

PESTEL Analysis of External Environment as a Success Factor of Startup Business

Ivana Marinovic Matovic

Addiko Bank AD, Belgrade, Serbia, ivana.m.matovic@gmail.com

ABSTRACT: The objective of this paper is to present the purpose of PESTEL analysis as a critical factor for startup success. It proposes the use of PESTEL analysis as a tool to evaluate the business environment for startup organizations, with emphasis on the most common challenges faced by startups in conducting a PESTEL assessment. The main goal of the paper is to provide an overview of the situation, identify areas of importance for improvement, and define guidelines for startup business, with the aim of increasing competitiveness. Contribution of the paper is theoretical and empirical, in the specific context of PESTEL analysis for startup business.

KEYWORDS: PESTEL analysis, business environment, start-up, organisation, entrepreneurship

Introduction

PESTEL provides a framework for a comprehensive analysis of the environment in which organization operates, and for creating possible business strategies. PESTEL analysis is used for strategic planning, marketing planning, new product/service development and research (Vasileva, 2018). Thus, PESTEL analysis deals with the environment through the analysis of political, economic, social, technological, ecological and legal/legislative factors (Kolios & Read, 2013). It is necessary to clearly define the goal of PESTEL analysis and to define all aspects of external environment that are the subject of analysis. Environmental factors should be analyzed from the aspect of business organization as a whole, from the aspect of products/services offered, taking into account organizational strategy. The subject of PESTEL analysis should be clearly defined from the aspect of local market of organization, from the aspect of entry strategy at a new market, or launching a new product. PESTEL analysis is also important for a potential takeover, a potential partnership, or a potential investment opportunity.

PESTEL analysis is of special importance when establishing a new startup organization, for starting a business, when more markets are analyzed and their potential compared. The starting point should be an assumption that startup is a young organization, that develops either an existing or a completely new, never-before-seen product (often based on the latest technologies), and where success is very uncertain.

The aim of the paper is to point out the importance of PESTEL model for external environment analysis, for a startup business in Republic of Serbia. The paper also analyses the most common challenges that startup organizations face, in the process of opportunities and threats analysis, rising from political, economic, social, technological, ecological and legal environment.

Literature review

PESTEL analysis is assessed as a prerequisite/mandatory method that allows identifying factors relevant to the business environment and provides data and information that allow organizations within the analyzed environment to predict the situation in order to adapt to new situation and develop competitiveness (Walsh 2005).

PESTEL is an acronym for English words that describe external factors analyzed through this analysis: political, economic, social, technological, ecological and legal factors

(Rastogi & Trivedi, 2016; Maksimovic et al., 2019). PESTEL analysis is one of the most important and unavoidable tools for assessing external impacts that every organization must apply, in order to analyze the situation and define guidelines and directions for improving and developing a development strategy (Shtal et al., 2018). This method is most suitable for application to the overall business environment, and not to each individual organization of a business environment, because the factors that appear in this approach are conceived in this way (Mack & Putzschel, 2014). In PESTEL analysis, the evaluation of factors is performed individually, without evaluation of their interaction (Yuksel, 2012), so it is appropriate to apply PESTEL method in combination with some other methods from the domain of engineering or IT methods and tools (Tsangas et al., 2019).

PESTEL analysis is a tool used for analysis and monitoring of external environmental factors with an impact on the organization (Christodoulou & Cullinane 2019). PESTEL analysis enables identifying business opportunities and threats and adapting to market changes in a timely manner. Indirectly, the results of PESTEL analysis indicate opportunities and threats, that are later addressed in SWOT analysis, as one of the basic tools for defining organizational strategy. The key dimensions of the environment that are analyzed are (Kolios & Read, 2013):

Political factors - When considering this aspect, priority should be given to answering questions related to the stability of the political situation in the market. After that, the impact of local laws and regulations on business, then business ethics, taxes, fees, customs and other state contributions that differ from state to state are considered. Besides, the labor law and its functionality, market barriers, health issues, and tax policy should be considered in this domain.

Economic factors - From the economic point of view, the impact on business should be observed through the way of financing offered by banks, interest rates in individual countries, exchange rate, quality costs, inflation rate, price and quality of labor and energy. The overall road infrastructure has a significant impact in this domain, such as the existence and proximity of highways, proximity and functionality of ports, airport and railway infrastructure and the like. Income factors per capita are most often considered as economic factors, although in some cases it is also considered as a part of social factors.

