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APPLICATION OF STRATEGIC ANALYSIS TOOLS FOR IDENTIFYING MACRO-ENVIRONMENTAL FACTORS: THE CASE OF A STARTUP COMPANY CONNECTING CONSUMERS AND PRODUCERS OF ORGANIC AGRICULTURAL PRODUCTS VIA A MOBILE APPLICATION

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Abstract: *Start-up companies are generators of economic development. Given that these companies are characterized by a high degree of risk at the beginning of their operations, it is very important to properly formulate development and positioning strategies. This paper uses strategic tools to analyze the internal and external factors affecting the operations of a start-up company. The analysis of internal and external factors was carried out on the case of a start-up company established with the aim of connecting consumers and producers of organic agricultural products through a mobile application. The significance of this paper lies in providing guidelines to the company's management for defining business development and market positioning strategies. The results of this research serve as an incentive for further studies related to start-up companies, both at the local and regional levels.*

Keywords: *start-up companies / macro-environmental factors / strategic analysis tools.*

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INTRODUCTION

The trend of healthy eating in the world has contributed to the growing development of organic agricultural production. It is estimated that by 2025 at least 5% of the area should be devoted to organic agriculture. When it comes to this trend, Serbia is not far behind the rest of the world. In recent years, consumers in Serbia have become increasingly concerned with what they eat, choosing healthy foods more frequently. Although the term "healthy food" is not clearly defined, the modern way of eating that we are used to cannot be considered as the healthiest. The results of research conducted by the National Association for Organic Production "Organica" show that in 2019, organic agricultural production in the Republic of Serbia took place on more than 21,000 square meters, which is 10.44% more than in 2018. This growth reflects the market needs of the entire nation. In response to this demand, a start-up company was founded with the aim of connecting consumers and producers of organic products through a simple mobile application.

However, start-up companies represent a generator of economic development. Start-up companies can respond to the rapidly changing needs and demands of consumers. They prefer ad-hoc development approaches, limiting administrative costs that can compromise business experimentation, depending on team members and resources (Berg et al., 2018). They have the ability to conquer new markets, using information and communication technologies and the approaches they use (Berg et al., 2018; Khan et al., 2023).

Bearing in mind that these companies are characterized by a high degree of risk at the beginning of business, it is very important to correctly formulate the strategy for their development and positioning. For this reason, the question arises of how to define the development and positioning strategy for a start-up company. To properly formulate this strategy, it is essential to accurately identify the macro-environmental factors that affect the company's operations. Scientific literature related to the development strategy and positioning of start-up companies in the Serbian market is very scarce. Namely, there are mostly works related to the financing of start-up companies (Brkanovic, 2005; Ćočkalo et al. 2013; Jovin, 2016; Panić, 2017; Stevanović et al. 2017; Živkovski & Đurđević, 2019; Vujanić et al. 2021; Spasenić et al., 2022; Trbovich et al., 2018)

unlike other scientific sources that include the analysis of a number of macro-environmental factors (Khan et al., 2023; Foris et al., 2022; Setiawan & Maarif, 2024; Singh et al., 2022; Kadocsa & Francsovcics, 2011).

The main goal of the work is to use the tools of strategic analysis to identify the internal and external business factors of start-up companies. The analysis of internal and external factors will be done on the case of a start-up company established with the aim of connecting consumers and producers of organic agricultural products through a mobile application. The identification of macro-environmental factors is important from the aspect of defining the development strategy and positioning of the start-up company.

LITERATURE REVIEW

Start-up companies are newly created companies that are struggling for existence. They arise as a result of innovative business ideas (Salamzadeh & Kawamorita Kesim, 2015). According to the legal regulations and laws of the Republic of Serbia, the term "start-up" includes all companies that are in the initial phase of development. Unlike the definition of a start-up in Serbia, in the European Union, the term start-up implies all projects or companies based on innovation and improvement of the existing technological solutions (Zahar Djordjevic et al., 2018). Bearing in mind that these companies represent a generator of economic development, they usually have financial support from state financial sources for the start of business. Otherwise, start-up companies are characterized by a high degree of risk at the beginning of business operations (Salamzadeh & Kawamorita Kesim, 2015). According to some estimates, even 90% of start-up companies fail to meet "their first birthday" (European Commission, 2018). Pride (2018) believes that as many as 92% of start-up companies fail in the first three years of operation due to "internal reasons, lack of a good business model, inefficient cash flows and a dynamic market" (Khan et al., 2023).

