

THE IMPORTANCE OF URBAN FARMING IN THE CONTEXT OF GLOBAL SUSTAINABLE DEVELOPMENT

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Abstract: Sustainability has recently emerged as an important step at national and international level. More and more companies are addressing the principles of sustainability and setting global goals to achieve. The pandemic period accentuated the implications of organizations in the social dimension. These implications targeted employees, quality of life and society. Work from home or telework have contributed to the development of new employee behaviors. The return of employees within the organizations will no longer be done under the same conditions. An important aspect of sustainability, accentuated in the pandemic period, is urban farming. This approach can be approached at individual or organizational level. This paper aims to present the preliminary results obtained for the period June 2020 - September 2021 in Romania and Malaysia. Malaysia has well-defined behaviors for urban farming, while in Romania this concept is an incipient one. Increasing the involvement of individuals or employees in urban agriculture develops substantial benefits, among which we mention: increased motivation, improved health, and improved sports.

Keywords: urban farming, urban agriculture, sustainability, social dimension, teleworking, teleworker, pandemic period.

1 INTRODUCTION

Sustainability is a global approach that has developed a lot lately. If initially companies were only involved in the environmental dimension without registering many benefits, now sustainable development has become a priority for many organizations. Local authorities are increasingly emphasizing the importance of urban mobility, the use of public transport, the use of less polluting means of transport, involvement in supporting society, new ways to

reduce travel costs (for example car sharing is adopted in more and more companies large) and other activities. Companies have started to record benefits, and if these benefits are financial then shareholders are eager to approach new principles (Syed Ghulam et al., 2019).

In the last 10 years, the actions of companies have intensified in approaching the other three dimensions: social, economic, and environmental (Ivascu, 2020; Sarfraz et al., 2020a). Currently, over 80% of organizations report their sustainability annually or biannually

(Ivaşcu, 2020). This reporting is voluntary, and the most widely used form of reporting is Global Initiative Reporting (GRI) (United Nation, 2019).

Evaluating population growth globally, we can see an increase until September 2021. In September 2021, the population reaches 7.9 billion, and by 2050 expects an increase of up to 9.7 billion. This means an increase in the needs of these individuals, market demand and urbanization. Currently about 1/3 of food is thrown away, which means a waste of resources. Assessing the consequences of these increases, there is an increase in greenhouse gas emissions, the amount of waste and a decrease in quality of life (Greibitus et al., 2020).

Urban farming (UF) is an approach derived from sustainability that urges individuals to get involved in cultivation. Urban farming is a solution that can be applied individually or organizationally (Harada et al., 2020; Hume et al., 2021).

This paper examines the factors that need to be addressed to increase *food safety, well-being, and health at work*. A qualitative method for the undertaken research is approached, being the first step of the undertaken research. The aim of this research is to emphasize the importance of the UF approach in organizational and individual behavior. The paper also offers an image of the adoption potential of UF in Romania. UF is expected in cities where pollution is high and where there is space for activities.

The novelty of this paper is that in Romania there is no research interpreted to identify the factors that contribute to UF, based on the behavior of a nation that has been practicing UF for many years. Initially, the research was initiated in Malaysia (January - June 2020), and in the second stage it was applied in Romania.

This paper presents the importance of adopting UF and presents the main answers obtained from market research. The market research took place between June 2020 and September 2021. The last section is occupied by conclusions and future research directions.

2 URBAN FARMING

The factors that contribute to the adoption of urban farming have positive and negative outcomes. These connotations affect mental and physical perception. This study highlights the factors that need to be addressed to increase food safety, well-being, and health at work. The following are the key elements identified in the research.

