CHALLENGES OF ENTREPRENEURSHIP DEVELOPMENT IN EUROPE IN THE LIGHT OF THE PANDEMIC CRISIS

Rita REMEIKIENĖ [1*], Ligita GASPARĖNIENĖ [1] Aleksandra FEDAJEV [2],
Sanela ARSIĆ [2], Gracjana NOGA [3]

[1]Law Faculty, Vilnius University, Vilnius, Lithuania
[2]Engineering Management Department, Technical Faculty in Bor,
University of Belgrade, Bor, Serbia
[3]Department of Strategic Analysis, Cracow University of Economics, Cracow, Poland

Abstract. The paper aims to perform an objective comparative analysis of the business climate for entrepreneurship development in European countries in 2021 and group them according to the quality of the business climate. The research uses thirteen criteria from the Global Entrepreneurship Monitor report and TOPSIS methodology combined with entropy to perform a comparative analysis of the business climate for entrepreneurship development in selected European economies in 2021. Usage of TOPSIS and entropy method based on the last available data enabled objective and the most accurate evaluation and ranking of countries, taking into account all observed criteria. According to the study, the ranking of European economies indicates that the Netherlands has the most favorable business climate for entrepreneurship development, considering all observed criteria, while Belarus is ranked in the last position. According to relative closeness to the ideal solution (Ci^*), the four clusters of countries are derived. Besides the Netherlands, Lithuania, Norway, and Finland were also dedicated to the first cluster, indicating that these economies obtained the most favorable conditions for entrepreneurship development during the pandemic crisis. On the other hand, former command economies and Greece and Cyprus are placed in Cluster IV since they haven't supported entrepreneurs with sufficient and appropriate economic policy and regulatory reforms.

Keywords: entrepreneurship, business climate, European countries, COVID-19, TOPSIS.

JEL Classification: L26, I25, M21.

Introduction

The outbreak of the COVID-19 pandemic forced many businesses to close, leading to an unprecedented disruption of trade in many industrial sectors (Donthu & Gustafsson, 2020; Zahra, 2021). Retailers and brands face many short-term challenges related to health and

safety, supply chains, workforce issues, cash flow, consumer demand, sales, and marketing. Many markets are closed, especially tourism and hospitality (Koç, 2021; Mohammed, 2022). All organizational functions are currently dedicated to redefining priorities and optimizing costs or postponing tasks that will not generate any value-added in the current situation (Galindo-Martín et al., 2021). Some businesses, particularly start-ups, had to suspend people's employment indefinitely. At the same time, the areas of online communication, entertainment, and shopping have grown significantly.

The COVID-19 pandemic forced the commencement of legislative reforms to reflect the new circumstances. Organization for Economic Cooperation and Development (OECD) researchers revealed that adjustments to the legal framework for staffing and work organizing were necessary to ensure the continuous and effective operation of the relevant actors through regulation of remote work, the retention of part-time workers, and workers who were unable to be in the workplace for geographical or other reasons, more flexible concentration of human resources based on priorities, possibility to choose the most convenient work time, reduced need for office space and lowering business costs (OECD, 2020).

The uncertainty during this crisis opens new opportunities for entrepreneurs ready to take risks and implement innovative practices and new business models. Flexible entrepreneurs can capitalize on the new opportunities that appear in crises (Kelley & Wright, 2020; Ghazy et al., 2022). Therefore, the economic crisis generated by COVID-19 compelled policymakers to design measures to avoid the negative effects of the pandemic on employment and economic growth (Galindo-Martín et al., 2021; Belghitar et al., 2022). In the case of entrepreneurs, the legal aspects of remote work are important to obtain flexibility for employees to work remotely and ensure business continuity.

Researchers also have highlighted the problem of rapid and hasty legislative amendments in other important areas, like consumer protection. When examining consumer rights concerning the COVID-19 pandemic, some sources point out that many conventional consumer protection laws are inapplicable to the current situation (COVID-19 – Consumer Law Research Group, 2020). National governments and regulatory institutions face similar challenges but are experimenting with different methods to address them. The rapid adoption of new regulations often lacks a solid framework, impacting the business climate. Besides mentioned legal reforms, effective legislative and economic policy reforms are necessary for all segments of the business climate. The most important ones are finance, infrastructure, government support, the market, and the tax system. Also, reforms of the educational system and establishing appropriate social and cultural norms are crucial for boosting entrepreneurial activity, especially in crisis conditions. Obtaining favorable conditions for entrepreneurship development during the crisis is important not just to support existing start-ups but also to stimulate the establishment of new ones to amortize the increase of unemployment due to reduced business activity.

The scientific literature is not rich in studies addressing the legal and economic impact of the COVID-19 pandemic on business. Researchers point out that national governments and regulatory institutions face similar challenges. Therefore, the previous studies have mostly focused on business performance indicators (Donthu & Gustafsson, 2020; Iwuoha & Aniche, 2020; Bartik et al., 2020), legal regulation issues (Tommaso, 2020; Shinozaki & Rao, 2021),

or entrepreneurship factors of growth (Tofan et al., 2016; Aghion, 2017; Petrakis et al., 2020; Galindo-Martín et al., 2021). The novelty of this research is its interdisciplinarity; that is, investigating the economic and legal impact of the COVID-19 pandemic on business and including business companies from different countries and cultures to conduct a comparative cross-country analysis. This research focuses on entrepreneurial finance, education, infrastructure, culture, social norms, and governmental policies as the factors affecting business start-ups.

