

FACING TRADITIONAL AND DIGITAL DISRUPTIONS:

ENTREPRENEURSHIP
IN HUNGARY

GLOBAL ENTREPRENEURSHIP MONITOR NATIONAL REPORT

HUNGARY
2024-2025



Global
Entrepreneurship
Monitor

JUDIT CSÁKNÉ FILEP • ÁRON SZENNAY • GIGI TIMÁR

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BUEB

Budapest, 2025

ISSN online: 2939-8320
ISBN online: 978-615-6886-19-4
DOI: [10.29180/978-615-6886-19-4](https://doi.org/10.29180/978-615-6886-19-4)

Authors: Judit Csákné Filep, Áron Szennay, Gigi Timár
Lecturer: Attila István Petheő, PhD

The Global Entrepreneurship Monitor National Report - Hungary, 2024-2025 can be cited as Csákné Filep, J., Szennay, Á., Timár, G. (2025). Facing Traditional and Digital Disruptions: Entrepreneurship in Hungary.
DOI: [10.29180/978-615-6886-19-4](https://doi.org/10.29180/978-615-6886-19-4)

The authors would like to express their special thanks to Zsófia Borsodi for her support as project manager of the research and to the BUEB colleagues who contributed to the data collection.

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Responsible publisher: Prof. György Andor, PhD
Responsible editor: Judit Csákné Filep
Series Editor: Gigi Timár
Readers' Editor: Zsófia Borsodi

Pre-press: ACTA DIURNA 2005. Kft.

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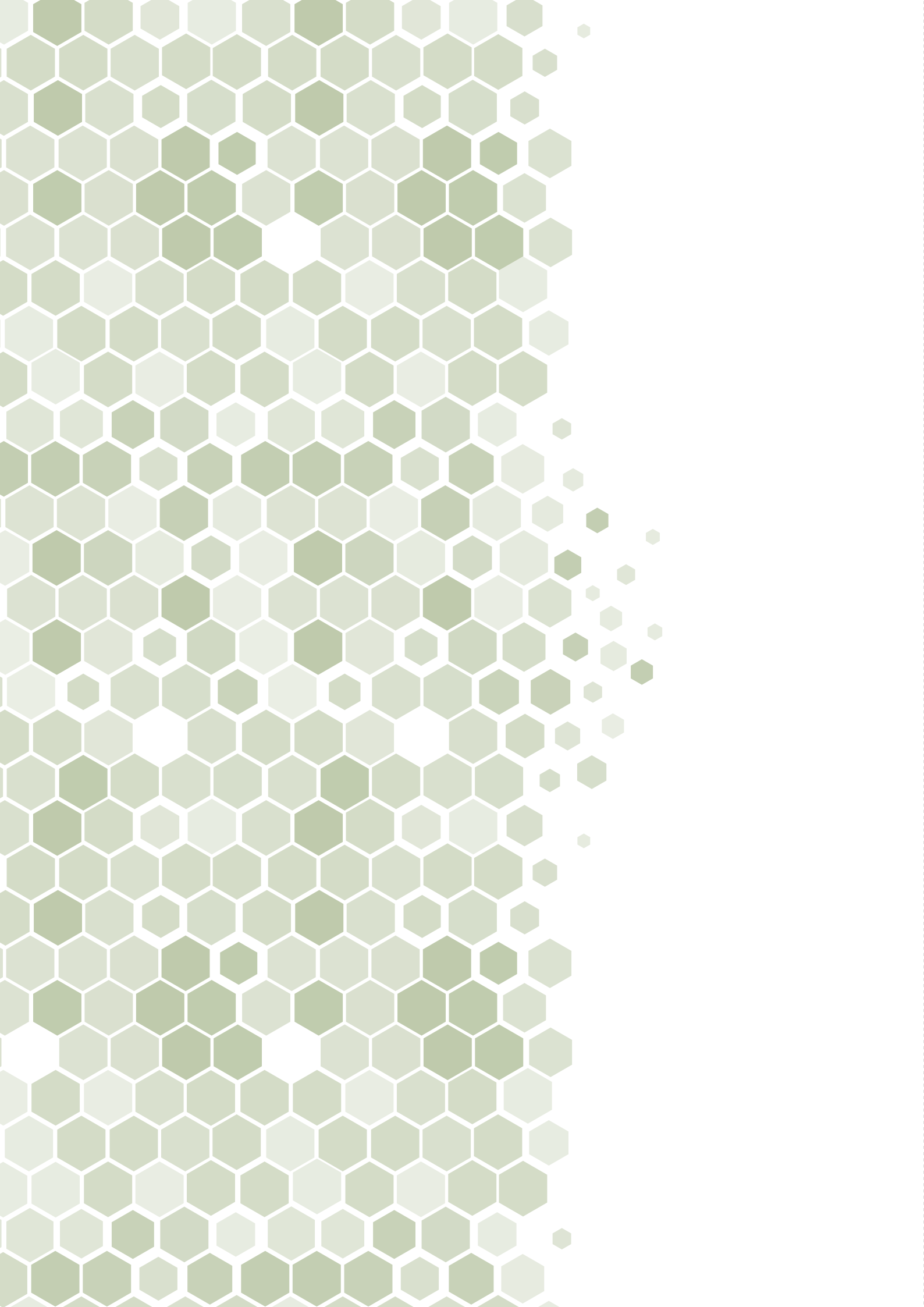
The Global Entrepreneurship Monitor National Report—Hungary 2024-2025 has been prepared using information from the GEM project data collection. The interpretation and analysis of the data in this report are the responsibility of the authors, whose views do not necessarily reflect those of the institution they represent.

GEM's partner in Hungary between 2020 and 2024 was the Budapest University of Economics and Business. The research was conducted by BUEB Budapest LAB Office for Entrepreneurship Development.

The project TKP2021-NKTA-44 was funded by the Ministry of Innovation and Technology with support from the National Research Development and Innovation Fund, under the Thematic Excellence Programme 2021 (TKP2021-NKTA).

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Welcome Message



Elek Nagy

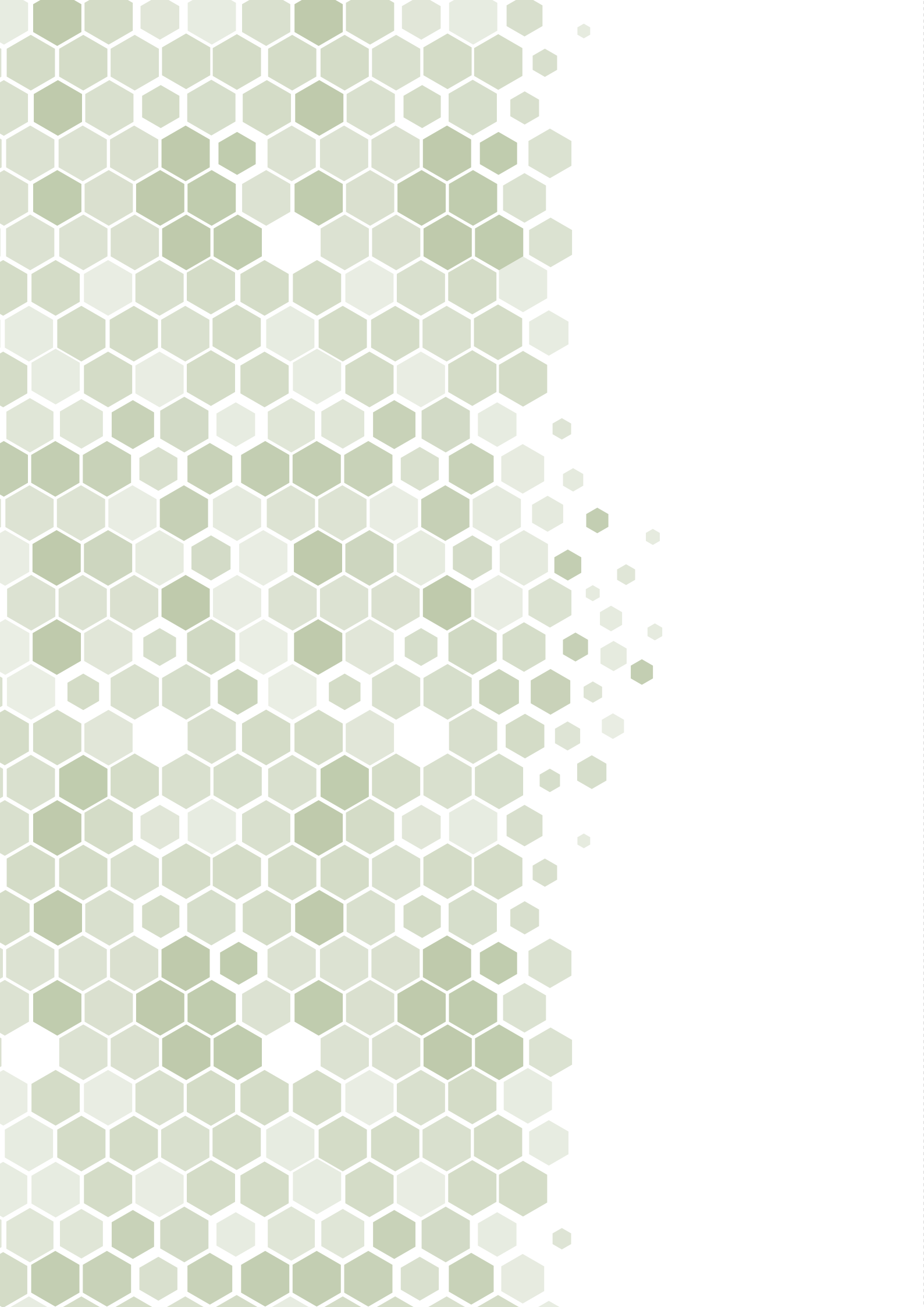
President, Hungarian Chamber of Commerce and Industry

There's something special about the moment when the real face of businesses emerges from behind the numbers, data and analysis - stories of courage, innovation and perseverance. That's why I'm delighted to bring to your attention the latest Hungarian report from the Global Entrepreneurship Monitor (GEM), which is not just a collection of statistics, but a mirror of who we are as entrepreneurs, as decision-makers, as an economic community.

One of the biggest challenges for entrepreneurs is to make informed decisions in an environment that is fast-changing, and where information and adaptability are increasingly key to success. The GEM research provides an accurate and comprehensive picture of the entrepreneurial ecosystem and helps domestic businesses to better navigate the market opportunities and challenges - both in Hungary and internationally. For the renewed leadership of the Hungarian Chamber of Commerce and Industry, it is a priority that our decisions are based on knowledge and credible data. As President, I deeply believe that the future economy will be shaped by businesses that are able to grow through data-driven, conscious strategies. The GEM provides essential support in this by mapping the most important connections of entrepreneurial dynamics.

The mission of the Chamber remains unchanged: to support Hungarian SMEs, strengthen their competitiveness, and provide them with a knowledge base that will enable them to thrive successfully in the global economy. The GEM report is a valuable tool for all those who wish to make responsible, well-founded decisions for the future of the Hungarian economy.

With respect and trust, I present to you this report, which is not only about our present – but also about our future, which we can shape together.



Foreword



Prof. Dr. György Andor

Rector, Budapest University of Economics and Business

The Budapest University of Economics and Business (BUEB), as Hungary's largest university of economics, plays an outstanding role in training the professionals of the future, and as a market leader in economics, it also plays an important role in the academic study of the Hungarian entrepreneurial world. BUEB has been a member of the Global Entrepreneurship Monitor, the world's largest entrepreneurship research community since 2020. The BUEB GEM team is particularly proud to have been awarded a prize by the international consortium for its punctuality and collegiality in conducting the research cycle on the occasion of the 25th anniversary of the research.