Positive outcomes are numerous among which we mention and emphasize the following dimensions (Yusoff et al., 2017; Grebitus et al., 2020; Kullu et al., 2020; Sarfraz et al., 2020b; Ivaşcu, 2020):

- *Health* - studies have shown that UF contributes to the improvement of health through the products that can be obtained and through the contributions of agriculture to the improvement of air quality.
- *Self sufficiency* - Individuals involved in UF help have a self-sufficient future while promoting vegetable consumption.
- *Food security* - the products obtained are healthy and develop a certain pleasure in the consumption process.
- *Self-awareness* - being an activity and recreational it contributes to the improvement of the physical condition, of the quality of the consumed products, of the disconnection from the workplace activities and thus it will increase the self-awareness of the importance of UF.
- *Economic benefits* - are registered for the obtained products, of the increase of the performance at the workplace because of the accomplishment of a healthy activity, of the improvement of the air quality by the sustainable method (without additional costs for the improvement of the air quality).

- *Popularity* - these products can be marketed to people who support sustainable development and thus outline the sustainable behavior of the individual involved in UF.

Mental perception of this approach for importance at the individual level. An individual becomes involved in UF if he identifies several benefits (Md Ibharm and Salim, 2020). These benefits can be financial or non-financial. The more benefits there are, the greater the involvement of individuals (Rutt, 2020; Surya et al., 2020).

Physical perception refers to the physical health of individuals. UF activities involve a degree of physical involvement that contributes to the activity of disconnecting from the workplace (Li et al., 2020). Therefore, the degree of perception is directly proportional to the individual's involvement in the activities carried out to produce the desired products (Oh, 2020; Rutt, 2020).

Practical constrains (Kullu et al., 2020; Sarfraz et al., 2020b; Ivascu, 2020) are:

- *Space* - refers to physical space. It is an important aspect for urban farming activities because it requires considerable space.
- *Conditions* - refers to environmental and individual conditions. Environmental conditions refer to climate, temperature, soil, humidity, and others. The individual conditions refer to: level of individual health, free time for involvement, availability to carry out activities during the week and weekend and others.
- *Supply chain* - refers to the products useful for planting and gardening activity. But there are also aspects of co-marketing activities if the marketing of a part through the obtained products is also targeted.
- *Motivation* - the level may be higher initially and then decrease. The level of

motivation is directly proportional to the registered benefits.

3 INDIVIDUALS' PERCEPTION OF URBAN FARMING

The questionnaire was used for this market research. Random sampling was used. The questionnaire was applied online using Google Form <https://docs.google.com/forms/d/e/1FAIpQLSdCPSO-4QcZ9Uw8GL9bcKYLXLyLUnK5FNXYy6Af6tx8rzQCpg/viewform>.

The research was carried out for Romania between June 2020 and September 2021. The entire research is carried out together with Sunway Malaysia University. Initially, a questionnaire was applied in Malaysia between January 2020 and May 2020

There were 129 responses in Malaysia and 129 responses in Romania. This paper aims to present the current perception of UF in Romania.

3.1 Result

The results of our study are presented below. The first results obtained in this international approach are presented. The results are evaluated qualitatively to emphasize the importance of urban pharmacy for Romania in the context of global sustainability.

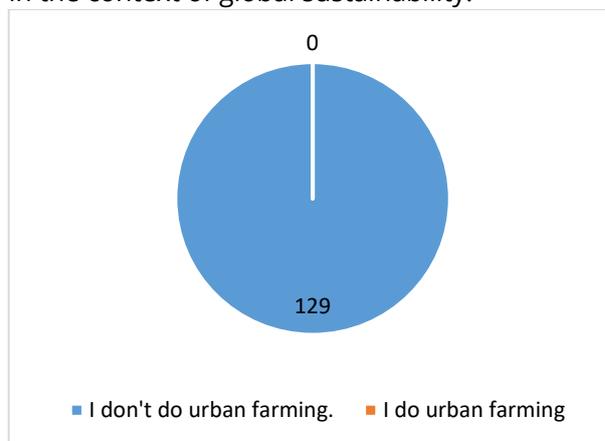


Figure 1. Practicing urban agriculture in Romania

Figure 1 shows the involvement of the interviewed individuals in UF. Until the time of the interview no participant was involved in UF. In Malaysia, over 65% were involved in these activities.

Figure 2 highlights that 50% of respondents have heard of UF.