The main purpose of this study is to conduct an objective comparative analysis of the business climate for entrepreneurship development in 25 European economies in 2021 using the GEM database and the TOPSIS method combined with the entropy method. There are also three specific objectives: 1) to provide a theoretical analysis of the impact of the COVID-19 pandemic on SMEs, 2) to rank European economies according to business climate for entrepreneurship development, and 3) to classify considered countries with a similar level of business climate quality.

The paper is structured as follows. Section 1 presents the study's theoretical background, while Section 2 presents the impact of the pandemic on entrepreneurship development. Section 3 presents the methodological framework: research design, sample, and methodology. Section 4 contains the presentation and discussion of the obtained results, while the last Section concludes the research.

1. Literature review

COVID-19 restrictions and social distancing policies have undeniably harmed SMEs' performance (Donthu & Gustafsson, 2020; Iwuoha & Aniche, 2020). Several researchers argue that the imposed measures negatively impacted newly established SMEs, resulting in job and livelihood losses for many people (Iwuoha & Aniche, 2020). According to Bartik et al. (2020), COVID-19 disruptions had various effects on companies: some remained open while others were closed; some were able to shift their operations to a remote mode, and others had to lay off employees or place them on unpaid leave.

The ability of SMEs to adapt and be flexible is a key feature in responding to a crisis and overcoming it. Companies' ability to respond to and cope with crises depends not only on business factors but also on where businesses come from, where they can get help, what resources they can access, and how their local and regional business ecosystem works. Thus, the resilience of SMEs to crises is greatly influenced by the strength of any local and regional economy as well as the current entrepreneurial ecosystem. A favorable environment for entrepreneurs is characterized by a strong family business model, rich infrastructure, availability of skilled resources, a strong financial community, and government incentives for people to start new businesses and develop their businesses. An entrepreneur's education can also affect the development of the business environment and corporate activities. The higher education of an entrepreneur means a broader understanding of the economic regularities in the market and a more accurate forecast of potential changes in the business environment (Gubik, 2021; Partlova, 2021).

Some authors deepened the relevant research area and revealed which changes in legislation were made too late and which SMEs (by operating industry) suffered and benefited the

most. For instance, some results indicate that SMEs operating in the education, construction, hospitality, food, and service industries (including tourism) suffered the most significant losses, while SMEs operating in the energy, information technology, and communication industries coped much better (Shinozaki & Rao, 2021). Therefore, the authors highlight the necessity of two policies: timely identification of the target groups and differentiation of the policy (legal regulation) measures based on business size (Shinozaki & Rao, 2021). Employment conditions, assistance in transferring business to the digital space, and proper adoption of legal regulations were among the most pressing regulatory challenges for SMEs when providing state aid to SMEs most dramatically affected by the pandemic to restore their financial condition (Mandviwalla & Flanagan, 2021). Aid measures are also proposed by considering a company's size and sector and assessing the extent to which the sector is affected (Shinozaki & Rao, 2021). These proposals first require amendments to formal legal acts that define SMEs' labor relationships, business models, and financial flows.

Nevertheless, EU researchers are concerned that the current regulation of labor relationships in the EU is still not sufficiently flexible and contains strict rules (Juergensen et al., 2020), which poses corresponding challenges for SMEs in Europe to adapt to the pandemic when organizing labor relationships. In addition, some authors have raised questions relevant not only to Europe but also to national legislation. These are the questions of how to regulate the payment of compensation and ensure the effective functioning of the social protection system concerning pandemic-caused redundancies (Ahsany et al., 2020; Pitoyo et al., 2021). They can negatively affect SMEs' financing because SMEs can incur additional, unforeseen financial costs in compensating employees in the event of redundancy, legal disputes, social security matters, etc.

On the other hand, some studies propose that business continuity problems and possible bankruptcy, which arose during the pandemic, allowed legislators to adopt pliant and flexible legal norms regulating business activities and structural changes. Tommaso (2020) found that Italian legal acts that were in line with EU legislation provided business companies with modern mechanisms that affected business organizing and management and thus allowed them to cope with the business crisis, prevent bankruptcy, and improve market functioning. All of this positively impacted SMEs negatively affected by the pandemic. The results revealed that the relevant legal regulations during the pandemic could contribute to preserving production capacities and employment and reduce the potential of using non-performing loans for business funding when such loans may adversely affect the bank's balance sheet. The researcher also noted that during the pandemic, the Italian government issued many regulations aimed at helping companies continue their businesses and prevent bankruptcy. In summary, the government should implement different economic and legal changes to support SME operations in new conditions resulting from the pandemic.

2. Impact of the COVID-19 pandemic on entrepreneurship

Entrepreneurs across European economies experienced different changes in their economic performances, resulting from the business environment in which they operated. First, the COVID pandemic discouraged and demotivated future entrepreneurs from starting a busi-

ness in such risky conditions. Due to temporary or permanent facility closures, entrepreneurs were forced to fire or send employees on unpaid leave. Even a small drop in employee numbers has resulted in lower productivity and significant business problems (Nicola et al., 2020). Staff members' mental stress during this extraordinary period resulted from various professional and personal pressures, negatively affecting their productivity (Ozili & Arun, 2023). Partial or complete closure of borders also hampered the movement of goods, causing a considerable interruption of goods circulation, particularly in countries with a high number of cases. Such disruption in logistic activities significantly affected entrepreneurs' turnover and liquidity due to the occurrence of critical cashflow issues.