The data from this research contributes to updating our education, forms the basis for qualified scientific publications, but in addition to its direct scientific value, GEM is also an excellent example of how we can strengthen our international relations, partnering with companies and policy makers as knowledge providers. The topics covered in GEM range from the social perception of businesses to understanding their day-to-day operations, motivations and plans, to assessing the state of the Hungarian business ecosystem, providing a reliable background for data-driven decision-making for a wide range of our partners.

As every year, we publish the latest data from the survey in a publicly available report. I trust that you will find it interesting and useful.



Executive Summary

Entrepreneurs create value for the whole national economy, not only in the direct economic and labour market sense, but also in the broader social development context. Thus, entrepreneurship and the social perception of entrepreneurship, the attitudes towards entrepreneurship, and the state of the ecosystem around them are important issues not only for entrepreneurs and those intending to start a business, but also for decision-makers and policy-makers in the economic field. Since 1999, the Global Entrepreneurship Monitor (GEM), the world's foremost study of entrepreneurship, has provided reliable data on entrepreneurial activity and the state of the entrepreneurial ecosystem in the participating economies. Between 2020 and 2024, Hungary was represented by the Budapest University of Economics and Business (BUEB) in the global consortium, in which renowned universities worldwide participate. This is the fourth year of data collection in Hungary, managed by the BUEB Budapest LAB Office for Entrepreneurship Development. The research involved a representative questionnaire survey of 2040 people aged 18-64 and interviews with 36 experts selected according to strict criteria.

This report summarises the Hungarian research results, providing information on the state of the entrepreneurial climate, activity, and ecosystem in Hungary and also offering the opportunity to compare the results across Europe and globally.

Knowledge is still lacking, but new opportunities are emerging

Overall, the perception of the entrepreneurial climate, i.e. the results of the questions summarising opinions on entrepreneurship, can be considered stable. Few people still think they have sufficient knowledge (35.8%), and the proportion of those who would not start a business for fear of it might fail is stagnating (42.1%). There is no significant change in the percentage of Hungarians who know someone who has started a business in the last two years (46.7%). Where change is evident is in the slight but steady decline in the proportion of those who think it is easy to start a business (43.2% in 2024). However, the proportion of those who think there will be good opportunities to start a business in the next six months is increasing (32.3%), indicating an improvement in economic expectations.

A higher-than-average proportion of people under 35 think there will be good business opportunities in the next six months but find it harder to start a business in Hungary. As in previous years, men generally responded more positively than women to all the elements of the entrepreneurial climate surveyed.

The link between educational attainment and the assessment of the entrepreneurial climate remains strong in several respects. Significantly more people know entrepreneurs among those with higher than secondary education than those with less than secondary education, and when it comes to having the knowledge, skills and experience necessary to start a business, the difference is dramatic, almost double between those with primary education (25.2%) and those with higher than secondary education (45.6%). However, there is no difference in the perceived ease of starting a business in Hungary between those with different levels of education.

Entrepreneurship sounds attractive, but it doesn't work

The assessment of entrepreneurship in Hungary has been very stable in recent years, with only negligible differences between the results for each year between 2021 and 2024. There is a lot of media attention for businesses (49%), many (45.1%) think that successful entrepreneurs have high status, and almost half (46.1%) believe that entrepreneurship is a desirable career option. People under 35 also have a more positive than average view of entrepreneurship as a career option and associate higher status with entrepreneurship, presumably because the generation that grew up after the regime change has different experiences of entrepreneurship than before. Entrepreneurship will continue to be a more attractive option for those with secondary or lower education in 2024. This may be explained by the fact that in advanced market economies, higher education typically leads to high status and income as an employee, without the risk of entrepreneurship.

While the perception of entrepreneurship has received extreme ratings internationally, the Hungarian assessment is broadly in line with the EU average. 65 percent think that successful entrepreneurs have a high status (EU average 68.1%), 64.9 percent think that there is a lot of media attention for businesses (EU average 62.3%) and 64.8 percent see entrepreneurship as a desirable career option (EU average 61.5%).

However, a significant change is that in 2024, entrepreneurial activity fell significantly compared to previous years. The decline from 9.9 percent to 6.7 percent in the early stages is particularly striking because the year-to-year changes were only a few tenths of a percent between 2021 and 2023. The larger part of the change is explained by a drastic drop in the share of firms that have been in business for at least a few months but no more than 3.5 years. However, the share of those intending to start a business did not

decrease significantly (9.6%), suggesting that compared to intentions, actual business establishment has fallen short of expectations, and the proportion of businesses that have not reached the age of 3 months has increased dramatically.

The decline in early-stage entrepreneurship has resulted in domestic entrepreneurial activity falling significantly below the average of the 51 countries surveyed (13.2%) and the average of high-income countries (11.6%). By European standards, early-stage entrepreneurial activity is in the bottom quartile of the European average, due to a significant decline in 2024. Ranking 14th among the 18 EU Member States means that early-stage entrepreneurial activity is lower than in Hungary only in Poland (2.5%), which usually has an extremely low rate, as well as in Romania (5.0%), Greece (5.5%) and Austria (6.6%). The share of established businesses in Hungary (6.9%) is practically the same as the average of 7.0 percent in the GEM countries.

The lower share of domestic new businesses may also cause a structural economic problem in the next few years, as a higher share of these firms are at least locally engaged in new products/services and apply new processes. Although the lower share of start-ups has not yet had a significant impact on the share of established firms, it is important to monitor the trend continuously.

Money is important, but impact is even more so

By 2024, the key entrepreneurial motivation has become impact. Two-thirds (68.6%) of early-stage entrepreneurs and three-fifths (58.7%) of established entrepreneurs say they also started their business to make a difference in the world. This is particularly interesting considering the significant increase in the role of financial security motivations a year earlier. The fact that the necessity motive - although it still characterises half of the entrepreneurs in both entrepreneurial stages - has now reached its lowest level not only compared to 2023 but also across the entire period of analysis, may indicate more positive expectations for the future or a sense of resignation towards it.

Likely male and more educated

Men are more likely than women to be entrepreneurs in both early-stage and established businesses - women are half as likely as men to be entrepreneurs - and the difference is significant in the most entrepreneurially active age groups. Women were half as likely to be entrepreneurs as men in both 2023 and 2024.

The GEM data show that entrepreneurs' educational attainment is, on average, higher than that of non-entrepreneurs, regardless of gender and stage of entrepreneurship. While two-fifths of women and men in Hungary have more than upper sec-

ondary education, this figure is 46.0 and 55.2 percent, respectively, for early-stage enterprises and 67.4 and 56.8 percent for established enterprises.

Although the proportion of Hungarian active-age adults who self-reported having the knowledge needed to start a business increased slowly but steadily between 2021 and 2023 (from 36% to 38.3%), this figure fell to 35.8 percent in 2024. By 2024, the Hungarian rate will be the lowest in the European Union. But it seems that a change in this area can be achieved in a few years: between 2021 and 2024, Slovakia moved from an extremely low base (33.4%) to catch up with the EU average (52.0%).

Number of leavers down

The majority of Hungarian entrepreneurs continue to sell an existing product or service that is familiar to people living in their area of residence, or use a known technology or process, regardless of the stage of the business. There is also no significant outlier in terms of employment. Almost two thirds (64.9%) of early-stage entrepreneurs and four fifths (78.1%) of established businesses expect to employ the same number of people in five years' time. While start-ups typically expect an increase in the number of employees, the rather negative employment outlook for established businesses is a cause for some concern.

Slightly more than a quarter of businesses rely solely on the local market, while most businesses are active at the national level, regardless of the stage of the business. Another positive result is that the share of established businesses that are active in foreign markets has increased from 17.8 percent in 2023 to 31.7 percent.

The share of entrepreneurs who left their business in the past 12 months has returned to around the 2021 and 2022 levels of 2.2 percent, following a 3.5 percent jump in 2023. In other words, the previous high exit rate was a one-off event due to the turbulent economic environment, rather than the start of a new, more negative trend. Business reasons remained the most common exit reason (56.4%).

Digital challenges

In 2024, the GEM consortium added new questions to better understand how businesses are adopting digital solutions, and how they perceive both the risks and opportunities of AI. Compared to the GEM countries in Europe and North America, Hungarian entrepreneurs are significantly less likely to rate running a webshop or using AI as important - with established businesses being half as likely to rate it as important as the international average. There is no lag, however,

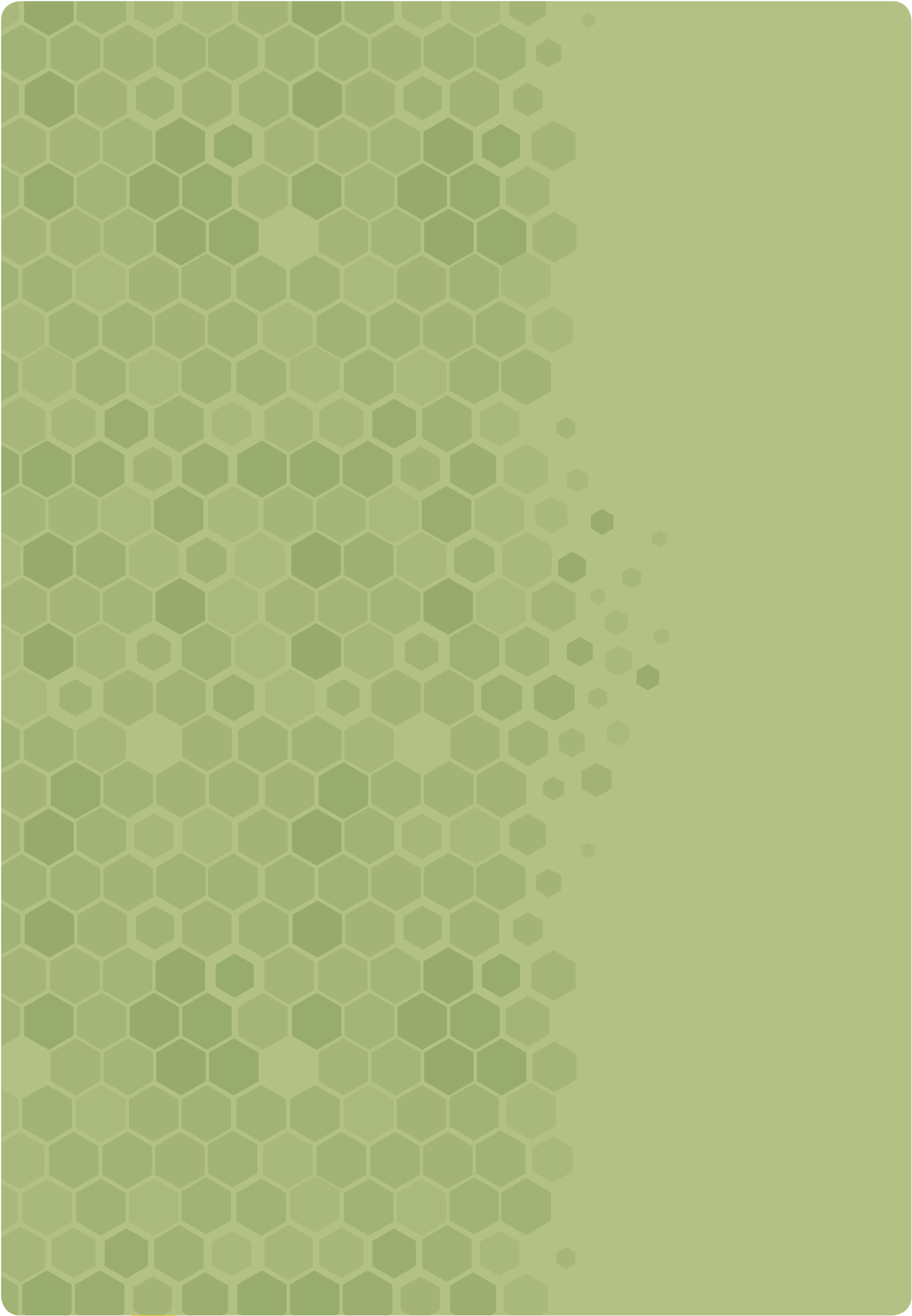
when looking at data analytics tools, cloud services, video conferencing software, work management, accounting, customer relationship management, especially for established businesses. While early-stage entrepreneurs are in line with the average for the countries surveyed, established businesses are even further ahead, in the bottom third.