In addition to financial, human resources, support mechanisms, environmental challenges (Salamzadeh & Kawamorita Kesim, 2015), start-up companies have challenges related to product development and application of innovative methods (Berg et al., 2018). Likewise, political circumstances such as changes in legislation can accelerate or inhibit some business processes. Crises caused by wars or a health crisis, such as the crisis caused by the Covid 19 virus, can also have a negative impact. The

effects of the pandemic and the Russian-Ukrainian conflict have a significant impact on the economy and serious implications for the activity of especially newly founded companies. (Foris, et al, 2022). An additional challenge for start-up companies and their further development can be the use of information technologies, as well as investment in them. Digitization and the use of new technologies can help these companies achieve sustainability (Berg et al., 2018; Khan et al., 2023; Foris, et al, 2022).

The reasons for failure can be related to the absence of an adequate business strategy. The focus of a start-up company's strategy should be on its development, i.e. market expansion (Nurcahyo et al., 2018). For more than twenty years, researchers have examined the effects of formal strategic planning on the financial performance of small and medium-sized enterprises. The findings of researchers Schwenk & Shrader (1993). Indicate that there is a positive relationship between the effects of planning and performance, that is, that strategic planning is a useful activity for companies. In this regard, it is very important that start-up companies with relatively few resources choose business strategies that are based on competencies and efficient use of resources (Kim et al., 2021).

Strategic planning is the process of identifying goals, as well as activities and resources needed for achieving them. It implies the behavior of the organization on the market and the adaptation of resources to the chosen market strategy (Warszawski, 1996). Due to the inability of small and medium enterprises to overcome potential obstacles during planning, in most cases the implementation of strategic plans fails (O'Regan & Ghobadian, 2002). Strategic tools can serve for establishing development and positioning strategies. Otherwise, the term "tool" is a generic name for methods, frameworks, concepts or models (Jarzabkowski & Kaplan, 2015).

When defining an organization's strategy, many authors like Weicrih (1982), Al Ghmadi (2005), Evans& Wright (2009), suggest SWOT analysis as an analytical tool used to identify environmental factors. SWOT analysis consists of four components that identify internal and external factors. Strengths refer to internal elements of the organization that enable the achievement of goals, while weaknesses are internal elements that prevent success. Opportunities represent external factors that help the organization achieve its goals. Threats represent external

factors that are obstacles or potential obstacles on the way to the success of the organization (Benzaghta et al. 2021).

PEST analysis can also be applied to establish the organization's strategy which provides more information about external factors than a SWOT analysis.

In order to define the strategy, it is necessary to first analyze the current trends, looking at them through the strengths and weaknesses, opportunities and threats of business, taking into account political, economic, social and technological factors.

METHODOLOGY

In order to analyze the internal and external factors of the environment of the start-up company founded with the aim of connecting consumers and producers of organic agricultural products through a mobile application, the tools of strategic analysis SWOT, PEST, Internal Factor Evaluation (IFE) Matrix and External Factor Evaluation (EFE) Matrix were applied in the work.

SWOT analysis is recommended due to its simplicity and practicality of application. Authors Pickton & Wright (1998) believe that SWOT analysis should not only be used as an analytical tool, but also as a dynamic part of the process of strategic management and development of the company. SWOT analysis is a method of analysis used to assess "strengths", "weaknesses", "opportunities" and "threats" of an organization (Gurl, 2017). By the way, the empirical basis of SWOT analysis began as early as 1952. Robert Franklin Stewart in 1965 published the SOFT approach in which he presented a logical set of steps for setting corporate goals, so that in 1967 the SOFT approach evolved into a SWOT analysis. The SOFT approach was used so that all managers of a company participate in long-term organizational planning (Puyt et al., 2023). In addition to strategic management, SWOT analysis can also serve as an assessment tool in which the organization is compared with its competitors. Although this strategic tool is widely represented in strategic analyses, some critics believe that this tool is too superficial and formal, which can consequently affect performance, because the results can be misunderstood (Teoli et al., 2019).