In order to identify the impact of the COVID pandemic on entrepreneurship development, Figure 1 presents the change in some of the most important indicators of entrepreneurship development in 2020 compared to 2019 in selected European economies.
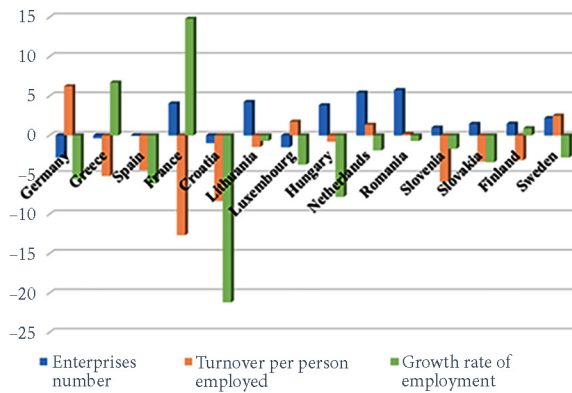

Figure 1. Changes in performances of microenterprises in selected
European economies in 2020 compared to 2019 (in %)

Data presented in Figure 1 suggests that the performances of microenterprises significantly differ across selected economies. Some of them, like Lithuania, Luxemburg, Poland, Slovakia, Finland, and Sweden, experienced a slight change in analyzed indicators (below 5%), indicating that entrepreneurs in these economies didn't feel pandemic disruptions to a large extent. On the other hand, countries like France and Croatia experienced substantial changes in entrepreneurs' performances. France's economy has undergone significant changes due to the pandemic crisis increasing the number of microenterprises and an even more pronounced rise in employment in this sector, but a significant decrease in turnover. Croatia, nevertheless, recorded a decrease in all three indicators, with the most pronounced drop in the employment rate. Such a situation mostly results from the unfavorable performances of tourism entrepreneurs since this sector has the highest share in GDP creation.

In the upcoming years, governments in European economies will increasingly need comprehensive and credible information to make key decisions that stimulate sustainable entrepreneurship and promote healthy ecosystems. Taking into account mixed exects of the pandemic crisis on entrepreneurship development, this paper aims to identify differences in the business climate for entrepreneurship development across European economies.

3. Research methodology

Multi-criteria decision-making methods (MCDM) are successfully used when many often conflicting criteria should be considered when making a decision. Multi-criteria methods have been developed as mathematical tools to support decision-makers. They are based on scientific principles that enable an effective and efficient method for determining the "optimal" solution. A wide range of application areas of multi-criteria decision-making models has caused rapid and continuous development of these methods in the area of entrepreneurship also (Zavadskas et al., 2019; Adebiyi et al., 2019; Arsić & Gajić, 2021; Magableh & Mistarihi, 2022). In this research, the Technique for Order Performance by Similarity to Ideal Solution (TOPSIS) method was applied to rank EU countries according to the quality of an economy's entrepreneurial ecosystem or environment. TOPSIS is a practical and useful technique for ranking and selecting several externally determined alternatives (EU countries) using distance measures. The entropy method was used to assess the criteria weights in the defined research model.

3.1. Shannon Entropy method

The objective approach of determining the weights of criteria considers the criteria as sources of information, and the relative importance of the criteria reflects the amount of information contained in each criterion. The amount of information contained in each criterion is related to the contrast intensity of each criterion (Cincotta et al., 2021). Entropy in information theory represents the criteria used to measure the degree of disorder characterized by a discrete probability distribution. The entropy method can quantitatively estimate the quantity of data and objectively calculate the relative weight of the information (Shannon, 1948). If the entropy values are lower, the numerator degrees are more proportional, implying as close to perfect entropy as possible. The entropy method aims to obtain each attribute's relative weight (Dwivedi & Sharma, 2022).

3.2. TOPSIS method

Hwang and Yoon (1981) originally suggested an order–performance technique based on similarity to the ideal solution (TOPSIS). According to this method, the chosen alternative should have the shortest distance from the positive ideal reference point and the longest distance from the negative ideal reference point to solve MCDM problems (Chakraborty, 2022). Many researchers have contributed to this method's development and proposed numerous modifications and upgrades since its introduction (Govil & Sharma, 2022; Wang et al., 2022). Currently, decision-makers have successfully applied this method to solve many practical problems in different application areas (Radulescu et al., 2017; Rahim et al., 2018; Arsić et al., 2020). The TOPSIS method was applied using the steps represented in the papers of Chede et al. (2021) and Chakraborty (2022).

4. Application of MCDM methodology: results and discussion

The data used in this survey were collected from the Global Entrepreneurship Monitor (GEM) database. GEM is a networked consortium of national country teams, most of which

are affiliated with prestigious academic institutions (Hill et al., 2022). This research focuses on adults' attitudes toward entrepreneurship and factors impacting entrepreneurial attitudes. To access these factors, the GEM conducts a National Expert Survey (NES) in each economy to obtain expert opinions on the sufficiency of each factor. An 11-point Likert scale was used for factor evaluation, ranging from completely untrue (0) to completely true (10).

