the natural area consisting of forests, lakes or rivers is observed. At the opposite pole in respondents' preferences are green facades and roofs (1%), respectively balconies or terraces decorated with plants (7%).

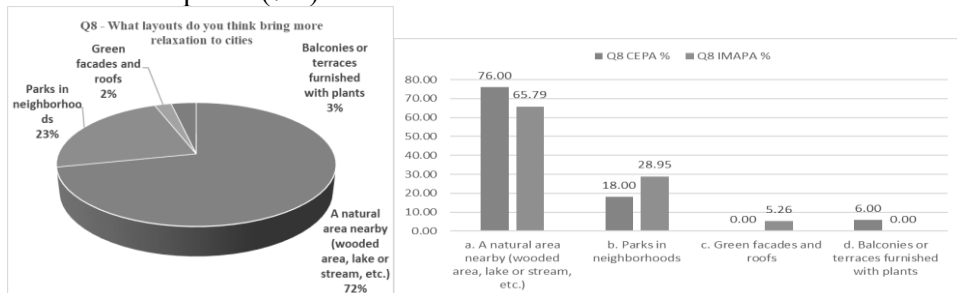


Fig. 10. Comparative results of CEPA versus IMAPA for question Q8. What layouts do you think bring more relaxation to cities? a. A natural area nearby (wooded area, lake or stream, etc.), b. Parks in neighborhoods, c. Green facades and roofs, d. Balconies or terraces furnished with plants

The results presented in figure 10 indicate the same preference of the survey participants for the natural area consisting of forests, lakes or streams as an area that can bring more relaxation in cities

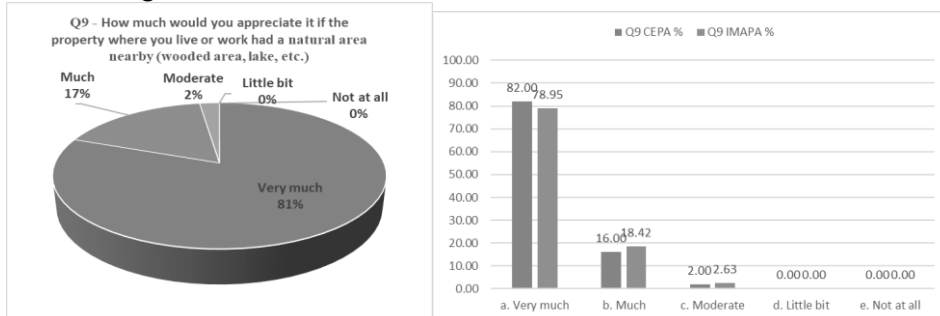


Fig. 11. Comparative results of CEPA versus IMAPA for question Q9 How much would you appreciate it if the property where you live or work had. A natural area nearby (wooded area, lake or stream, etc.): a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

Also, analyzing the results presented in figure 11, one can see the desire of the majority of students (81%) to live and work as close to nature as possible.

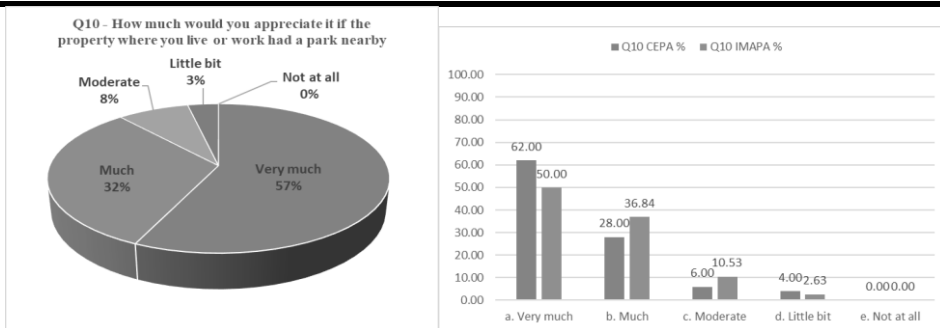


Fig. 12. Comparative results of CEPA versus IMAPA for question Q10. How much would you appreciate it if the property where you live or work had. Parks in neighborhoods: a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

57% of respondents highly appreciate the presence of nearby parks and only 3% consider this to be unimportant (fig. 12).