Bearing in mind that the SWOT analysis considers factors inside and outside the entity (Teoli et al., 2019), which in our case is a start-up company

founded with the aim of connecting consumers and producers of organic agricultural products through a mobile application, as a supplement to the analysis of external factors, a PEST analysis was also applied in the work. PEST analysis identifies political, economic, social and technological factors that can affect the company's operations or project implementation (Leyva et al., 2018). This analysis was systematized by Francis J. Aguilar (1967) and is an acronym for macro environmental factors. This analysis gives a broader view of external factors than SWOT analysis, but it also focuses on the study of the business environment (Vasileva, 2018).

Based on the data obtained by interviewing three founders of the start-up company in July 2023, the strengths and weaknesses, opportunities and threats of the start-up company were identified. The selected start-up company founded with the aim of connecting producers and consumers of organic agricultural products through a mobile application for this study was founded in 2023 and represents a good example of a company that needed to develop a strategy for development and positioning in the market. Another reason for choosing this company is that development and application of new technologies becomes a challenge for entrepreneurs. Similar research for defining the strategy for a start-up company project was conducted by researchers Putra & Purnomo (2021) applying the Internal Factor Evaluation (IFE) Matrix, External Factor Evaluation (EFE) Matrix, and Quantitative Strategy Planning Matrix (QSPM). Descriptive research applying SWOT analysis for defining strategy was also conducted by researchers Safitri et al. (2023) on the example of two start-up companies.

The information obtained after interviewing the founders was summarized within the framework of SWOT and PEST analysis, evaluated and presented in the form of IFE and EFE matrix.

The Internal Factor Evaluation (IFE) and External Factor Evaluation (EFE) matrix were constructed based on the identified internal and external factors. The Internal Factor Evaluation (IFE) summarizes the main internal strengths and weaknesses of the organization, and the External Factor Evaluation (EFE) matrix represents the impact of the main opportunities and threats of the external environment (Capps & Glissmeyer, 2012).

ANALYSIS OF THE RESULTS

With the help of strategic analysis tools, the macro-environmental factors that influence the business of a start-up company established with the aim of connecting producers and consumers of organic agricultural products through a mobile application were identified. By interviewing the founders of a start-up company, strengths and weaknesses, opportunities and threats of business are analyzed, taking into account political, economic, sociocultural and social and technological factors (Table 1 and Table 2).

Table 1. *SWOT matrix*

Strengths	Weaknesses
<ul style="list-style-type: none"> - Competencies of employees <ul style="list-style-type: none"> - Level of service quality - All information from the application is in real time - Simplicity of application - Fast and efficient connection of producers and consumers <ul style="list-style-type: none"> - Free application - Implementation of new applications and software in business - Using your own brand - Creating a positive image of the company - New approaches to marketing campaigns 	<ul style="list-style-type: none"> - The application is only in Serbian <ul style="list-style-type: none"> - A question of security - Data loading speed - Disconnection of the application from other sources - Inability to use the application in offline mode <ul style="list-style-type: none"> - Low profitability - Costs of development and introduction of new technologies - Long investment return period - Insufficiently developed sales channels - Insufficiently developed producer base
Opportunities	Threats
<ul style="list-style-type: none"> - Increasing market capacity <ul style="list-style-type: none"> - The possibility of providing certified manufacturers - The possibility of establishing cooperation with SMEs engaged in the production and sale of organic products - Different types of user subscriptions - Creating a new network in the market <ul style="list-style-type: none"> - The possibility of expanding the application to the regional market 	<ul style="list-style-type: none"> - Reduced offer - Occurrence of cocurrence <ul style="list-style-type: none"> - Falling sales