Social factors - This set of factors has a very significant impact on the overall assessment. It is first necessary to give answers to the influence of the most basic social factors, such as: demographic structure, religious influence, national culture, level of education, structure of education, and the like. In addition, these factors include the protection and safety at work, life insurance, pension insurance and others.

Technological factors - In today's business conditions, characterized by the intensive use and availability of IT tools, this area is of particular importance. Technological factors cannot be observed only at the level of availability of various technologies, but also in terms of the existence of infrastructure for the necessary support of modern systems. Through this area, most often considered are the following: level of technology development, innovation, amortization, level of equipment flexibility, automation level, technological motivation, rate of technological changes, technological development strategies, existence and functionality of technology parks, and the like.

Ecological factors - When considering ecological factors, the most important are: the quality of human attitudes towards natural resources; biodiversity; recycling of raw materials; control and minimization of air, soil and water pollution. Sustainable business relations with others (fair trade), as fair treatment of suppliers, employees, etc.

Legal factors – The most often considered legal factors are: laws, regulatory agencies, requirements, regulations, standards, labor regulation, capital flow (foreign investment).

The most common challenges of PESTEL analysis in startup organizations

As with economic factors, startup organizations have a challenge when analysing the social factors within PESTEL. Insufficient depth of analysis leads to insufficiently good strategic decisions, and missed business opportunities. Specific omissions relate to superficially analyzed social trends, shopping priorities, demographic analysis (population, population trends, gender structure in the market in which it operates), which results in difficult sales planning in long-term business projections.

PESTEL analysis is one of the key elements in designing future business. Below we will present some quality PESTEL analysis of environmental factors. Presented PESTEL analyzes were made by startup organizations, as part of their business plans, in the process of preparing feasibility studies for participation in the Entrepreneurship and Self-Employment Promotion Program¹.

Startup organization „A“ is engaged in the production of high quality cold-pressed oil from organically grown raw materials. The production range includes cold-pressed oils from sunflower, corn, flax, pumpkin seeds and other oilseed plants, with the addition of herbs (peppers, mushrooms, garlic, tomatoes, basil, hot peppers and others). The product is intended for consumers who have a sophisticated taste, who, in addition to the product quality, require enjoying in visual terms, so it has exclusive packaging. The product is intended for use in hotels and restaurants by incorporating a plastic dispenser under the bottle cap, which prevents excessive oil spills and allows applying the oil to all serving types. In addition to the cold-pressed oil, the secondary product is oil cake, as a residue of the oil production process. The oil cake is an excellent source of protein in animal feed and is used as a protein component in the production or preparation of animal feed.

Table 1: An example of PESTEL analysis - Startup organization „A“

External environmental factors	Factor	Chance	Threat
(P) Political	Food production regulations		YES - Introducing stricter food production regulations that would require technology change
(E) Economic	Competition		YES – Competition, developed, strong and numerous - the founder knows the competition method, sales channels, volumes, assortment and quality of similar competition products
	Local market	YES - Knowledge of the local market and existing customer relationships	
	Small shops	YES - Special conditions for small specialized shops and tourist activities	
	Market	YES – The market potential is 30.000 households locally, of which the estimated share is 0.5% (based on knowledge of consumer needs from the conducted surveys)	
	Livestock farms	YES – Oil cake sales directly to livestock farms (50 farms in the surrounding area) YES - Traditional shops, HORECA	

¹ Entrepreneurship and Self-Employment Promotion Program is implemented by Public Investment Management Office, in cooperation with the Development Fund of the Republic of Serbia and with the expert support of KFW (<http://www.obnova.gov.rs/english>)