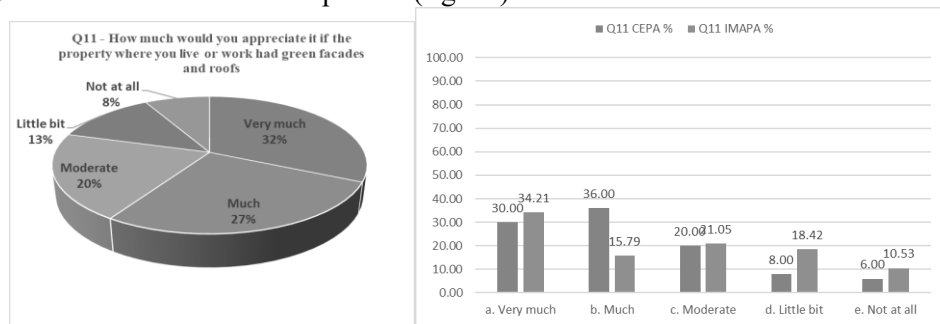


Fig. 13. Comparative results of CEPA versus IMAPA for question Q11. How much would you appreciate it if the property where you live or work had. Green facades and roofs: a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

Unlike the answers given to the previous questions, in this situation the answers no longer show a clear majority. Only one third of students would highly value green facades and roofs (fig. 13).

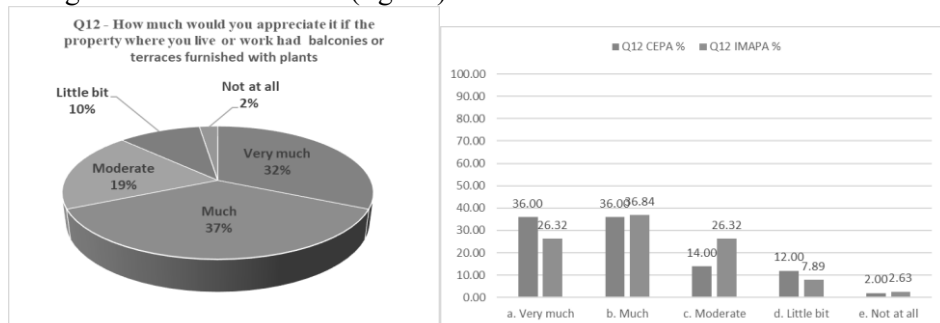


Fig. 14. Comparative results of CEPA versus IMAPA for question Q12. How much would you appreciate it if the property where you live or work had. Balconies or terraces furnished with plants: a. Very much b. Much, c. Moderate, d. Little bit, e. Not at all;

A similar percentage is recorded in the case of balconies and terraces decorated with potted plants (fig. 14).

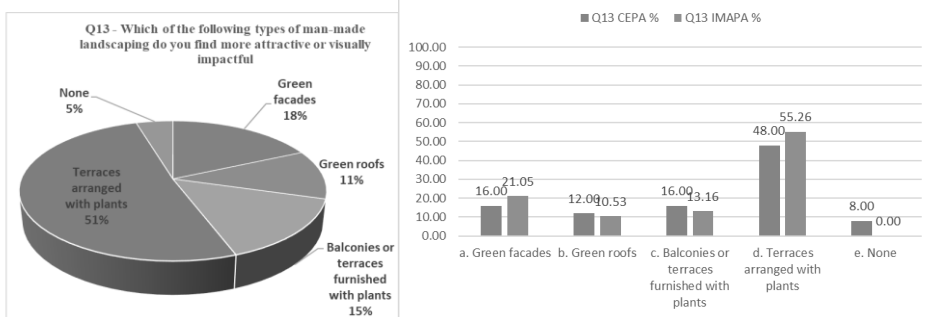


Fig. 15. Comparative results of CEPA versus IMAPA for question Q13. Which of the following types of man-made landscaping do you find more attractive or visually impactful: a. Green facades, b. Green roofs, c. Balconies or terraces furnished with plants, d. Terraces arranged with plants e. None;

51% of the respondents appreciate that terraces decorated with plants are the most attractive from a visual point of view (fig. 15). With a percentage of 18%, green facades ranked second in this question. Next are balconies decorated with plants (15%) and then green roofs (11%).