Source: Adapted by Janovac & Virijević Jovanović, 2023

Table 2. *PEST matrix*

Economic factors	<ul style="list-style-type: none"> - Economic growth - Stability of the national currency - Increased investment - Program to encourage entrepreneurship and SMEs 	<ul style="list-style-type: none"> - Recession in the economy - Negative exchange rate changes - GDP decline
Political factors	<ul style="list-style-type: none"> - Making positive changes in the legal regulations 	<ul style="list-style-type: none"> - Health crisis - The Kosovo crisis - The crisis caused by the Russian-Ukrainian war
Social factors	<ul style="list-style-type: none"> - Changing demands, needs and expectations of service users - Finding new user categories - Increase in the number of employees - Increasing the number of producers 	<ul style="list-style-type: none"> - Population ageing - Declining living standards - Loss of a certain category of users - Loss of a certain category of producers - Changing requirements, needs and expectations of users
Technological factors	<ul style="list-style-type: none"> - Application of new applications and software in business - Extending the application to other platforms - The possibility of extending the application to other segments, such as on tourism 	<ul style="list-style-type: none"> - Increasing costs for information and communication technologies - Standardization costs - The possibility of imitating the application

Source: Authors' elaboration

The information obtained from interviewing the founder is summarized in SWOT and PEST matrices, then evaluated and presented using IFE and EFE matrices. The identified factors are assigned weights. The weight of each factor is multiplied by its rating to obtain a weighted score based on a metric rating scale of 1-4 (David, 2011, p.122). According to David (2011), the sum of all weighted results represents the total weighted result. A score of 2.5 represents how the average company in the industry deals with its internal environment (Capps & Glissmeyer, 2012).

In the IFE matrix, the most significant internal factors (Strengths and Weaknesses) in the organization's business are analyzed.

Table 3. *IFE matrix*

<i>Key Internal Factors</i>	<i>Weight</i>	<i>Rating</i>	<i>Weighted Score</i>
<i>Strengths</i>			
Level of service quality	0.01	3	0.03
Satisfactory level of knowledge and skills of employees	0.09	3	0.27
Application of new applications and software in business	0.1	4	0.4
Fast and efficient connection of producers and consumers	0.2	4	0.8
New approaches to marketing campaigns	0.1	4	0.4
<i>Weaknesses</i>			
Low profitability	0.1	1	0.1
Costs introduction of new technologies	0.03	2	0.06
A long period of return on new investments	0.04	2	0.08
Insufficiently developed sales channels	0.15	1	0.15
Insufficient manufacturer base	0.18	1	0.18
Total	1	-	2.32

Source: Authors' calculations

According to the results shown in Table 3., the most important internal factor when it comes to *Strengths* is the fast and efficient connection of producers and consumers (0.8), while the factor with the highest weighted score and belongs to the category of *Weaknesses* refers to Insufficient producer base (0.18).

The EFE matrix analyses the key external factors which influence the business of a start-up company. The main external factors are weighted and rated, in order to get a total weighted score which is also called on a

metric rating scale of 1-4. The sum of all weighted scores represents the total weighted score. A score of 2.5 represents how the average company in the industry deals with its external environment (Capps & Glissmeyer, 2012).

Table 4. *EFE matrix*

<i>Key External Factors</i>	<i>Weight</i>	<i>Rating</i>	<i>Weighted Score</i>
<i>Opportunities</i>			
Program to encourage entrepreneurship and SMEs	0.18	4	0.72
Increasing market capacity	0.2	4	0.8
Economic growth	0.02	2	0.04
The possibility of providing certified manufacturers	0.04	3	0.12
Increasing the number of producers	0.06	3	0.18
<i>Threats</i>			
Recession in the economy	0.05	2	0.1
Unstable political situation caused by crises	0.03	1	0.03
Falling living standards	0.14	4	0.56
Increasing costs for information and communication technologies	0.1	3	0.3
Loss of a certain category of users	0.18	4	0.72
<i>Total</i>	1		3.57

Source: Authors' calculations

According to the results shown in Table 4., the most important external factor when it comes to *Opportunities* is the Increase in market capacity (0.8), while the biggest *Threats* factor refers to the Loss of a certain category of users (0.72).