This study uses these factors to analyze the business climate for entrepreneurship development in selected European countries. All 13 criteria from the GEM report were used (Hill et al., 2022): entrepreneurial finance (A1), ease of access to entrepreneurial finance (A2), government policy: support and relevance (B1), government policy: taxes and bureaucracy (B2), governmental, entrepreneurial programs (C), basic school entrepreneurial education and training (D1), post-school entrepreneurial education and training (D2), R&D transfer (E), commercial and professional infrastructure (F), internal market dynamics (G1), internal market openness (G2), physical and service infrastructure (H), and cultural and social norms (I).

In the most recent (23rd) report, the GEM) provides a comprehensive and current body of evidence from extensive interviews with over 150,000 people in 50 countries in 2021. The report contains individual national economic profiles that provide an exploration and overview of the national business context and critical data on each economy. Considering the conditions in which entrepreneurs operated last year, the report examines whether government reactions to the pandemic have mitigated the decline in new business start-ups and whether governments have done enough to support entrepreneurs. Only the European countries covered by the GEM report were involved in this research. The following 25 countries were included: Croatia, Cyprus, Germany, Greece, Italy, Latvia, the Netherlands, Lithuania, Belarus, France, Finland, Hungary, Ireland, Luxembourg, Norway, Poland, the Russian Federation, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom, Romania, and Turkey. Table 1 shows the values of the GEM variables for the selected economies in 2021, forming the ranking decision matrix.

Table 1. Decision matrix for all analyzed countries

Country	Criteria												
	A1	A2	B1	B2	C	D1	D2	E	F	G1	G2	H	I
Croatia	4.3	3.7	2.7	3.4	4.1	2.7	3.4	3.3	4.8	5.8	3.5	6.0	3.0
Cyprus	3.6	4.3	4.4	5.2	3.9	2.7	4.0	3.8	5.4	4.6	4.0	5.3	3.6
Germany	5.3	5.1	4.4	4.7	6.4	2.8	5.2	4.9	6.3	5.3	5.0	6.1	4.6
Greece	4.2	3.8	4.8	4.7	4.3	2.6	3.8	4.9	5.1	4.6	4.1	5.5	4.6
Italy	4.8	4.3	5.0	3.8	4.7	3.2	4.6	4.9	5.6	4.7	4.7	6.0	5.1
Latvia	4.8	4.4	4.3	4.8	5.2	4.0	4.6	4.5	6.1	5.3	5.1	7.1	5.2
Netherlands	6.7	6.0	5.8	6.8	6.4	5.8	6.1	5.6	6.7	5.0	6.5	8.0	6.7
Lithuania	6.1	5.6	6.1	6.0	6.1	4.7	5.6	5.8	6.8	5.4	6.5	8.5	6.2
Belarus	2.6	2.8	1.7	4.4	2.2	1.8	3.8	2.3	5.6	5.7	3.9	6.7	3.9
France	5.7	5.2	6.3	5.4	5.9	2.9	5.7	4.7	5.6	3.4	4.7	7.2	4.3
Finland	7.1	6.6	5.5	6.3	5.6	6.1	6.0	6.0	6.9	4.2	6.1	8.6	5.4
Hungary	4.9	4.7	4.0	5.1	4.4	2.5	4.0	4.0	5.8	3.5	4.2	7.2	4.3
Ireland	5.0	4.5	4.4	5.1	5.5	3.3	4.0	4.4	5.4	4.2	5.1	5.2	5.4

End of Table 1

Country	Criteria												
	A1	A2	B1	B2	C	D1	D2	E	F	G1	G2	H	I
Luxembourg	4.4	4.2	5.4	5.5	5.9	3.4	5.1	5.1	5.3	3.0	4.7	6.8	4.6
Norway	5.1	4.9	4.4	6.8	6.4	5.4	5.5	5.7	6.9	3.0	5.4	8.0	6.1
Poland	4.7	4.1	3.5	4.2	4.3	1.7	2.9	3.3	5.1	6.4	3.9	6.8	4.0
Russian Federation	3.4	4.1	3.4	4.2	3.7	2.8	4.1	2.8	5.6	6.5	3.4	6.4	3.6
Slovak Republic	4.5	4.5	3.4	3.4	3.9	2.8	4.5	3.5	5.6	4.4	4.6	7.2	4.0
Slovenia	4.5	3.7	3.9	4.2	5.1	2.3	4.1	3.5	5.5	6.0	4.3	5.9	3.2
Spain	4.9	4.8	5.4	5.1	6.3	3.5	6.1	5.6	6.7	5.0	5.0	6.8	5.2
Sweden	6.4	5.7	3.5	4.7	5.0	4.1	4.4	4.9	6.5	5.1	4.9	7.6	5.8
Switzerland	5.8	5.2	5.1	6.3	6.2	3.6	4.9	6.1	6.1	3.5	5.5	7.9	5.3
United Kingdom	5.2	4.4	4.2	5.6	4.3	3.2	5.0	4.2	5.8	4.9	5.5	6.5	5.3
Romania	4.0	4.1	3.1	4.1	3.1	2.5	3.9	2.7	5.5	4.9	4.3	5.8	3.7
Turkey	4.5	3.8	3.9	3.9	4.3	2.1	3.7	3.9	4.4	7.0	3.8	5.0	3.7

The values presented in Table 1 provide the first insights into the business climate for entrepreneurship development in the countries considered during the COVID-19 period. There were significant differences across countries regarding the observed factors. The lowest values of the indicators are marked in yellow, and the highest values are marked in green. The first insight in Table 1 indicates that the countries considered have implemented the most improvements in the area of physical and service infrastructure (H), where all countries recorded relatively high scores (above 5). On the other hand, the area where significant room for improvement exists is basic school entrepreneurial education and training (D1), where almost all countries (except the Netherlands, Finland, and Norway) have recorded considerably low scores.