	Sales channels Location Availability of EU funds (IPARD) Plan: 4,200 l oil 8,300 kg oil cakes Revenue (1st year) 30,000 EUR Margin 62% Seasonality (large stocks of raw materials for annual production)	YES - Very convenient location in terms of raw material availability, good conditions for own primary production of raw materials YES - Possibility to apply for funds for development, capacity and quality improvement	
(S) Social	Tourism Unemployment Nutrition trends	YES - The proximity and potential of tourist facilities, the ability to sell oils as souvenirs, hotels and restaurants YES - Possibility of employment benefits, availability of workforce YES - Favorable trends in eating habits, Consumption of healthy, organic food, of vegetable origin, Possibility to participate in promotional campaigns, marketing, sales promotion	
(T) Technological	New revolutionary technology Raw material base developed	YES - Access to high quality raw materials	NO - Hypothetical threat, unlikely
(E) Ecological	New standards for equipment and waste disposal		YES - Introducing stricter standards that could increase production costs and require additional investments
(L) Legal	Without significant impact		

Source: Author, based on Entrepreneurship and Self-Employment Promotion Program

The main activity of startup organization „B“ is retail sale of personal care products and household chemicals. These products come from domestic manufacturers, primarily from LOMAX Subotica, which has its regional distribution center in Niš. Product range is the following: Personal care; Household chemicals, footwear care, insecticides; Exclusive cosmetic products. Future expansion would be based on exclusive cosmetic products from foreign manufacturers: Gucci, Bvlgari, Armani, Dolce Gabbana, Prada, Versace, and others.

Table 2: An example of PESTEL analysis - Startup organization „B“

External environmental factors	Factor	Chance	Threat
(P) Political	Political stability, strategic determination of the Government of the Republic of Serbia for the development of Niš region	YES	YES - Change in political structures, impact on tender, on public sector buyers
(E) Economic	Market - Niš 150,000 families x 32,5 € / month spending on “chemistry” = 58,500,000 / year; according to experience and acquaintance, monthly sales are planned for 400 families, which makes 0.26% of Niš market	YES - Lower prices than competitors	

	Lomax products and other chemistry Discount sales (Retail) More favorable than others (due to deferred payment and rebate from supplier)		
(S) Social	Favorable population structure due to increasing employment (the influx of foreigners Investment)	YES	
(T) Technological	On-line sales; WEB store	YES	
(E) Ecological	Technical, sanitary and hygienic conditions for the store are fulfilled	YES	
(L) Legal	Law on conditions for traffic of goods, performance of services, in goods traffic, and inspection	YES	

Source: Author, based on Entrepreneurship and Self-Employment Promotion Program

Startup organization „C“ operates in the field of tourism, travels organization in the country and abroad. It is located in Belgrade. The main activity is the organization of group and individual travel, summer and winter vacations, European tours, distant destinations, as well as the organization of student excursions and recreational classes, and summer language schools around the world. It cooperates with a large number of travel agencies, tour operators, so the offer is very diverse. It deals with airline ticket sales, hotel and hostel reservations worldwide through proven reservation systems. It plans to create short, content and affordable arrangements throughout the year, following the needs of clients and trends in world tourism (the most frequent trips of 3-5 days).

Table 3: An example of PESTEL analysis - Startup organization „C“

External environmental factors	Factor	Chance	Threat
(P) Political	Local government decisions New interstate agreements in air traffic		YES YES
(E) Economic	According to official data, there are 600,000 employees in Belgrade. Our target group is 150,000 clients who are „tourist active“. The plan is to occupy 0.3% of the market for the next 5 years, ie. to have 450-500 satisfied customers in our portfolio Competition - 276 agencies, 190 of which are licensed in Belgrade. The average market share per agency is 0.5%. Developing an online business with a key partners (for which we are qualified)	YES YES	YES
(S) Social	New trends in tourism - more short trips, anti-stress programs against managerial diseases, increasing tourist needs and increasing participation of tourists activities in GDP	YES	
(T) Technological	Digitization of business Software for searching the cheapest airline flights	YES YES	
(E) Ecological	Inadequate maintenance of national parks; underinvestment in ecology		YES
(L) Legal	Changes in tax regulations; Stricter consumer protection regulation Stricter membership requirements for tourism associations		YES YES

Source: Author, based on Entrepreneurship and Self-Employment Promotion Program

Conclusions

Startup organizations operate today in a dynamic and turbulent environment, the key focus is on understanding the state and changes in it. Within the external environment of the organization, numerous factors are key to the survival of startup businesses in the market.