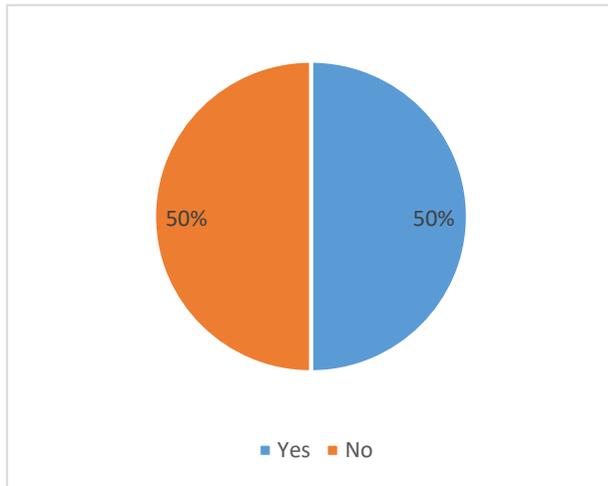


Figure 2. Have you heard of urban farming BEFORE taking this survey?

The next question was regarding „Urban farming is becoming more important as populations around the world increase. - What do you think of this sentence?“. This question received positive answers, most of the respondents appreciating that it is a very important and welcome activity. Other answer was „Yes, is true because, urban agriculture contributes to employment, improving health and education, as well as social inclusion, while having a positive impact on the environment. Therefore, in addition to providing fresh food for urban areas, urban agriculture generates important environmental, social and health benefits, as well as opportunities related to economic development.“

Figure 3 shows that only 21.40% of respondents have not heard of “Aquaponics”. Figure 4 highlights that 66.70% heard of

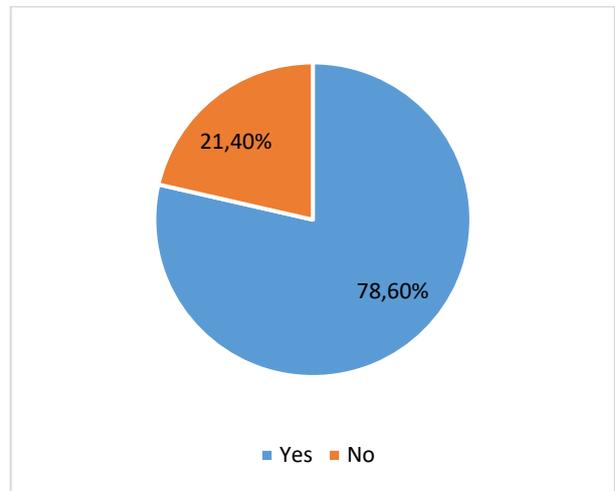


Figure 3. Have you heard of "Aquaponics" BEFORE taking this survey?

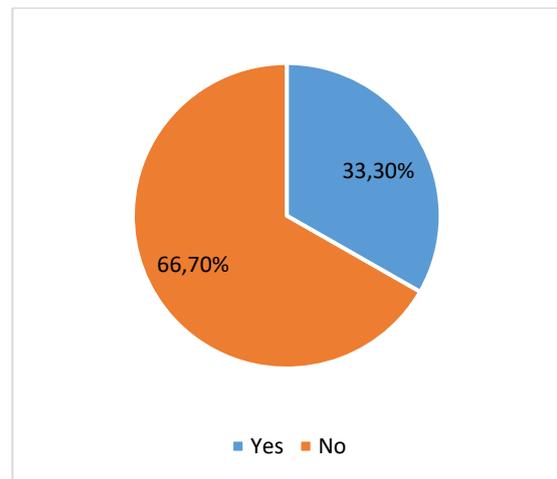


Figure 4. Have you heard of "Hydroponics" BEFORE taking this survey?

From the perspective of physical condition to achieve UF, 100 respondents rated as having an above average condition (1 - poor condition and 10 - very good condition). (Figure 5)

Figure 6 show that over 80 of the respondents are confident that they can get involved daily in urban farming activities. Full involvement was appreciated by only 6 respondents (with a rate of 10). Only 3 respondents showed a lack of involvement (with a rate of 1).