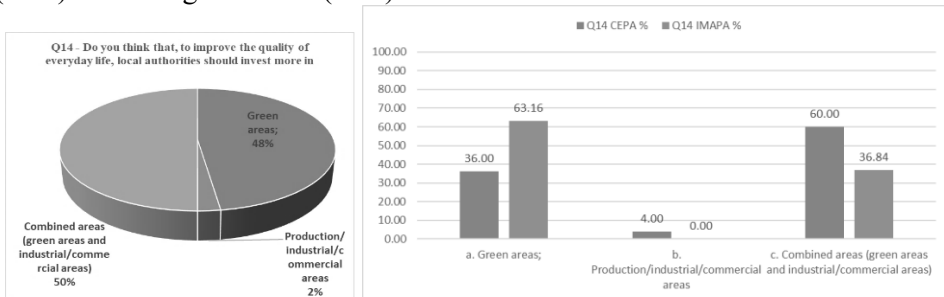


Fig. 16. Comparative results of CEPA versus IMAPA for question Q14. Do you think that, to improve the quality of everyday life, local authorities should invest more in: a. Green areas, b. Production/industrial/ commercial areas, c. Combined areas (green areas and industrial/ commercial areas);

The students participating in the questionnaire believe, in almost equal percentages, that green areas (48%) and combined areas (50%) are both good solutions that local authorities should consider in order to improve the quality of everyday life (fig. 16).

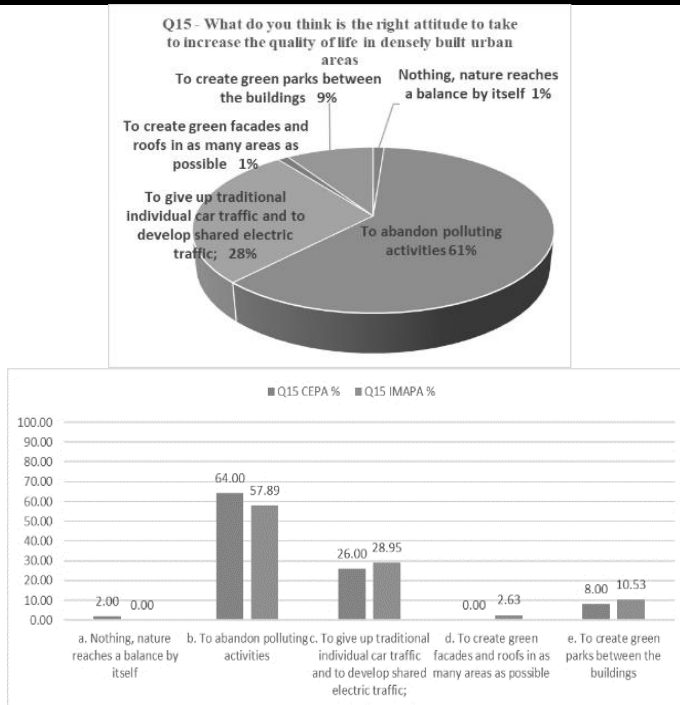
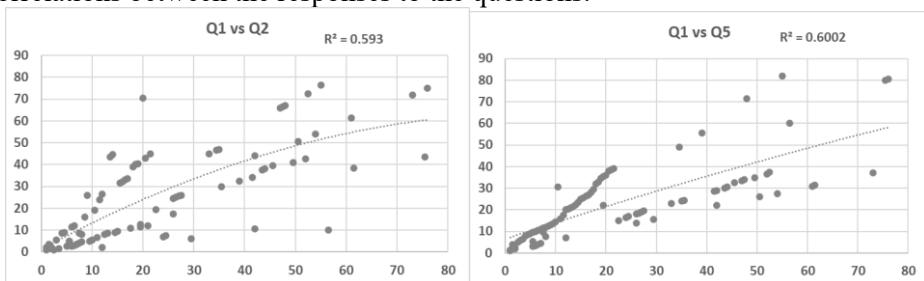


Fig. 17. Comparative results of CEPA versus IMAPA for question Q15. What do you think is the right attitude to take to increase the quality of life in densely built urban areas: a. Nothing, nature reaches a balance by itself, b. To abandon polluting activities, c. To give up traditional individual car traffic and to develop shared electric traffic; d. To create green facades and roofs in as many areas as possible, e. To create green parks between the buildings

For question Q15, a significant percentage (61%) believes that abandoning polluting activities is a correct attitude that must be approached to increase urban comfort and quality of life. Also, 28% of the students believe that it would be useful, in this sense, to find a less polluting alternative to the current car traffic (fig. 17).