Mid-range position, with some movement

Based on the 2024 expert assessments, Hungary's National Entrepreneurial Context Index (NECI) score remains unchanged from the previous year at 4.5 on a 10-point scale. This score is considered moderate in a global context and falls 0.2 points below the global GEM average. Among the Visegrád countries participating in the survey, Hungary received the most favourable assessment, outperforming Slovakia's declining score of 3.7 and Poland's score of 4.0.

In the Hungarian context, the assessment of the general physical infrastructures and services, as well as the professional and commercial infrastructure access, in addition to the internal market dynamics, reaches or exceeds the value of 5, which is considered satisfactory. Among these, only the latter shows a year-on-year improving trend. As in previous years, the weakest score was given to entrepreneurship education at the school level (2.5), which, despite an increase of 0.2 points, remains well below the desirable level. Compared to the previous year, a slight decline is observed in the assessment of government policy: bureaucracy and taxes (4.7), as well as in the evaluation of professional and commercial infrastructure access (5.4), while the most significant improvement is seen in the ecosystem condition of entrepreneurship education at vocational, professional, college and university levels (4.8).

A key thematic focus of the 2024 expert survey was sustainability and artificial intelligence. According to the results, the Hungarian entrepreneurial ecosystem lags behind the global and regional assessments in both areas. Experts only rated the perceived importance of environmental sustainability higher than the regional average, although even this score remained below the global value. In the area of artificial intelligence, while it is a positive sign that the availability of AI-related education and training slightly exceeds both the global and regional evaluations, this is not reflected in entrepreneurs' awareness of and commitment to AI developments, nor in employees' preparedness for AI adoption—areas in which Hungary shows the greatest lag behind global and regional benchmarks.



THE GENERAL ENTREPRENEURIAL CLIMATE

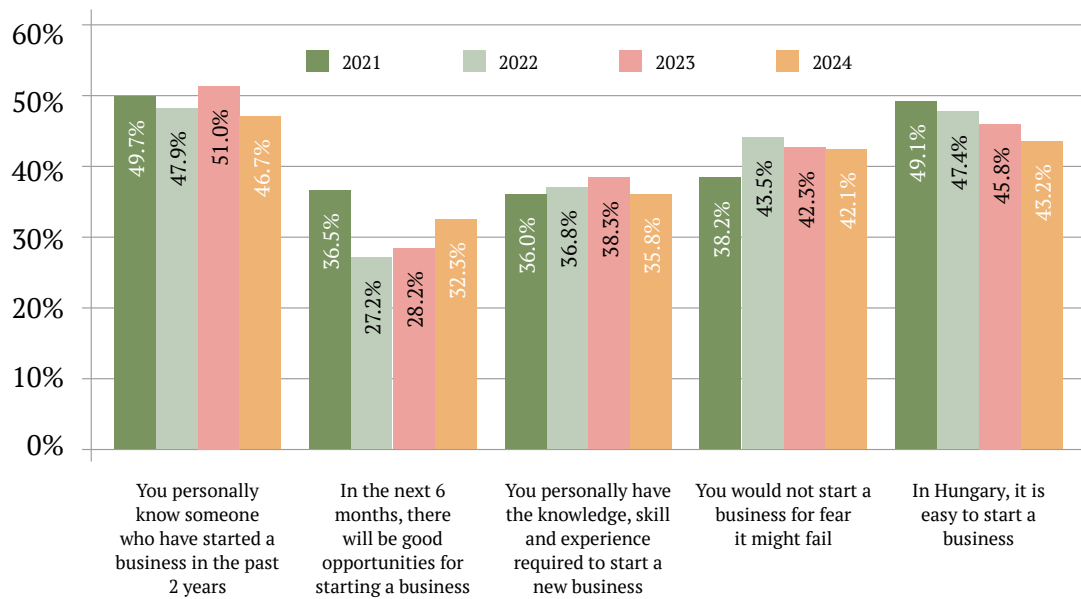
The Hungarian population's assessment of the entrepreneurial climate is stable compared to data from recent years (Figure 1).

The share of the working-age population who personally know someone who has started a new business in the last 2 years has fallen slightly to 46.7 percent compared to 2021-2023. Although it is a slightly decline, the recent figure is only 1.2 percentage points below the lowest in the previous three years, so it would only be a cause for concern if the downward trend were to continue in the following years. The improvement in economic expectations is indicated by the 5.1 and 4.1 percentage points increase in the share of those who believe that there are good opportunities to start a business in the next 6 months to 32.3 percent, compared to the results for 2022 and 2023, respectively.

Still only a small share of the adult population, 35.8 percent, admit to having the knowledge, skills and experience needed to start a business. Fear of failure is also stagnating - the proportion of the adult population who are deterred from starting a business by the prospect of failure has remained essentially unchanged in recent years, with four in ten (42.1%) still not starting a business because of the possibility of failure.

More people are confident of good business opportunities compared to the very low baseline, but respondents' assessment of the ease of starting a new business and the ease of starting a business among those they know shows caution.

Figure 1. Entrepreneurial climate in Hungary



A negative trend is that from the start of our research, from 2021, the proportion of adults who think it is easy to start a business in Hungary will decrease slightly, but steadily. While in 2021, one in two (49.1%) adults thought so, in 2024 the figure was only 43.2 percent.

So, although there is a positive shift from the very low baseline of 2022-2023 in the proportion of Hungarians expecting good business opportunities in the following 6 months, both the number of new businesses started among respondents' acquaintances and the perceived ease of starting a new venture show a more cautious assessment among Hungarians.

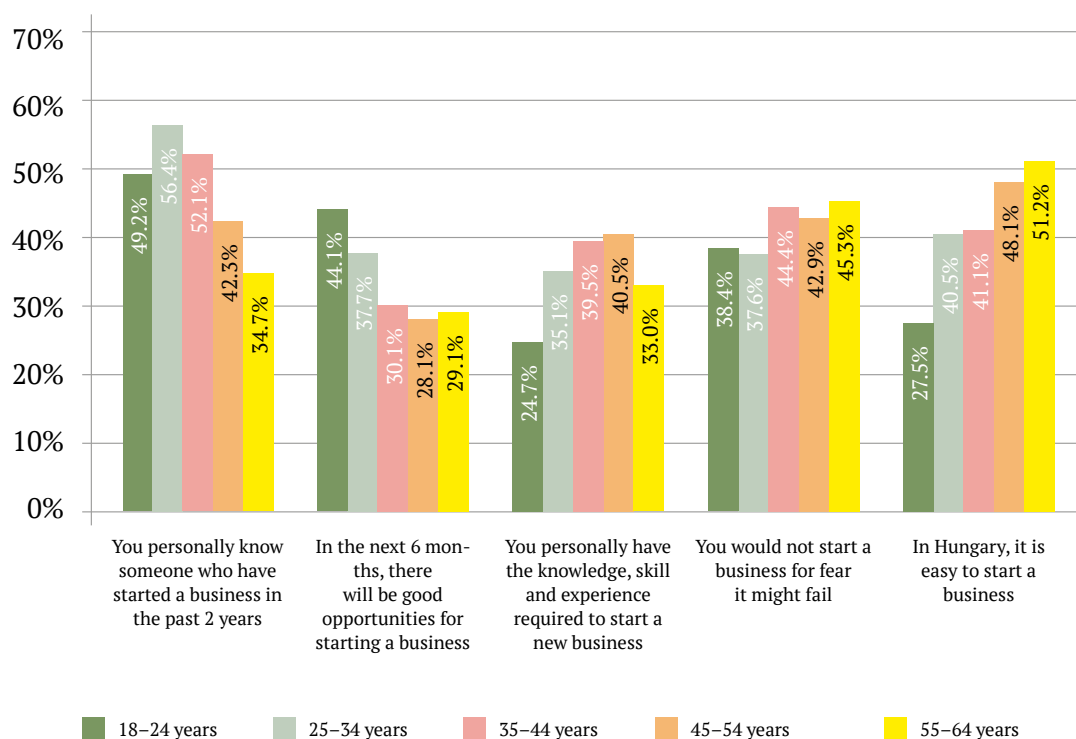
The effect of age and gender on the entrepreneurial climate

Different age groups may perceive the entrepreneurial climate differently due to their different socialisation, experiences and life situations (Figure 2). A good example is the higher than average (46.7%) proportion of people younger than 45 who know someone who has started a new business in the last 2 years. As in previous years, the age group 25-34 years remains the age group with the highest proportion (56.4%) who know new entrepreneurs in their environment.

As in the 2023 results, there is no significant correlation between age and the examined elements of entrepreneurial climate, except for fear of failure. This means that although a slightly higher proportion of those aged 34 and over are deterred from entrepreneurship by the prospect of failure, the propensity to fail for each age group can be considered to be the same.

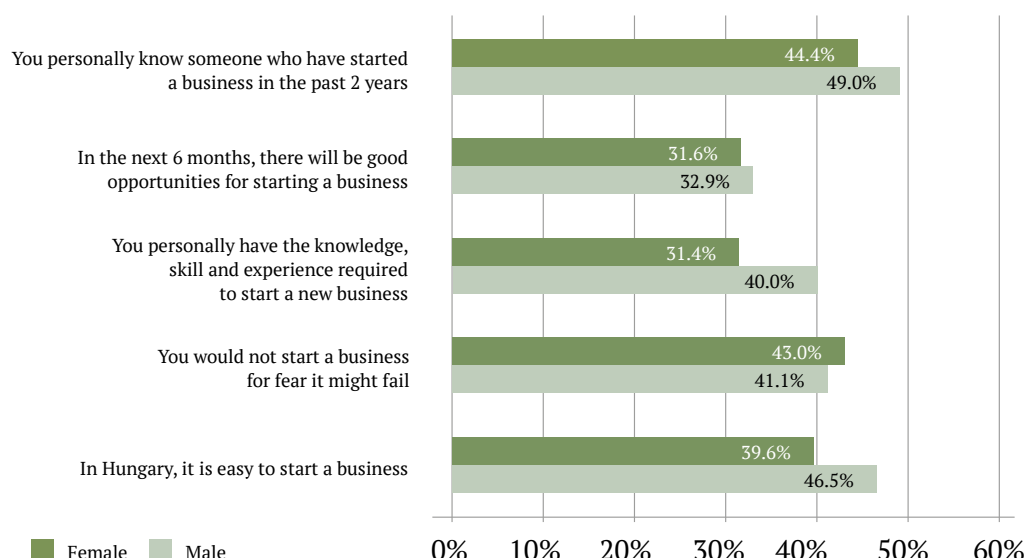
Furthermore, a higher than average share of people under 35 think that there will be good business opportunities in the next six months and that they have sufficient knowledge, skills, and experience to start a business. Both figures are in line with the results of previous years. This may be linked to the high propensity of this age group within the population to become entrepreneurs. However, it is striking that 18-24 year olds are the least confident in their skills. A similar picture emerges when evaluating the difficulty of starting a business in Hungary - while half of those aged 44 and over think it is easy to start a business, two out of five respondents aged 25-44 and only one in four under 25 agree with this statement. While the picture is similar to previous years, the gap between the opinions of different age cohorts has closed slightly compared to 2023, with the under-45s becoming more pessimistic.