Belarus has the largest number of indicators with the lowest values. This country records the worst performance in the areas (A1), (A2), (B1), (C), and (E). It is worth noting that most of the remaining criteria were among the lowest in this group of countries. Such an unfavorable business climate results from the high share of the public sector in GDP creation and insufficient government efforts to promote the development of the private sector.

Croatia, Poland, and Turkey had the lowest values for the two criteria. In Croatia, government policies such as (B2) and (I) indicate that the tax system and insufficiently developed cultural and social norms slow entrepreneurship development the most. The confidence of Croatian entrepreneurs' (or potential entrepreneurs') may be somewhat limited if they have difficulty obtaining financing. The scores for all three of Croatia's governance-related factors were among the lowest among GEM Level B economies. These circumstances should be improved if the government could develop highly visible programs geared toward entrepreneurs, giving some assurance that the government supports their work. Actions should be taken fairly rapidly in some segments of the business environment (Hill et al., 2022). In Poland, the (D1) and (D2) had the lowest values, indicating that formal education still does not support the development of the necessary knowledge and attitudes toward entrepreneurship.

Turkey's most pronounced barriers to (F) and (H) indicate that entrepreneurs face significant infrastructural problems.

There are countries with the most pronounced limitations. In Luxembourg and Norway, (G1) reflects the small size of the internal market in these countries and entrepreneurs' limited access to domestic markets. Governments in these countries should search for ways to make it simpler for entrepreneurs to reach new consumer markets (Hill et al., 2022). The weakest point of the Russian Federation is (G2), while in the Slovak Republic, it is (B2).

On the other hand, the country with the largest number of best-performing areas is the Netherlands, where five out of 13 criteria have the highest values compared to the other countries: (B2), (C), (D2), (G2), and (I). This country has made significant and continuous efforts to improve its business environment, which has eased business for entrepreneurs during the crisis. The next country with the largest number of highest score values was Finland. The country is the best performer in the following areas: (A1), (A), (D1), and (F). In this country, special focus has been placed on financial support for entrepreneurs, while the continuous efforts in the previous period in the last two areas resulted in the highest values of these indicators in 2021. Many new businesses can scale up and maintain long-term growth due to the quality of the country's financial sector and the effective distribution of funds (Hill et al., 2022). Norway is a country with three best-performing areas: (B2), (C), and (E). Government support for entrepreneurs is intensive, enabling economic growth and innovation development. Given this, the country's entrepreneurial bureaucracy will not require many changes in the future, so policymakers should only consider how to address entrepreneurs' specific problems. Lithuania was the best performer in two areas: (G2) and (H). There were also countries with one indicator with the highest value among the countries considered. These are Germany (C), France (B1), Spain (D1), Switzerland (E), and Turkey (G1). For example, supporting measures implemented by the German government intended to protect companies and start-ups affected by the COVID-19 crisis include taxation support, state support for short-hour working, improved measures at guarantee banks, as well as loans, and special programs provided by KfW, a state-owned development bank (Kuckertz et al., 2020).

Finally, it should be mentioned that 10 out of 25 countries had no indicator with the highest or lowest values (Cyprus, Greece, Italy, Latvia, Hungary, Ireland, Slovenia, Sweden, the United Kingdom, and Romania). Such mixed results across observed countries indicate that a comparative analysis of the business environment in these countries requires using a multi-criteria approach.

4.1. Weights of criteria obtained by Shannon Entropy method

Following the methodological steps presented by Dwivedi and Sharma (2022), the weights for each criterion were obtained and are presented in Table 2.

Table 2. The weights of the criteria

Criteria	A1	A2	B1	B2	C	D1	D2	E	F	G1	G2	H	I
W_j	0.072	0.053	0.109	0.063	0.092	0.188	0.060	0.102	0.022	0.080	0.051	0.037	0.072

Based on the results shown in Table 2, it can be seen that the most pronounced differences across observed countries and, accordingly, the highest weight are recorded in criteria D1 (0.188), followed by criteria B1 (0.109) and E (0.102). In contrast, the criterion with the lowest weight was H (0.037). According to these results, it can be concluded that differences in basic entrepreneurial education will have the most influence on obtained rankings, while the impact of differences in physical and service infrastructure will be the lowest.

4.2. TOPSIS method results' presentation and discussion

The TOPSIS methodology was used to rank European countries according to their business climate for entrepreneurial development during the COVID-19 pandemic. Based on the application of the TOPSIS methodology, Figure 2 illustrates the graphical representation of obtained results.
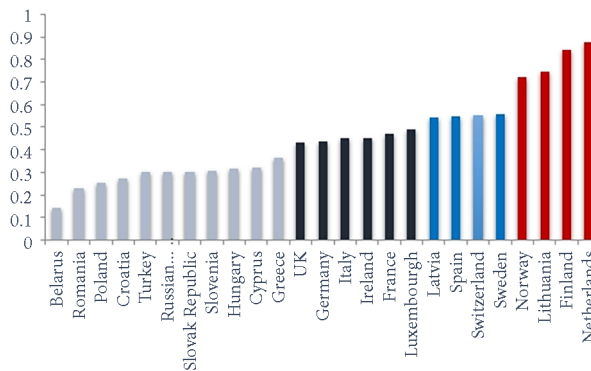