The total weighted score (Table 3) gives an average result of 2.32, evidence of a weak internal position, because a value below 2.5 indicates a weak internal position.

The total score of 3.57 (Table 4) is an average score for external evaluation, which indicates a relatively good result for a start-up company. It should also be noted that work should be done in order to eliminate threats such as the loss of a certain category of users.

Researchers Brooks et al. (2014) came to similar findings when they applied SWOT analysis when it comes to increasing competitive knowledge and positioning of a start-up company using social media.

The results of research conducted in the Republic of Romania in 2022 indicate that the health crisis caused by the COVID-19 virus, as well as the Russian-Ukrainian conflict as a political factor, have had negative implications for start-up businesses. These implications include the loss of certain categories of users, difficulties in supply chains, and uncertainties about government aid packages for entrepreneurs. (Foris, et al, 2022).

CONCLUSION

In the paper, the macro-environmental factors that affect the business of a start-up company are identified using the tool of strategic analysis. Based on the research results, it can be concluded that the mobile application facilitates quick and effective connections between producers and consumers of organic products (0.8). Additionally, by increasing market capacity (0.8), the start-up company can achieve sustainable business success. However, the lack of a sufficient number of producers (0.18) can be a big problem and create an imbalance between supply and demand and lead to the loss of a certain category of users (0.72), as indicated by the results of this research. Likewise, many political factors such as the health crisis, as well as crises caused by wars, can have negative effects on business start-ups. The program to encourage the development of entrepreneurship for beginners and young people in 2023, implemented by the Ministry of Economy, can be a significant financial support for start-up companies, investment in fixed assets, information and communication technologies and operational costs. Similarly, economic growth, the ability to secure certified producers, and

the increase in the number of organic product producers enhance the likelihood of success for a start-up company.

This paper focuses on a recently founded start-up company, and the available data for analysis was limited, which is a constraint of this study. The findings of this study are not confined to the Republic of Serbia but are relevant to the broader region and to start-up companies in various industries, particularly concerning the application of strategic analysis tools for identifying macro-environmental factors. Future research will delve into selecting a start-up company's development strategy during crises using the PIPRECIA method.

The significance of this work lies in providing guidance to the company's management to define strategies for business development and market positioning. The results of this research serve as a catalyst for further studies related to start-up companies at both local and regional levels.

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PRIMENA ALATA STRATEŠKE ANALIZE U CILJU IDENTIFIKACIJE FAKTORA MAKROOKRUŽENJA: SLUČAJ START-UP KOMPANIJE ZA POVEZIVANJE POTROŠAČA I PROIZVOĐAČA ORGANSKIH POLJOPRIVREDNIH PROIZVODA PREKO MOBILNE APLIKACIJE

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***Sažetak:** Start-up kompanije predstavljaju generator razvoja privrede. Imajući u vidu da ove kompanije karakteriše visok stepen rizika u početku poslovanja, veoma je važno pravilno formulisati strategiju razvoja i pozicioniranja. U radu se pomoću strateških alata analiziraju interni i eksterni faktori koji utiču na poslovanje start-up kompanije. Analiza internih i*

eksternih faktora urađena je na slučaju start-up kompanije osnovane sa ciljem povezivanja potrošača i proizvođača organskih poljoprivrednih proizvoda preko mobilne aplikacije. Značaj ovog rada ogleda se sa aspekta davanja smernica menadžmentu kompanije u cilju definisanja strategije poslovnog razvoja i pozicioniranja na tržištu. Rezultati ovog istraživanja predstavljaju podsticaj za dalja istraživanja vezanih za start-up kompanije kako na lokalnom, tako i na regionalnom nivou.

Ključne reči: *start-up kompanije / faktori makrookruženja / alati strateške analize.*