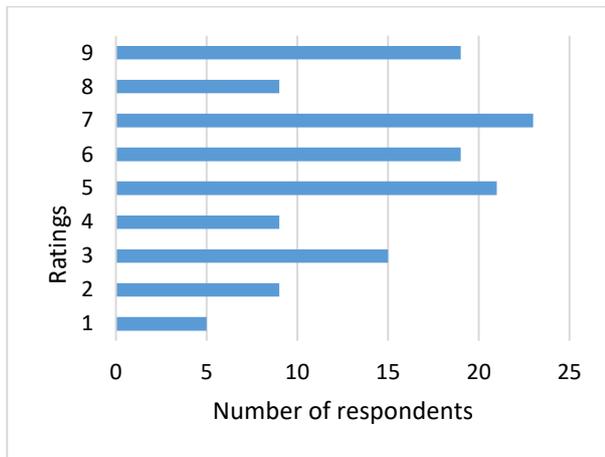


Figure 5. "Physically I am confident to do urban farming"

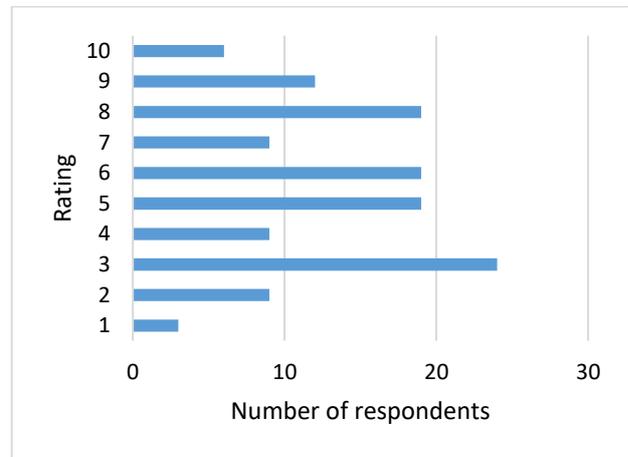


Figure 6. "I am confident I can commit to doing at least some urban farming everyday"