Figure 2. Position of the analyzed countries in the final rankings

It is evident from Figure 2 that the Netherlands is the first-ranked country, followed by Finland, Lithuania, Norway, Sweden, Switzerland, Spain, Latvia, Luxemburg, France, Ireland, Italy, Germany, the United Kingdom, Greece, Cyprus, Hungary, Slovenia, the Slovak Republic, Russia, Turkey, Croatia, Poland, Romania, and Belarus. The Netherlands is the best-ranked country due to numerous improvements in the business environment in the previous period and significant support to the SME sector during the crisis (Groenewegen et al., 2021). To mitigate the economic impact of the pandemic crisis, the Dutch government compensated wage costs for the companies with low turnover and provided social benefits to the self-employed. Additional expenditure amounts to about 12 percent of the GDP, which will be easily covered considering the low public debt, which amounted to only 50 percent of the GDP (Antonides & van Leeuwen, 2021).

The mean, maximum, and minimum values of indicators are presented to identify differences among countries within clusters.

According to the results in Figure 3, Cluster I consists of four countries with significantly higher Ci^* values, which are the best performers in several areas. It is interesting to note that Litvania, although it had fewer best-performing areas than Norway, was better ranked due to the higher values of all criteria except B2, C, and D1. In addition, the country does not have any worst-performing areas. Cluster II also consists of four countries with significantly improved business climate for entrepreneurship development (with above-average scores for

most observed criteria). The next six countries formed Cluster III. The above-average values of several criteria characterize them. Except for Luxemburg, countries from this cluster did not have any best- or worst-performing areas. Most members in Cluster IV are former command economies, except Greece and Cyprus. These countries have below-average values for most criteria, indicating that they should significantly improve the business climate to support entrepreneurship development.
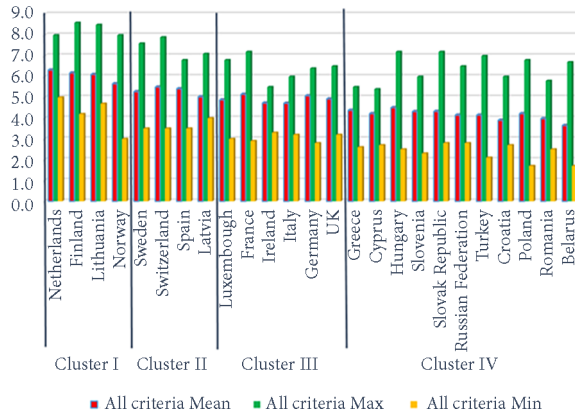

Figure 3. Characteristics of countries in derived clusters

Conclusions

The literature analysis revealed that a positive entrepreneurial attitude and better knowledge of entrepreneurial processes would increase the chances of becoming an entrepreneur. An entrepreneurial career could look more attractive if complex solutions involving the transfer of knowledge and information, changing young people's attitudes toward the added value created by business, were undertaken. Future entrepreneurs do not just need entrepreneurial skills. They represent not only the opportunity to start one's own business but also cover a set of skills (creativity, cooperation, communication, critical thinking, etc.) that are very useful in daily life. The ability of an entrepreneur to adapt to a changing situation was confirmed during the Covid-19 crisis, which led to the collapse of some businesses, while many others (e.g., food and pharmaceutical industries) either expanded or were renewed (e.g., food supply and home delivery services).

The research divided the selected European countries into four clusters by 13 criteria representing the business environment for entrepreneurship development. Eastern European countries fell into cluster IV, rated the worst in terms of the business climate for entrepreneurship development. One of the main reasons for this result is the failure of students to instill the spirit of entrepreneurship. It can be unequivocally stated that Eastern European countries lack innovative school curricula, which forces entrepreneurial knowledge to be tested only through experience. Unfortunately, these processes require financial, human, and time resources and serious decisions and commitments from national governments and school principals. Based on the best practices of the countries falling into Cluster I, it would

be relevant to introduce subjects related to entrepreneurship development in primary and secondary schools. It can also be stated that the Covid-19 crisis negatively impacted the business environment's development, especially during the distance learning period.

Our paper has several research limitations that should be addressed in future studies. This study utilizes thirteen factors proposed by GEM to analyze the business climate for entrepreneurship development in selected European countries. Some other combination of criteria could be applied to compare the obtained results, which would help to validate the outcome and formulate further recommendations. Moreover, an empirical study using qualitative methodology, e.g., surveying individual respondents in the selected countries, would deepen the knowledge of the business climate for entrepreneurship development during the pandemic period providing answers to questions about what and why.

Funding

References

Adebiyi, S. O., Amole, B. B., Arikewuyo, K. A., & Oyenuga, O. G. (2019). Multi-criteria decision analysis of entrepreneurial orientation and business performance in Nigeria. *Economics and Business*, *33*(1), 140–151. https://doi.org/10.2478/eb-2019-0010

Aghion, P. (2017). Entrepreneurship and growth: Lessons from an intellectual journey. *Small Business Economics*, *48*(1), 9–24. https://doi.org/10.1007/s11187-016-9812-z

Ahsany, F., Alamsyah, A. F., & Al-Fatih, S. (2020). Legal protection of labour rights during the coronavirus disease 2019 (COVID-19) pandemic. *Jurnal Pembaharuan Hukum*, *7*(2), 100–115. https://doi.org/10.26532/jph.v7i2.10975

Antonides, G., & van Leeuwen, E. (2021). Covid-19 crisis in the Netherlands:"Only together we can control Corona". *Mind* & *Society*, *20*(2), 201–207. https://doi.org/10.1007/s11299-020-00257-x

Arsić, S., & Gajić, M. (2021, November). Industry 4.0: Assessing the level of advanced digital technologies in the EU countries using integrated Entropy-TOPSIS methods. In *International Scientific Conference "UNITECH 2021"* (pp. II-133–II-138), Gabrovo, Bulgaria.