Figure 2. Assessment of the entrepreneurial climate by age



As in previous years, men consistently responded more positively than women on all the elements of the entrepreneurial climate surveyed. They are more likely to know new entrepreneurs, be more confident in their knowledge of entrepreneurship, be less likely to be influenced by fear of failure, and be more likely to find it easier to start a business in Hungary (Figure 3). However, there is no significant difference in the perception of favourable business opportunities in the next 6 months, consistent with our 2023 results. Both genders are slightly more positive about the near future than they were a year earlier.

Figure 3. Assessment of the entrepreneurial climate by gender



The effect of education on the perception of the entrepreneurial climate

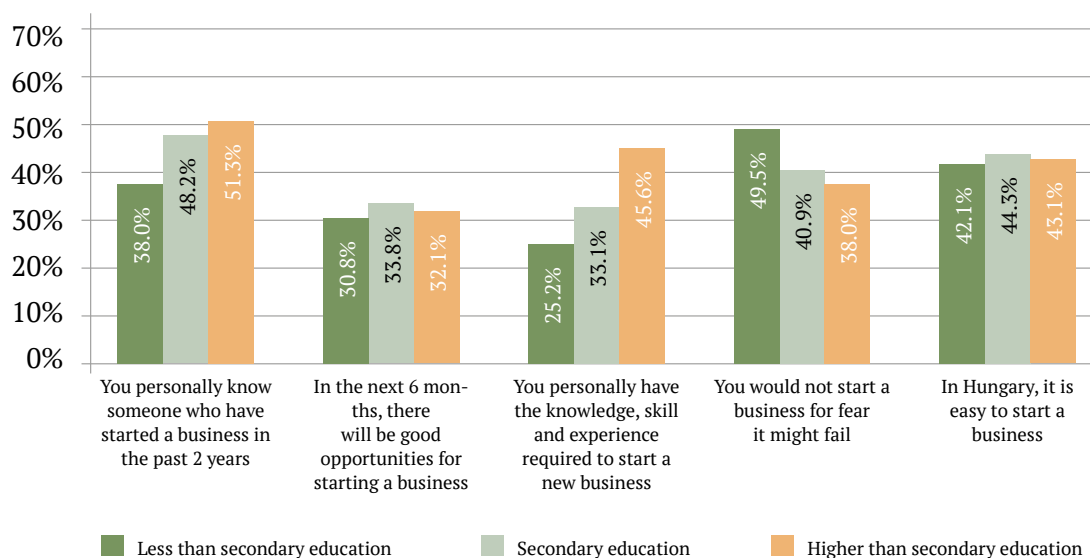
In the analysis, we investigated whether educational attainment influences perceptions of the entrepreneurial climate (Figure 4). As in the previous year, educational attainment is positively associated with whether the respondent knows a new entrepreneur in his/her environment and whether he/she has the knowledge, skills and experience to start a business. Although a lower proportion of those with more than upper secondary education (51.3% instead of 59.0%) know someone who has started a business in the last 2 years compared to 2023 - which has reduced the gap between lower and higher educated respondents - the correlation is still significant.

Almost twice as many people with higher education think they have the knowledge, skills and experience to start a business.

The dramatic, almost twofold difference between those with less than secondary education and those with higher than secondary education in the knowledge, skills and experience needed to start a business remains in 2024. The results suggest that to increase the overall level of entrepreneurial knowledge among primary and secondary school leavers, it would be necessary to develop and introduce courses and training courses that include the skills needed to start and run a business. Moreover, more highly educated people are less deterred from starting a business by the possibility of failure.

The 2024 survey also shows that there is no significant difference by educational level in whether respondents see favourable business opportunities in the next six months or how easy it is to start a business in Hungary. In fact, there is greater agreement in this respect than in the previous year.

Figure 4. Assessment of entrepreneurial climate by educational attainment

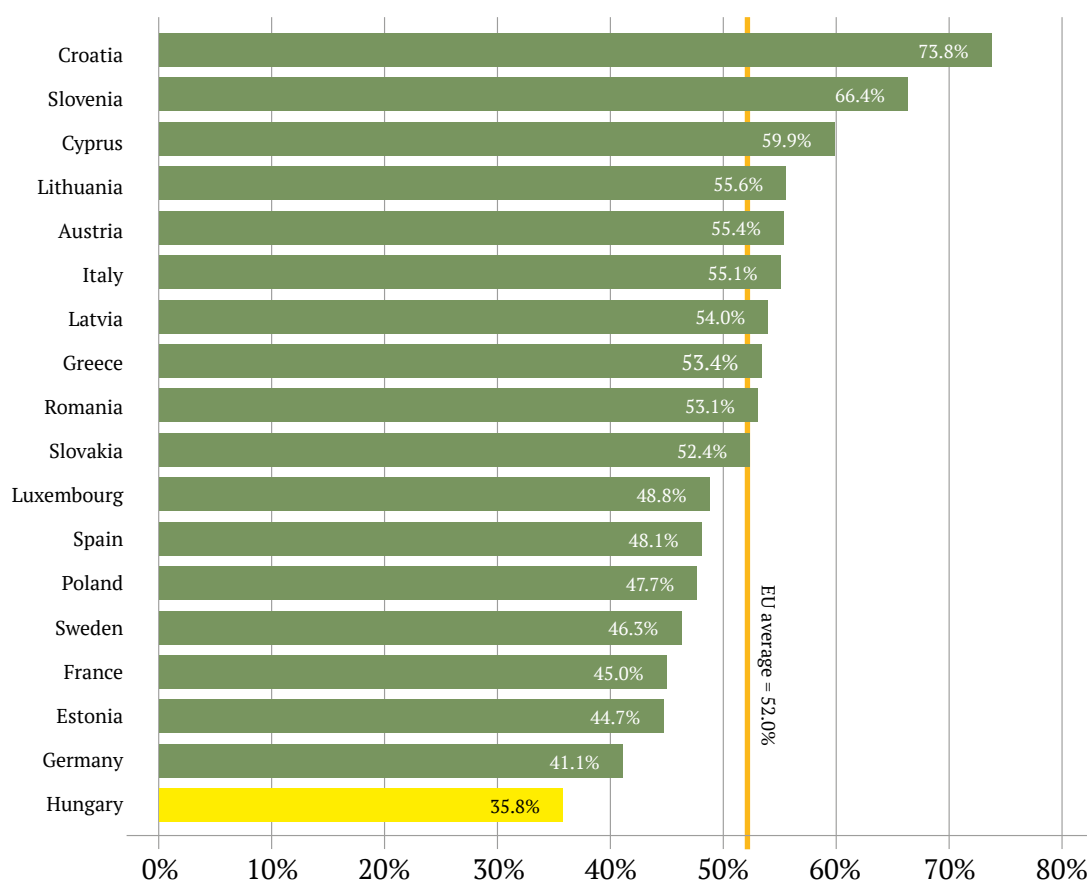


Entrepreneurship education

Entrepreneurship education is one of the focus areas of BUEB Budapest LAB's research portfolio, so we put special emphasis on presenting the current state of entrepreneurship education and exploring the factors that influence it. Because of the common regulatory background, the Hungarian results are presented throughout the study in comparison with those of the European Union, with a few exceptions indicated.

Although between 2021 and 2023, the share of the Hungarian population aged 18-64 who self-identified as having the knowledge needed to start a business increased slowly but steadily from 36 percent to 38.3 percent, this value fell to 35.8 percent in 2024 (Figure 5), which means that **we can speak of fluctuations within a narrow range** instead of a slowly improving trend. This gap is particularly striking in comparison with the EU's GEM countries, as while in 2022 Hungarian respondents were almost as likely as their German counterparts to say that they felt prepared to start a business, by 2024 Hungary had the lowest figure in the EU, 5.3 percentage points behind Germany. It is also noteworthy that Slovakia has caught up from a very low base (33.4%) to the EU average (52.0%) between 2021 and 2024.

Figure 5. International comparison – Ratio of people aged 18–64 with sufficient knowledge, skills and experience to start a business

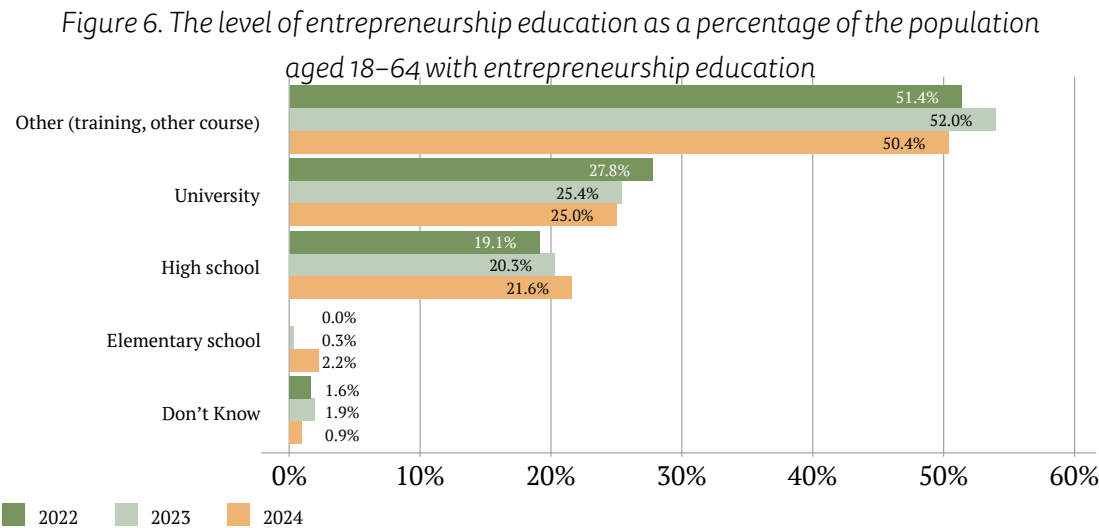


As in 2023, the highest proportions of people in the EU Member States surveyed think they have the skills needed to start a business (73.8%, 66.4% and 59.9% respectively), except for Germany and Hungary, where at least half of the population responded similarly.