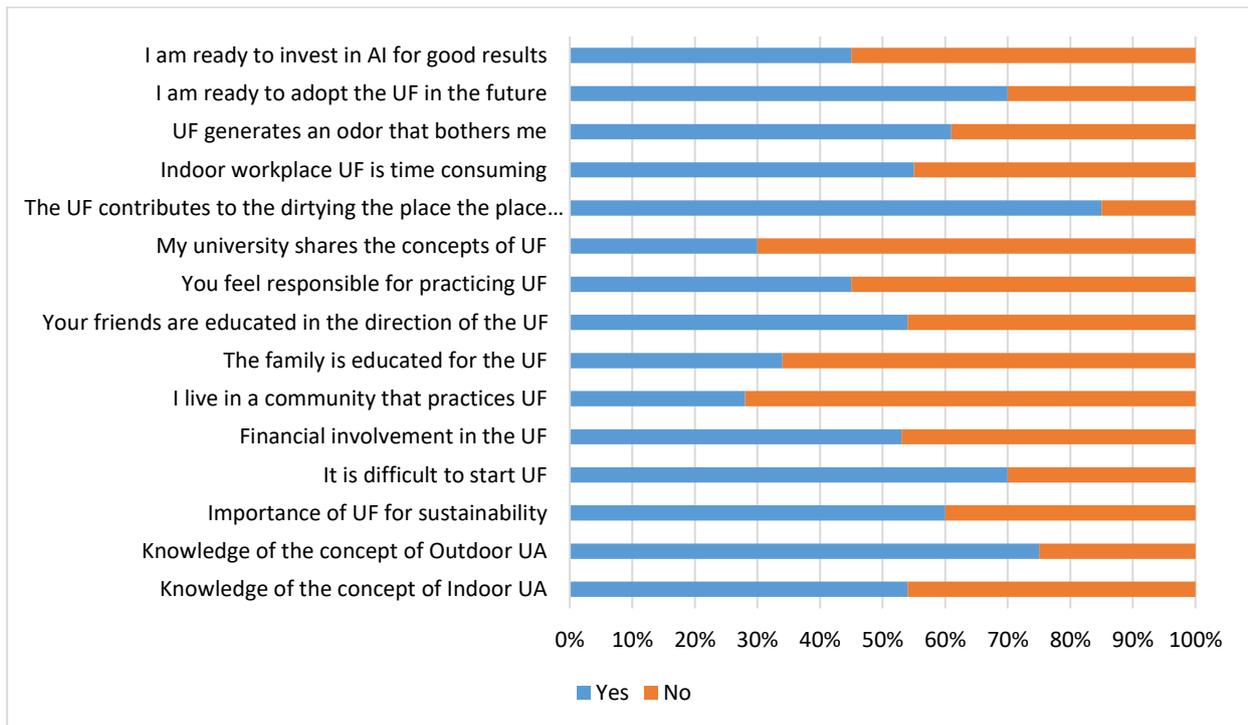


Figure 7. Directions of urban farming evaluated in market research (synthesis)

Figure 7 evaluates a series of UF dimensions. From an investment perspective, 45% of respondents are willing to start investing in UF. In the future, the respondents will adopt UF, registering a percentage of 75%.

UF involves a shade of dirt, and 75% of respondents highlights this deficiency. The same

figure points out that young people are open to UF, but the families of the respondents (mostly family members are between 30-70 years old) are not willing to learn about urban farming. Adoption is another dimension agreed by young respondents. Education is a dimension that must be addressed at the level of certain

segments of individuals. Only 28% of respondents live in communities that practice or have practiced urban farming. Only 30% of respondents appreciate that the university environment has transmitted knowledge about urban farming. Over 70% of respondents consider it difficult to start UF.

Results obtained from Malaysian respondent's underline that *"when confidence increases together with the pleasantness the idea of adoption is stronger, together with naturalness and societal the impact is significant"*. Space, conditions, and the supply chain are a challenge for these individuals. The motivation, knowledge, openness of family members and friends is much more intense. Over 70% of respondents live in communities that practice urban farming.

4 CONCLUSIONS AND DISCUSSION

The answers received were anticipated because in previous studies we observed the openness of people to sustainable development. Some interpretations of the answers received are:

1. the respondents were not involved in UF because in Romania this activity is an incipient one. The research carried out is limited and does not present an avatar of the individual, conditions, constraints, or other dimensions.
2. Over 50% of respondents heard this concept. Certainly, published articles and the implications of other countries are sources of inspiration for respondents.
3. The concept of UF is well received by respondents being evaluated positively, with great enthusiasm and sustained appreciation.
4. More than 80 respondents are confident that they can be involved in urban farming activities daily, which emphasizes that individuals want to

contribute to improving the quality of life, the consumption of fresh products and the protection of the environment.

5. A percentage of 45% of the respondents are willing to start investing in UF, which underlines the desire of Romanians to contribute to global sustainable development.
6. Knowledge about indoor or outdoor UF should be strengthened and thus contribute to increasing the level of motivation, self-awareness, and other dimensions.
7. Young people are willing to get involved in urban farming, but their parents do not have the same availability. From this perspective, steps should be taken to inform these segments of the population.
8. The university environment could strengthen the transmission of information about urban farming. This concept can be adopted at the space of the employing company or at home.
9. Starting urban farming activities involves a certain responsibility, time, and financial resources. These issues should be discussed with individuals open to such a concept.
10. Respondents in Malaysia emphasize higher education, less space and high pleasure in urban farming.

Based on the results discussed and presented above, a series of independent variables can be outlined that contribute to urban farming. In addition to the variables identified for the urban farmer's avatar, education can be added because there is a lack of information and a low level of knowledge. The factors that need to be addressed to increase food safety, well-being, and health at work are:

- confidence,
- societal,
- pleasantness,
- naturalness,

- adoption, and
- education (Romania).

This qualitative assessment is the first step in the research undertaken between the Politehnica University of Timisoara and Sunway College, Malaysia. The next step will include the use of G-power software for qualitative and quantitative modeling. This research is important through the subject approached and unique through the international approach.

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