Arsić, S., Nikolic, Dj., & Jevtic, M. (2020). An investigation of the usability of image-based CAPTCHAs using PROMETHEE-GAIA method. *Multimedia Tools and Applications*, *80*(6), 9393–9409. https://doi.org/10.1007/s11042-020-10054-w

Bartik, A. W., Bertrand, M., Cullen, Z., Glaeser, E. L., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences*, *117*(30), 17656–17666. https://doi.org/10.1073/pnas.2006991117

Belghitar, Y., Moro, A., & Radić, N. (2022). When the rainy day is the worst hurricane ever: The effects of governmental policies on SMEs during COVID-19. *Small Business Economics*, *58*(2), 943–961. https://doi.org/10.1007/s11187-021-00510-8

Chakraborty, S. (2022). TOPSIS and modified TOPSIS: A comparative analysis. *Decision Analytics Journal*, *2*, 100021. https://doi.org/10.1016/j.dajour.2021.100021

Chede, S. J., Adavadkar, B. R., Patil, A. S., Chhatriwala, H. K., & Keswani, M. P. (2021). Material selection for design of powered hand truck using TOPSIS. *International Journal of Industrial and Systems Engineering*, *39*(2), 236–246. https://doi.org/10.1504/IJISE.2021.118257

Cincotta, P. M., Giordano, C. M., Silva, R. A., & Beaugé, C. (2021). The Shannon entropy: An efficient indicator of dynamical stability. *Physica D: Nonlinear Phenomena*, *417*, 132816. https://doi.org/10.1016/j.physd.2020.132816

COVID-19 – Consumer Law Research Group. (2020). Consumer law and policy relating to change of circumstances due to the COVID-19 pandemic. *Journal of Consumer Policy*, *43*, 437–450. https://doi.org/10.1007/s10603-020-09463-z

Donthu, N., & Gustafsson, A. (2020). Effects of COVID-19 on business and research. *Journal of Business Research*, *117*, 284–289. https://doi.org/10.1016/j.jbusres.2020.06.008

Dwivedi, P. P., & Sharma, D. K. (2022). Application of Shannon Entropy and COCOSO techniques to analyze performance of sustainable development goals: The case of the Indian Union Territories. *Results in Engineering*, *14*, 100416. https://doi.org/10.1016/j.rineng.2022.100416

Galindo-Martín, M. Á., Castaño-Martínez, M. S., & Méndez-Picazo, M. T. (2021). Effects of the pandemic crisis on entrepreneurship and sustainable development. *Journal of Business Research*, *137*, 345–353. https://doi.org/10.1016/j.jbusres.2021.08.053

Ghazy, N., Ghoneim, H., & Lang, G. (2022). Entrepreneurship, productivity and digitalization: Evidence from the EU. *Technology in Society*, *70*, 102052. https://doi.org/10.1016/j.techsoc.2022.102052

Govil, N., & Sharma, A. (2022). Validation of agile methodology as ideal software development process using Fuzzy-TOPSIS method. *Advances in Engineering Software*, *168*, 103125. https://doi.org/10.1016/j.advengsoft.2022.103125

Groenewegen, J., Hardeman, S., & Stam, E. (2021). Does COVID-19 state aid reach the right firms? COVID-19 state aid, turnover expectations, uncertainty and management practices. *Journal of Business Venturing Insights*, *16*, e00262. https://doi.org/10.1016/j.jbvi.2021.e00262

Gubik, A. S. (2021). Entrepreneurial career: Factors influencing the decision of Hungarian students. *Entrepreneurial Business and Economics Review*, *9*(3), 43–58. https://doi.org/10.15678/EBER.2021.090303

Hill, S., Ionescu-Somers, A., Coduras, A., Guerrero, M., Roomi, M. A., Bosma, N., Sahasranamam, S., & Shay, J. (2022). *Global Entrepreneurship Monitor 2021/2022 global report: Opportunity Amid Disruption.* In Expo 2020 Dubai. https://www.gemconsortium.org/report/gem-20202021-global-report

Hwang, C. L., & Yoon, K. (1981). *Multiple attribute decision making. Methods and applications a state-of-the-art survey*. Springer Verlag. https://doi.org/10.1007/978-3-642-48318-9

Iwuoha, V. C., & Aniche, E. T. (2020). Covid-19 lockdown and physical distancing policies are elitist: Towards an indigenous (Afro-centred) approach to containing the pandemic in sub-urban slums in Nigeria. *Local Environment*, *25*(8), 631–640. https://doi.org/10.1080/13549839.2020.1801618

Juergensen, J., Guimón, J., & Narula, R. (2020). European SMEs amidst the COVID-19 crisis: Assessing impact and policy responses. *Journal of Industrial and Business Economics*, *47*(3), 499–510. https://doi.org/10.1007/s40812-020-00169-4

Kelley, D., & Wright, F. (2020). COVID-19 impacts on entrepreneurship: United States. In *Diagnosing COVID-19 impacts on entrepreneurship* (pp. 26–32). London Business School.