There are many methods used in the analysis of the external environment, but the most widely accepted is PESTEL analysis, which relates the factors of the external environment, and analyzes current and future opportunities and threats that may arise from the factors of political, economic, social, technological, ecological and legal nature. Management must continually monitor macro environment of the organization, analyze threats and opportunities and adapt to the impacts of environmental factors. Management's response to environmental influences may be the choice of an appropriate strategy, most relevant to organization at that moment. Quality analysis of macro-environmental factors, performed using PESTEL model, leads to success in using business opportunities, while a number of threats will be overcome by finding business solutions that can counteract their negative impact.

This paper presents PESTEL analysis of the macro environment on the example of startup organizations in the Republic of Serbia. Based on the research results, it can be concluded that in the external environment of Serbian startup organizations, the opportunities are stronger than the threats, ie. that the external environment has an overall positive impact on the startup business. During the research, startup organizations in the Republic of Serbia recognized four groups of factors as strategic threats: political, economic, ecological and legal, while social and technological factors represent only opportunities for success and development in business. As political factors that pose a threat, startup organizations stated: Introducing stricter food production regulations that would require technology change; Change in political structures, impact on tender, on public sector buyers; Local government decisions; New interstate agreements in air traffic. Economic factors pose a standard threat, such as: Competition, developed, strong and numerous. As ecological factors that can negatively affect business, startup organizations listed: Introducing stricter standards that could increase production costs and require additional investments; Inadequate maintenance of national parks; Underinvestment in ecology. Among the legal factors that can jeopardize a startup organization, the most significant are: Changes in tax regulations; Stricter consumer protection regulation; Stricter membership requirements for tourism associations.

With well-designed strategic management, the owners of startup organizations in the Republic of Serbia should find ways to use the described opportunities to improve business performances. As research has found, there are a number of threats that should not be ignored. Threats from the external macro-environment need to be bridged by finding business solutions that can neutralize their negative impact.

References

- Christodoulou, A., Cullinane, K. 2019. "Identifying the Main Opportunities and Challenges from the Implementation of a Port Energy Management System: A SWOT/PESTLE Analysis." *Sustainability* 11(21): 1-15.
- Kolios, A., Read, G. 2013. "A Political, Economic, Social, Technology, Legal and Environmental (PESTLE) Approach for Risk Identification of the Tidal Industry in the United Kingdom." *Energies* 6(10): 5023-5045.
- Mack, J., Putzschel, J. 2014. *The Influence of Contextual Factors on the Entrepreneurial Process*, Umeå School of Business and Economics, Master Thesis.
- Maksimovic, M., Pivac, T., Ivkov-Dzigurski, A., Kosic, K. 2019. "About marketing strategy for wine route, Case study – Constantinople wine route,." *4th International Thematic Monograph - Modern Management Tools and Economy of Tourism Sector in Present Era*, Belgrade, 685-695.
- Pourmohammadi, K., Bastani, P., Shojaei, P. 2020. "A comprehensive environmental scanning and strategic analysis of Iranian Public Hospitals: a prospective approach." *BMC Res Notes*, 13, 179.
- Rastogi, N., Trivedi, M.K. 2016. "Pestle Technique – A Tool to Identify External Risks in Construction Projects,." *International Research Journal of Engineering and Technology* 3(1): 384-388.
- Shtal, T.V., Buriak, M.M., Amirbekuly, Y., Ukubassova, G.S., Kaskin, T.T., Toiboldinova, Z.G. 2018. "Methods of analysis of the external environment of business activities." *Revista Espacios* 39(12): 1-22.

- Tsangas, M., Jeguirim, M., Limousy, L., Zorpas, A. 2019. "The Application of Analytical Hierarchy Process in Combination with PESTEL-SWOT Analysis to Assess the Hydrocarbons Sector in Cyprus." *Energies* 12(5): 1-17.
- Vasileva, E. 2018. "Application of the Pest Analysis for Strategic Planning of Regional Development." *49th International Scientific Conference Quantitative and Qualitative Analysis in Economics*, Economic Faculty in Nis, 223-229.
- Walsh, P. 2005. "Dealing with the uncertainties of environmental change by adding scenario planning to the strategy reformulation equation,." *Management Decision* 43(1): 113-122.
- Yuksel, I. 2012. "Developing a Multi-Criteria Decision Making Model for PESTEL Analysis." *International Journal of Business and Management* 7(24): 52-66.