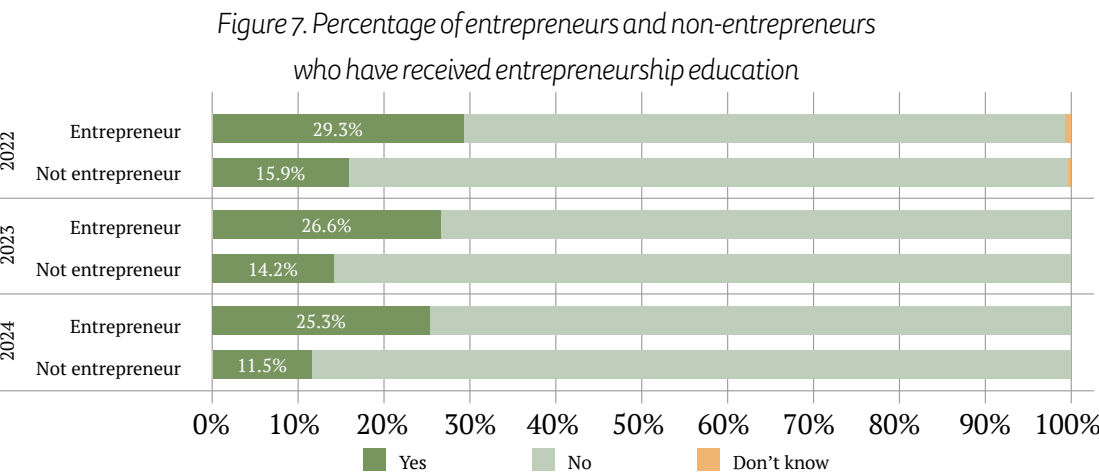
Since 2022, the GEM Hungary national team has added some entrepreneurship education-related extra questions to the GEM questionnaire in order to better understand the situation in Hungary and explain the results more precisely.

13.2 percent of the Hungarian adult population has received some form of education that motivates them to become entrepreneurs, a decreasing trend compared to 18.1 percent in 2022 and 16.2 percent in 2023. This result is also surprising as younger generations have usually already received some form of economic, financial and entrepreneurial education in public or higher education, so an increasing share of those participated in entrepreneurship education would have been expected as younger generations grow up and the oldest generations retire. However, there is still no significant change in the fact that the majority (50.4%) acquired this knowledge through training or

courses outside the school system. In addition, just under a quarter (25.0%) of those who received entrepreneurship education received it at university and a fifth (21.6%) at secondary school. The role of primary school in acquiring the knowledge needed for entrepreneurship remained negligible in the years under review (Figure 6).



Entrepreneurs were more likely to participate in training or courses preparing or motivating them for entrepreneurship than non-entrepreneurs (Figure 7) - in 2024, one in four entrepreneurs received such training, similar to 2023. Although the relationship's direction is unknown, and we cannot confidently claim that there is a causal link between the two factors, it is true for all three years that entrepreneurs were twice as likely as non-entrepreneurs to have participated in entrepreneurship education. It is probably equally valid that entrepreneurs train themselves to maintain, optimise and improve their operations, and that entrepreneurship education can stimulate the propensity of those who are receptive to it to start a business.

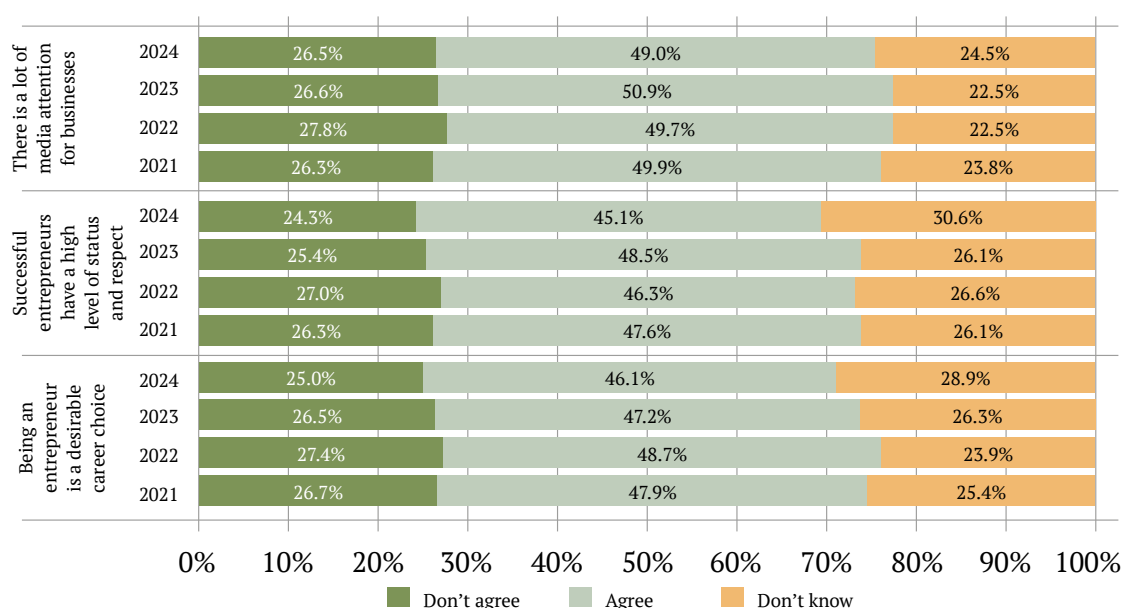


The attractiveness of entrepreneurship

The propensity to start a business can be influenced not only by the entrepreneurial climate but also by the general social perception of entrepreneurs. The GEM examines the perception of entrepreneurs through three questions (Figure 8), which assess (1) media attention on entrepreneurs, (2) the social status of successful entrepreneurs, and (3) entrepreneurship as a desirable career option. The assessment of entrepreneurship in Hungary is very stable over the years studied, with only negligible differences between the 2021 and 2024 results. Our results show that one in two people think that there is a lot of media attention for businesses (49.0%), that successful entrepreneurs have high status (45.1%) and that entrepreneurship is a desirable career option (46.1%). The proportion of those who disagree with the statements is significantly lower but also stable (26.5%, 24.3% and 26.0% respectively). The stability of the ratings is accompanied by a significant proportion of those who cannot express an opinion, comparable to those who disagree with the statements.

The perception of entrepreneurship among the Hungarian adult population remains positive, which may support entrepreneurial plans.

Figure 8. Evaluation of entrepreneurship

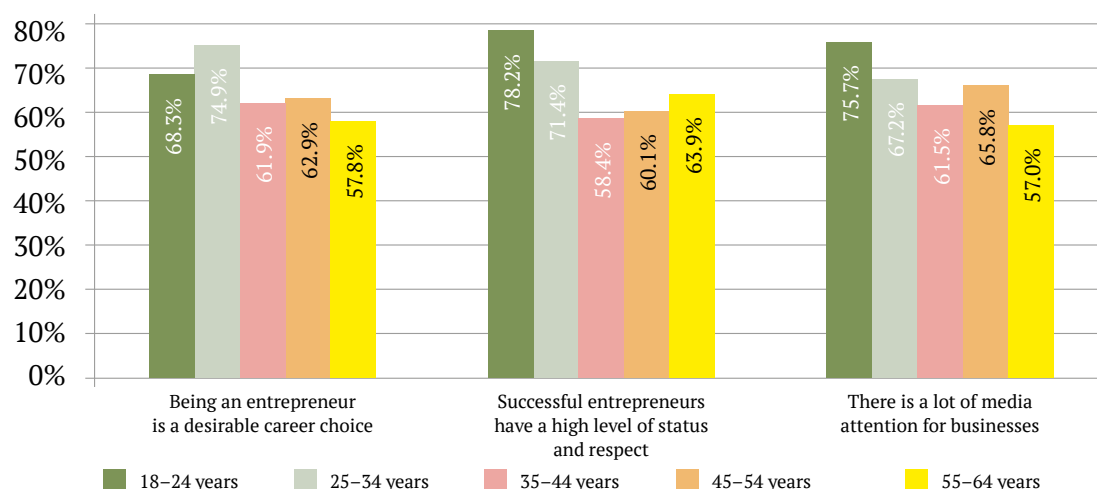


The perception of entrepreneurship is positive, especially among younger people.

There is also no significant shift in how different age groups value entrepreneurship. In 2024, a higher-than-average proportion of under 35s still agreed that being an entrepreneur is a desirable career option and that entrepreneurs have a high status (Figure 9). It remains the case that the responses of those older than 34 fall within a very narrow range of lower values for both aspects. This may be since a generation with different experiences of entrepreneurship - born during or after the regime change - has grown up. The proportion of people who think that successful entrepreneurs receive a lot of

media attention decreases with age - while three quarters of 18-24 year olds think so, this proportion is only 57.0 percent for 55-64 year olds.

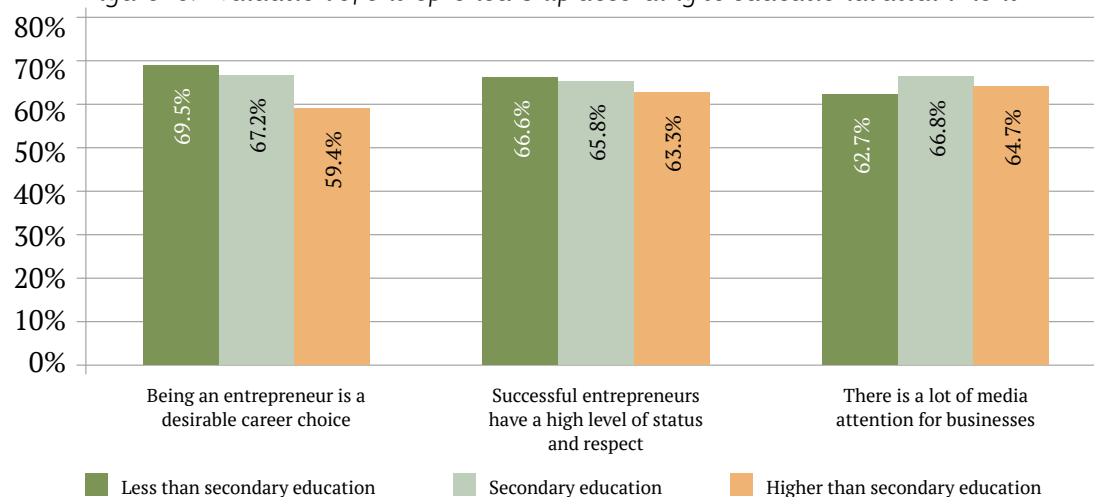
Figure 9. Evaluation of entrepreneurship by age



There is also no change from previous years' results regarding the less desirable career path for those with higher education. While seven in ten individuals with secondary education or less think so, only six in ten with tertiary education do (Figure 10). This may be explained by the tendency in developed market economies to achieve high status and income as a worker with higher education, without the risk of entrepreneurship. Consequently, there is an inverse relationship between entrepreneurial activity and economic development.