The Spearman's correlation was used to determine whether there were correlations between the responses to the questions.



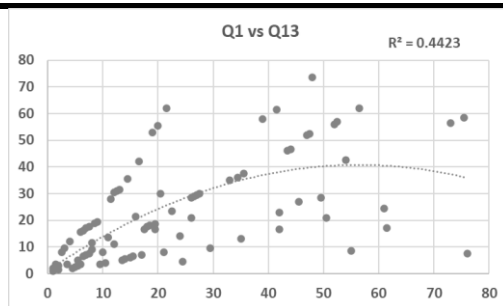


Fig. 18. Correlations between the answers to questions Q1 and Q2, Q1 and Q5, and Q1 and Q13

The answers to question Q1 are correlated with the answers to questions Q2, Q5 and Q13 (p-value < 0.05, 0.002669, 0.01633, 0.02973). This proves that if the student comes from the rural environment, he chooses to live in the same environment after graduation and is tempted to use plants in the home design more than those who come from the urban environment (fig. 18).

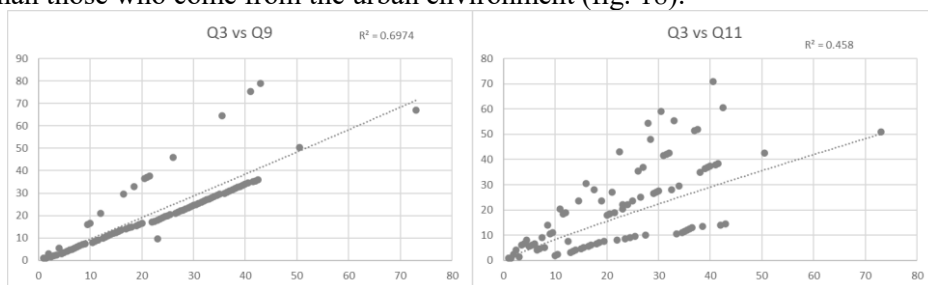


Fig. 19. Correlations between the answers to questions Q3 and Q9, and Q3 and Q11

The answers to question Q3 are correlated with the answers to questions Q4, Q5, Q9, Q11 and Q12 (p-value < 0.05, 0.0179, 0.00000253, 0.0038, 0.01418, 0.0025). This proves that if the student chooses to live in a house with land arranged as a green area, then he will also choose plants for arranging the home and will appreciate wild nature (69.74%) but also green facades (45.8%) (fig. 19).

CONCLUSIONS

1. Following the analysis of the obtained results, it is observed that the students prefer, in proportion to 81%, to live and/or work as close to nature as possible. The presence of parks near home or workplace is highly appreciated by 57% of the respondents and only 3% consider this a little important.

2. 51% of those who answered the questionnaire appreciate that the terraces decorated with plants are the most attractive from a visual point of view. There is also an increase in interest among students towards new methods of expanding green spaces, considering green facades (18%), balconies decorated with plants (15%) and green roofs (11%) attractive.

3. Valorizing the existing green spaces and enriching them with other spaces that bring relaxation and a better life to the inhabitants must always be taken into account by the authorities when analyzing locality development plans.

REFERENCES

1. **Chiruță C., 2019**, *Elemente de Matematică – Programare liniară și statistică matematică*, Ed. „Ion Ionescu de la Brad”, ISBN – 978-973-147-308-6.
2. **Dascălu Doina Mira, Cojocariu Mirela, 2016**, *Design peisagistic*, Ed. “Ion Ionescu de la Brad” Iasi, ISBN 978-973-147-223.
3. **David Levine, David Stephan, 2014**, *Even You Can Learn Statistics and Analytics: An Easy-to-Understand Guide to Statistics and Analytics 3rd Edition*, Pearson FT Press,
4. **Francis A.R., Lorimer J., 2011**, *Urban reconciliation ecology: The potential of living roofs and walls*, Journal of Environmental Management volume 92, Issue 6, 2011, pages 1429-1437.
5. **Olavo Avalone Neto, Saori Kihara, Jun Munakata. 2021**, *The Perception of Green Facades and its Effects on Public Spaces’ Users*, Estudos Em Design, Vol. 29.