Koç, B. (2021). The probable effects of COVID-19 on entrepreneurial trends and SMEs in the tourism and hospitality industry. *Journal of Tourism and Gastronomy Studies*, *9*(3), 1522–1535. https://doi.org/10.21325/jotags.2021.852

Kuckertz, A., Brändle, L., Gaudig, A., Hinderer, S., Morales Reyes, C. A., Prochotta, A., Steinbrink, K. M., & Berger, E. S. (2020). Start-ups in times of crisis – A rapid response to the COVID-19 pandemic. *Journal of Business Venturing Insights*, *13*, e00169. https://doi.org/10.1016/j.jbvi.2020.e00169

Magableh, G. M., & Mistarihi, M. Z. (2022). Applications of MCDM approach (ANP-TOPSIS) to evaluate supply chain solutions in the context of COVID-19. *Heliyon*, *8*(3), e09062. https://doi.org/10.1016/j.heliyon.2022.e09062

Mandviwalla, M., & Flanagan, R. (2021). Small business digital transformation in the context of the pandemic. *European Journal of Information Systems*, *30*(4), 359–375. https://doi.org/10.1080/0960085X.2021.1891004

Mohammed, A. H. A. (2022). SMEs' sustainable development challenges post-COVID-19: The tourism sector. *World Journal of Entrepreneurship, Management and Sustainable Development*, *18*(3), 407–424.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, *78*, 185–193. https://doi.org/10.1016/j.ijsu.2020.04.018

OECD. (2020). *Coronavirus (COVID-19): SME policy responses*. OECD Policy Responses to Coronavirus (COVID-19). Retrieved July 06, 2022, from https://www.oecd.org/coronavirus/policy-responses/coronavirus-covid-19-sme-policy-responses-04440101/

Ozili, P. K., & Arun, T. (2023). Spillover of COVID-19: Impact on the Global Economy. In U. Akkucuk (Ed.), *Managing inflation and supply chain disruptions in the global economy* (pp. 41–61). IGI Global. https://doi.org/10.4018/978-1-6684-5876-1.ch004

Partlova, P. (2021). Business potential of rural areas as a tool of stability and development of small and medium-sized enterprises. *Transformations in Business* & *Economics*, *20*(3), 223–237.

Petrakis, P. E., Valsamis, D. G., & Kafka, K. I. (2020). *Economic growth and development policy*. Springer Books. https://doi.org/10.1007/978-3-030-43181-5

Pitoyo, A. J., Aditya, B., Amri, I., & Rokhim, A. A. (2021). Impacts and strategies behind COVID-19 – Induced economic crisis: Evidence from informal economy. *The Indian Journal of Labour Economics*, *64*(3), 641–661. https://doi.org/10.1007/s41027-021-00333-x

Radulescu, M., Fedajev, A., & Nikolic, Dj. (2017). Ranking of EU national banking systems using multi-criteria analysis in the light of BREXIT. *Acta Oeconomica*, *67*(4), 473–509. https://doi.org/10.1556/032.2017.67.4.1

Rahim, R., Supiyandi, S., Siahaan, A. P. U., Listyorini, T., Utomo, A. P., Triyanto, W. A., Irawan, Y., Aisyah, S., Khairani, M., Sundari, S., & Khairunnisa, K. (2018). TOPSIS method application for decision support system in internal control for selecting best employees. *Journal of Physics: Conference Series*, *1028*, 012052. https://doi.org/10.1088/1742-6596/1028/1/012052

Shannon, C. E. (1948). A mathematical theory of communication. *The Bell System Technical Journal*, *27*(3), 379–423. https://doi.org/10.1002/j.1538-7305.1948.tb01338.x

Shinozaki, S., & Rao, L. N. (2021). *COVID-19 impact on micro, small, and medium-sized enterprises under the lockdown: Evidence from a rapid survey in the Philippines* (ADBI Working Paper 1216). Asian Development Bank Institute, Tokyo. https://doi.org/10.2139/ssrn.3807080

Tofan, M., Bercu, A.-M., & Roman, A. (2016). Entrepreneurship dynamics in EU: A comparative perspective. *Transformations in Business and Economics*, *15*(3), 431–451. https://etalpykla.lituanistikadb.lt/object/LT-LDB-0001:J.04~2016~1581434519108/J.04~2016~1581434519108.pdf

Tomasso, F. D. (2020). The new Italian legislation on corporate governance and business crisis. The impact of COVID-19 on SMEs and the recent rules to mitigate the effects. *Financial Markets, Institutions and Risks*, *4*(4), 91–108. http://doi.org/10.21272/fmir.4(4).91-108.2020

Wang, Y., Liu, P., & Yao, Y. (2022). BMW-TOPSIS: A generalized TOPSIS model based on three-way decision. *Information Sciences*, *607*, 799–818. https://doi.org/10.1016/j.ins.2022.06.018

Zahra, S. A. (2021). International entrepreneurship in the post Covid world. *Journal of World Business*, *56*(1), 101143. https://doi.org/10.1016/j.jwb.2020.101143

Zavadskas, K. E., Antucheviciene, J., & Chatterjee, P. (2019). Multiple-criteria decision-making (MCDM) techniques for business processes information management. *Information*, *10*(1), 4. https://doi.org/10.3390/info10010004