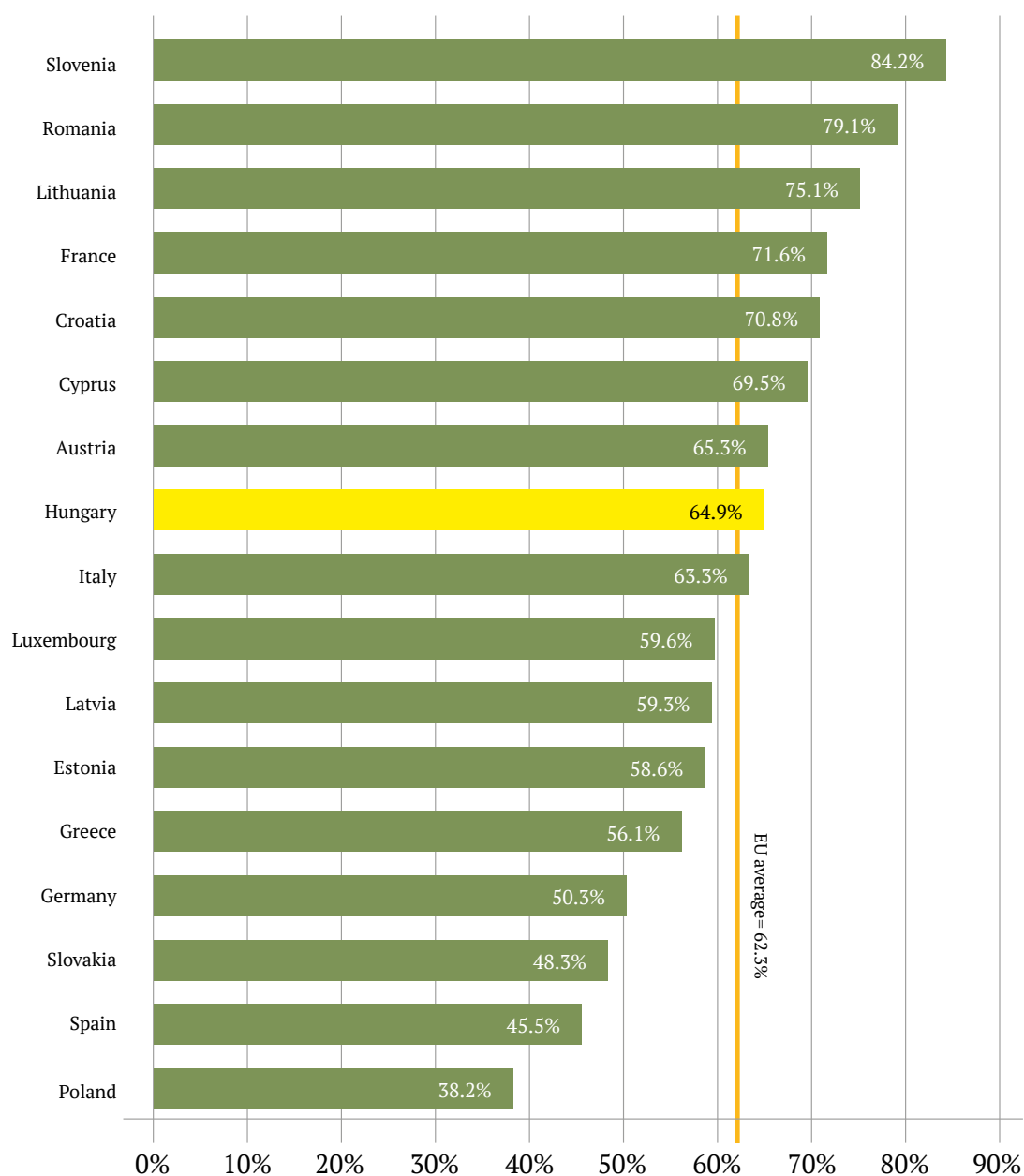
Although there are some differences in the social status of successful entrepreneurs and the perception of high media attention on entrepreneurs between different levels of education, these are not considered significant differences based on statistical tests. The latter is interesting because, in 2023, significantly higher proportions of highly educated people perceived entrepreneurs as receiving a lot of media attention; however, our latest results show that this is no longer the case.

Figure 10. Evaluation of entrepreneurship according to educational attainment



In international comparison, the rating of media attention in Hungary is in line with the EU average (62.3%). However, it is interesting to note that there is a dramatic difference between countries (Figure 11), with both the lowest (Poland, 38.2%) and the highest (Slovenia, 84.2%) ratings coming from the post-socialist region, but also a significant difference between the old EU member states (see Figure 11). This phenomenon may suggest that unique, country-specific factors mostly influence the evaluation of media attention on successful entrepreneurs.

Figure 11. Evaluating entrepreneurship, international comparison – there is lots of media attention for entrepreneurship





Bernadett Engler Dancsné

OTP Bank – Head of the Micro- and MSE segment

The OTP Group is present in 11 countries of the Central and Eastern European region and Central Asia, operating more than 1200 branches and providing universal financial services to 17 million customers. OTP Bank has established a leading position in Slovenia, Serbia, Montenegro, Bulgaria and Hungary. 70% of the Group's revenues now come from abroad, but domestic operations remain extremely important, with more than 2.200 points of contact across the country and more than 2 million users of the bank's applications.

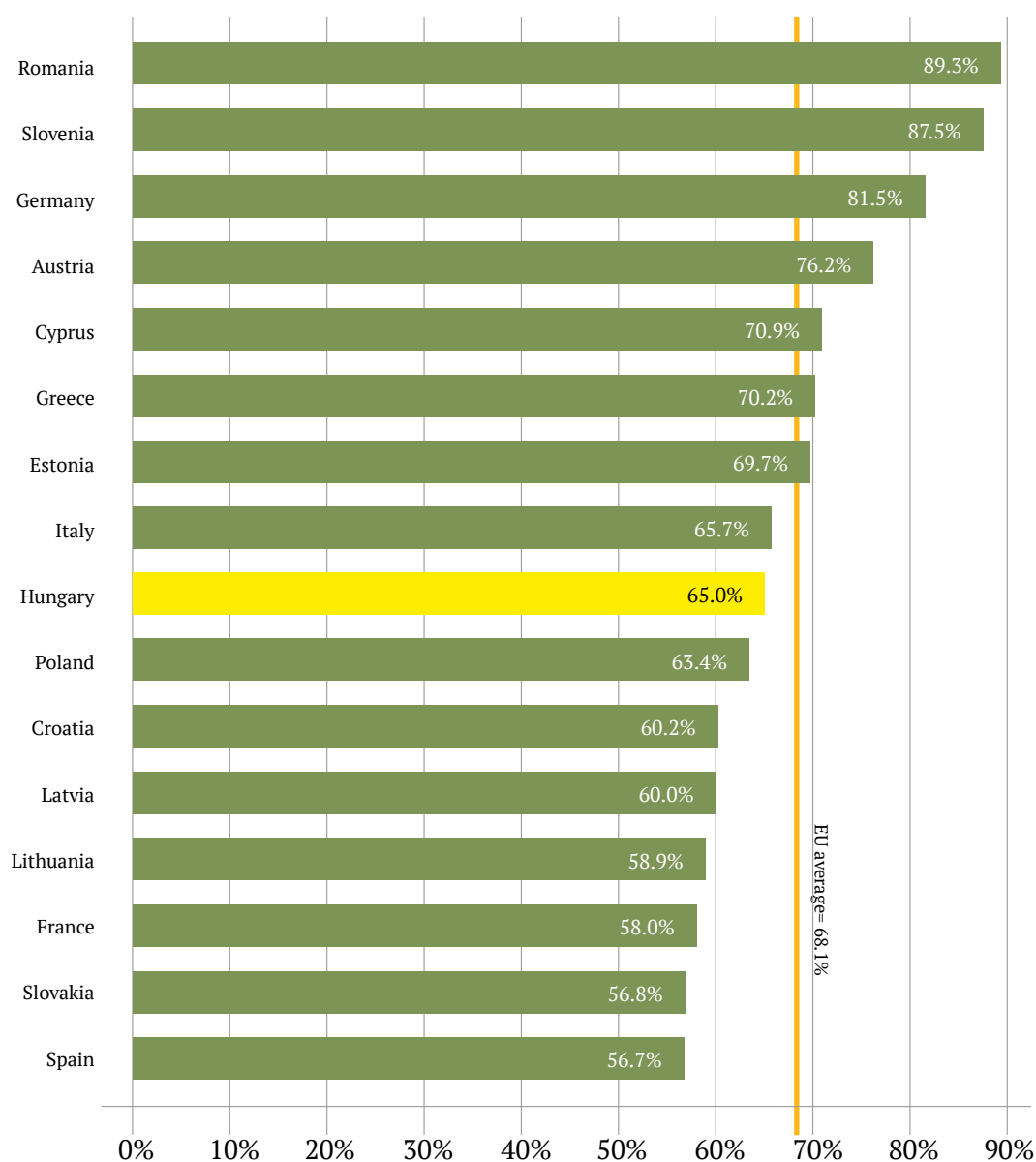
There are differences among SMEs operating in the Central and Eastern European region, mainly stemming from variations in the economic environment, regulatory framework, historical traditions, and entrepreneurial culture. In Hungary, there is a strong state presence in terms of SMEs' heavy reliance on state subsidies and tenders. The level of digitalisation is increasing, but digital maturity is below the regional average. The majority of SMEs have limited export orientation and tend to be more risk-averse in the long term, which affects investment, innovation, and growth. All of this can reduce competitiveness and, in the longer term, create operational and efficiency constraints.

In this environment, the company's network of relationships is becoming more valuable, with the account-holding bank as a strategic business partner. Besides managing current accounts, the bank provides daily financial and financial planning advice, including guidance on navigating through grant opportunities, it offers loans when required for day-to-day liquidity or growth and supports market expansion with foreign trade consulting and currency services.

Businesses expect tailored financial solutions and a personal contact person who understands their business model. Often, this collaborative thinking leads to new innovations on the banking side as well: today, a company's entire operation can be covered with our digital services, and in the future, development may shift toward financial modelling with artificial intelligence, risk assessment based on real business data, and banking functions integrated into the businesses' own platforms. The bank of the future will act as a forward-thinking partner, helping companies grow consciously, safely, and dynamically – this is the contribution we aim to make.

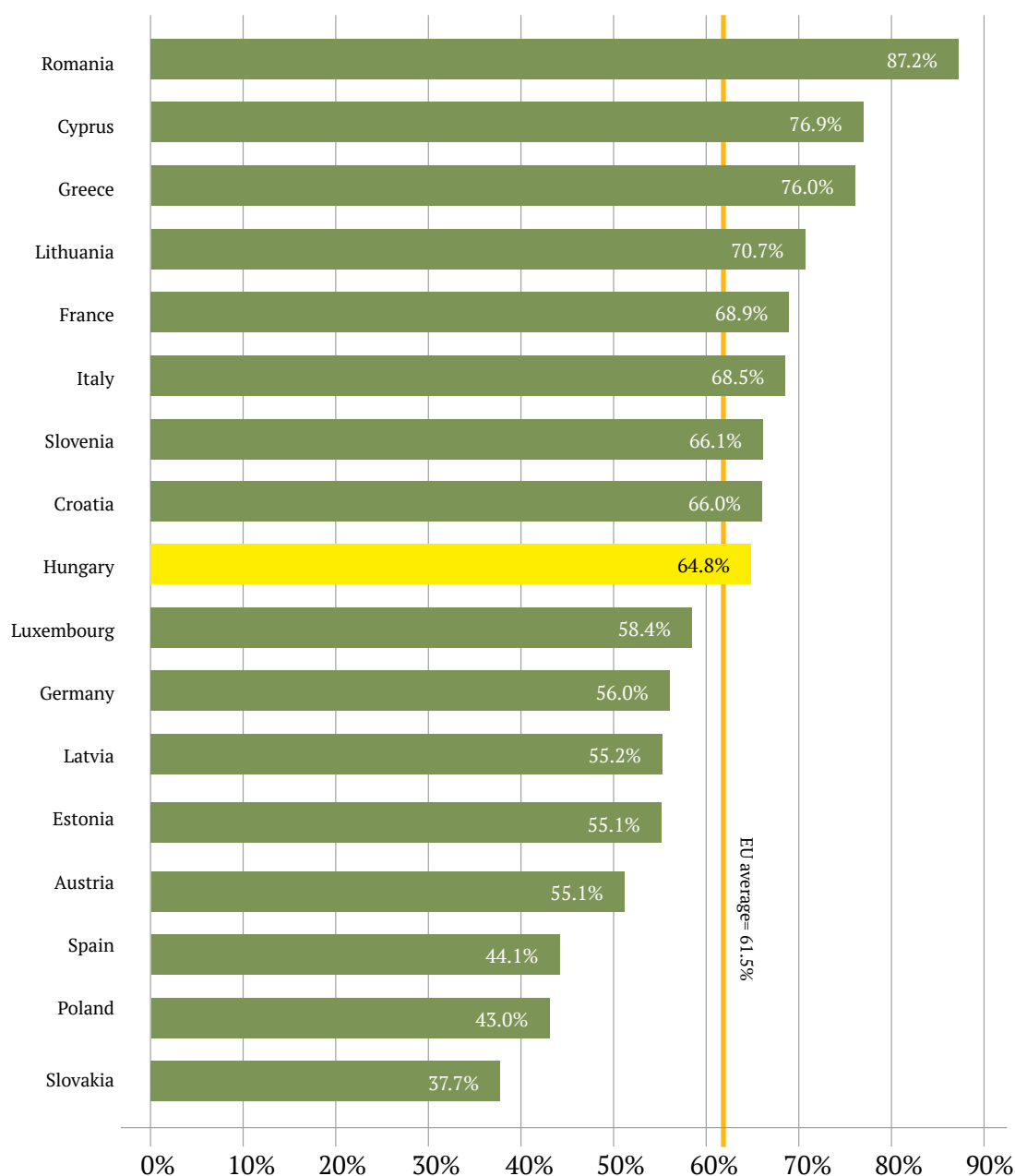
The social perception of successful entrepreneurs varies over a much smaller range (Figure 12). Among EU Member States, the social status of successful entrepreneurs is rated lowest in Spain, Slovakia and France (56.7%, 56.8% and 58% respectively), while it is highest in Romania and Slovenia (89.3% and 87.5% respectively). It is important to note that in almost all cases, there was a positive shift of several percentage points compared to 2023, but the countries at the top and bottom of the list remained the same, except for Slovakia. While in Croatia the perception of successful entrepreneurs has improved, in Slovakia it has slightly decreased. Hungary's 65.0 percentage is essentially the same, slightly below both the 2023 comparable (65.6%) and the 2024 EU average (68.1%).

Figure 12. Evaluating entrepreneurship, international comparison – people attach high status to successful entrepreneurs

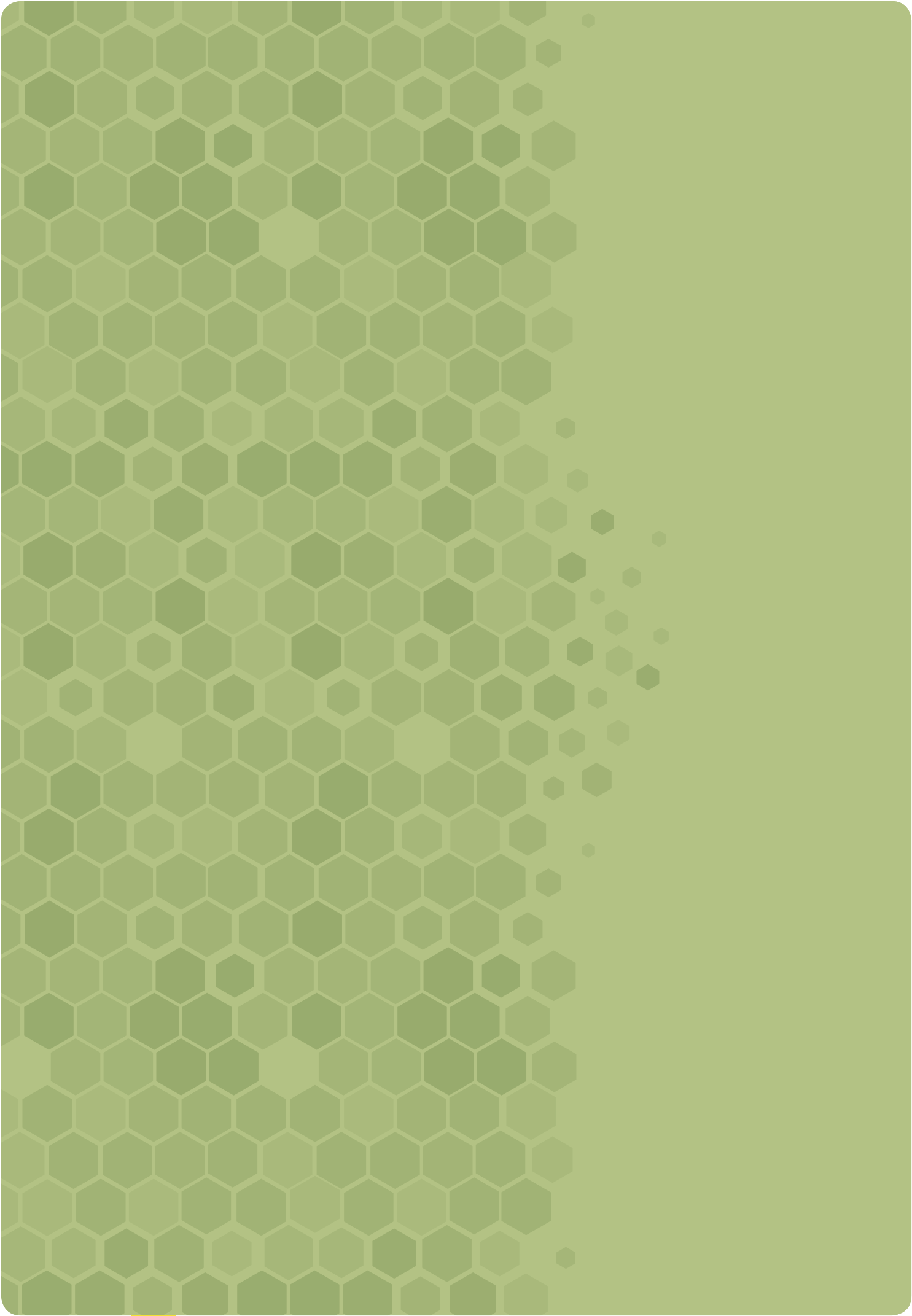


The perception of entrepreneurship as a career option received extreme ratings similar to the media attention ratings (Figure 13). Slovakia, Poland and Spain are at the bottom of the list in this respect (37.7, 43.0 and 44.1% respectively). In comparison, Romania has the highest percentage of people agreeing with this statement (87.2%). Hungary is in the middle of the ranking, with a slightly higher figure than the EU average (61.5%).

Figure 13. Evaluating entrepreneurship, international comparison – people consider starting business as good career choice



Overall, the perception of entrepreneurship in Hungary is close to the global and European averages, with almost one in two people rating it positively - although a strikingly high number of people do not have an opinion on the matter. The positive perception is stronger than average among young people.



CHARACTERISTICS OF ENTREPRENEURS

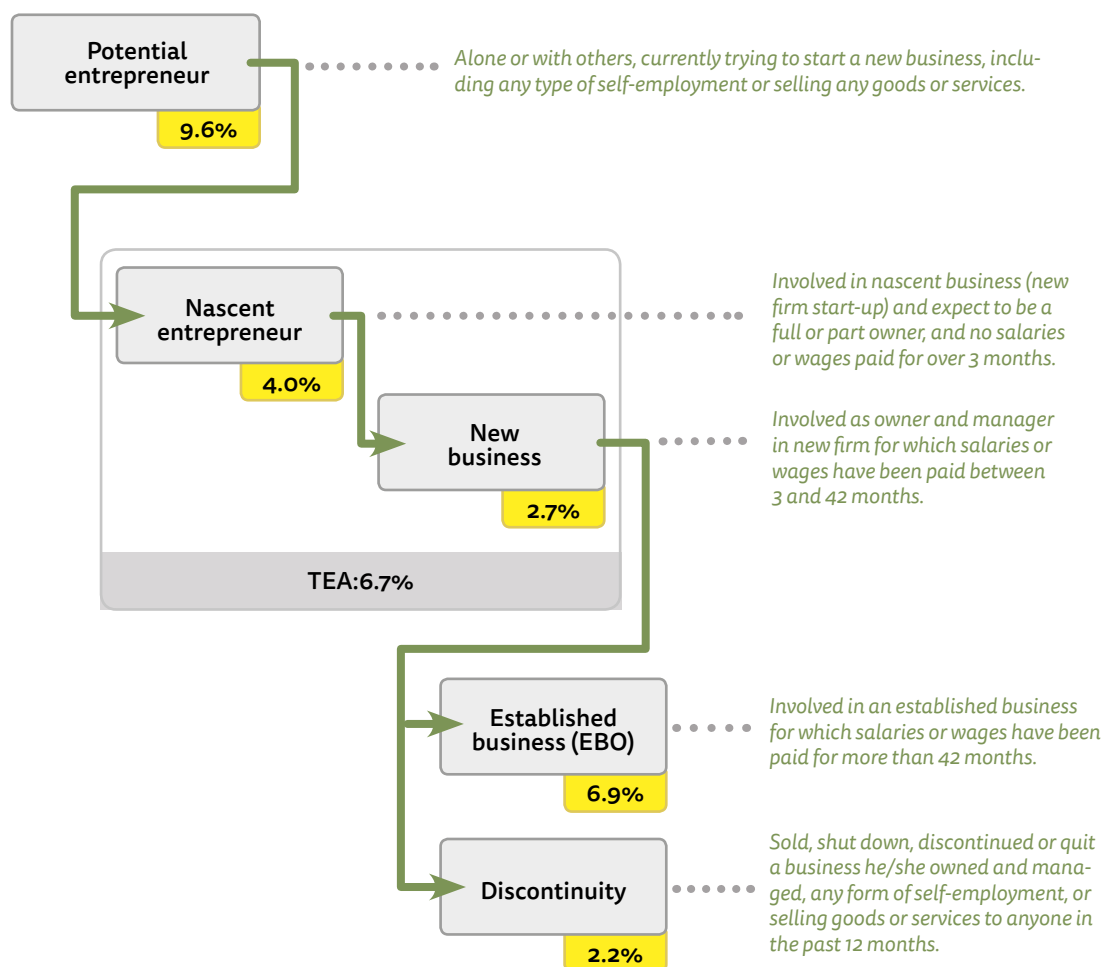
The GEM survey data provides an opportunity to estimate the proportion of entrepreneurial activity among different population segments, compare it internationally, and analyse trends over time.

In 2024, the entrepreneurial activity of the Hungarian working-age population declined significantly compared to previous years (Figure 14). Total early-stage Entrepreneurial Activity (TEA) is 6.7 percent, a significant 3.2 percentage point decline from 9.9 percent in 2023. The decline is particularly striking because between 2021 and 2023, this value fluctuated within an extremely narrow range of 9.7 to 9.9 percent. Within early-stage entrepreneurial activity, the share of nascent entrepreneurs that have been in operation for only 3 months or less fell slightly less, from 5.5 to 4.0 percent, while the share of new businesses that have been able to pay wages for between 3 and 42 months fell by a relatively larger amount, from 4.4 to 2.7 percent. Notably, however, the share of the population aged 18-64 planning to start a business (including self-employment) in the next three years fell by only 7.5 percent, from 10.4 to 9.6 percent. This result suggests that, **while the share of enterprises that exist only in the idea stage has somewhat declined, actual business formation has largely failed to materialise, and the share of enterprises that are less than 3 months old has increased dramatically.**

THE GEM METHODOLOGY categorises the entrepreneurial process into three phases. It defines nascent enterprises as initiatives or existing enterprises in the process of being set up where wages and salaries have been paid for a maximum of three months. New enterprises, on the other hand, have been paying wages and salaries for a minimum of three months and a maximum of 42 months (3.5 years). The GEM classifies enterprises that have been operating for over 42 months (3.5 years) with consistent wage and salary payments as established enterprises.

The GEM defines the business activity described by nascent and new as early stage entrepreneurial activity, which is measured by the Total early-stage Entrepreneurial Activity (TEA) indicator.

Figure 14. Indicators of entrepreneurial activity in Hungary



The share of established businesses with at least 3.5 years of stable wages has fallen slightly, returning to its 2022 low of 6.9 percent after a correction in 2023 (7.4%).

A positive result is that the share of those who discontinued their business in the 12 months before the survey has normalised at 2.2 percent, the level between 2021 and 2023, after a spike in 2023 (3.5%).

The sharp drop in early-stage entrepreneurial activity, the slight decline in the number of people intending to start a business and the drop in the share of those who stop their entrepreneurial activity to the level of 2021-2023 may suggest that, due to economic turbulence and negative expectations, significantly fewer planned start-ups are launched than in previous years. This could also cause structural economic problems in the next few years, as a higher share of these firms are at least locally engaged in new products/services and apply new processes. Although the lower share of start-ups has not yet significantly impacted the share of established businesses, it is crucial to monitor the trend continuously.



Nóra Nardai

Co-owner, Liliputi Love

Liliputi Love is a market leader in baby carriers and soft-soled shoes. Their products are manufactured at their factory in Szombathely and sold in more than 20 countries.

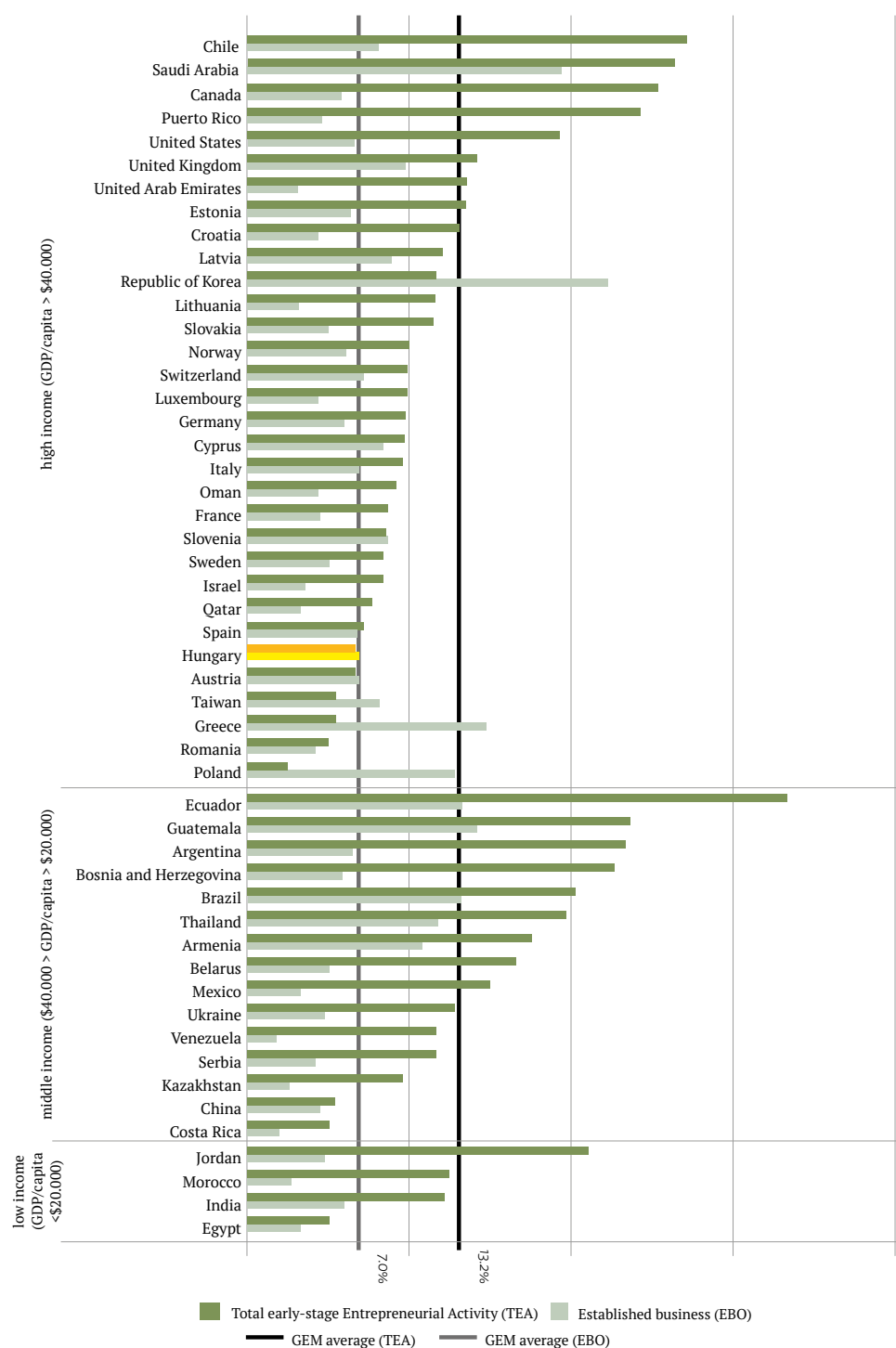
In the first half of my career, I worked in a multinational environment, but I was less and less able to fight for goals that didn't hold real meaning for me. It became important that the energy I invest contributes something meaningful to the world. A few fortunate coincidences led me to become an entrepreneur together with my husband. A key daily inspiration is that, as entrepreneurs, we get to decide how we manage our time — while working towards goals that matter to us personally.

Today, we sell our products in over 20 countries, and strengthening our international presence has become increasingly important. This is partly due to the fact that domestic retail consumption has fallen significantly and the decline in birth rates has reduced our domestic target audience by a third. It has become clear that finding new markets is essential for our long-term survival and growth.

In recent years, the retail landscape has been radically transformed: previously, our international partners were small local resellers, but today the sector is dominated by Temu and large online marketplaces. Many of our resellers could not keep up; the market simply could not handle the double margin that comes with the classic distribution model. This has led us to undergo a complete structural transformation ourselves: we are striving to launch our own webshops in the neighbouring countries and will soon be present on the major online platforms as well. Our main goal is to establish a few key markets within the EU where we can reach customers directly, build our brand in a sustainable way and with expert support.

As early-stage and established entrepreneurship are two of the most important indicators of the GEM, they are presented not only in comparison with EU countries, but also in global (Figure 15) and European (Figure 16) comparisons.

Figure 15. International comparison of total early-stage entrepreneurial activity and established business activity

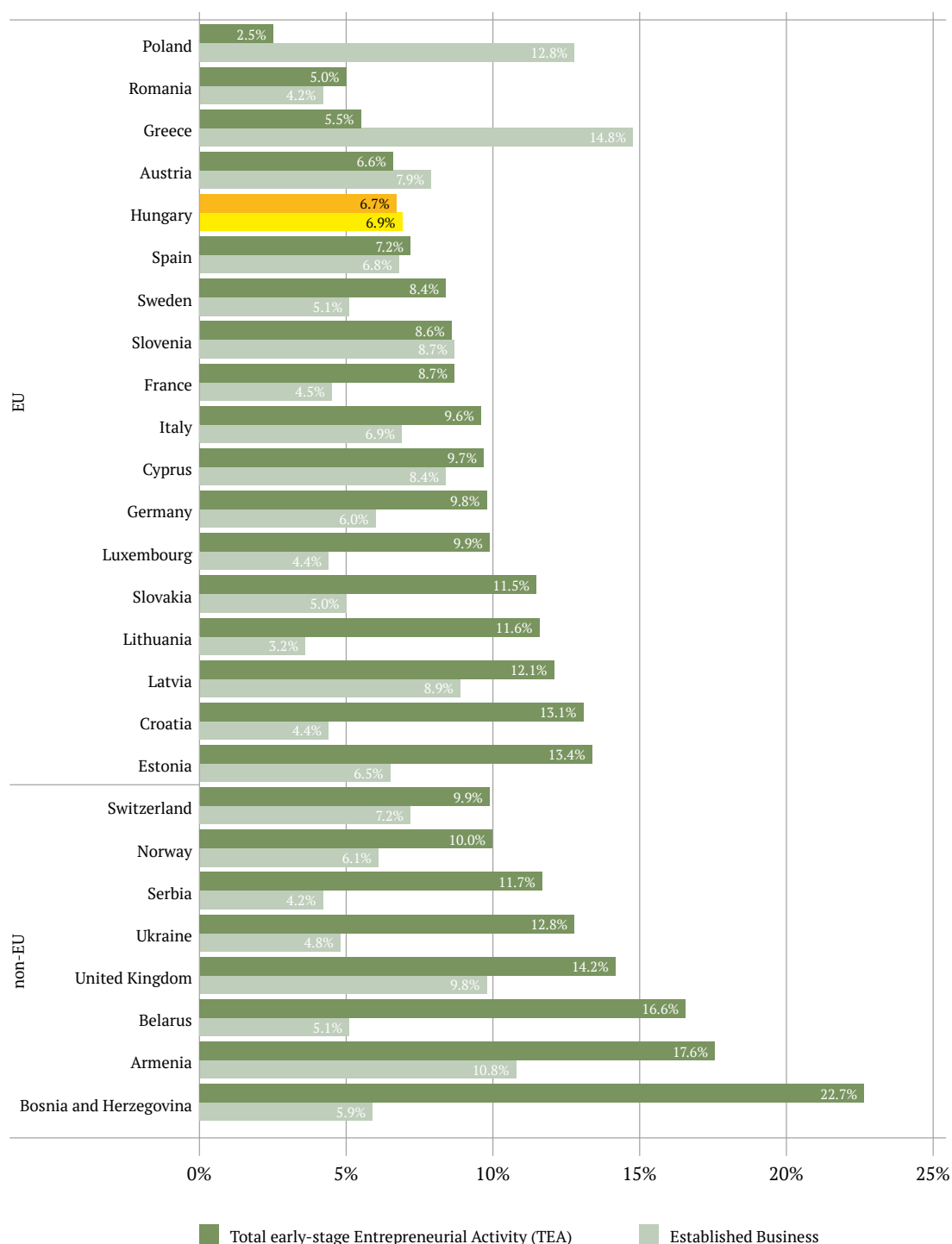


Countries are grouped in ascending order of early stage entrepreneurial activity (TEA) and economic development (GDP per capita)

Globally, Hungary ranks in the middle of the bottom third of high-income GEM countries in terms of early-stage enterprises, slightly behind the figures of previous years, and in the bottom third in terms of established enterprises (Figure 15). **As a result of the decline in the share of early-stage enterprises (6.7%) in 2024, the Hungarian figure is significantly below both the average of the 51 GEM countries (13.2%) and the average of the high-income countries (11.6%). The share of established enterprises in Hungary (6.9%) is practically the same as the average of the GEM countries (7.0%) and slightly below the 7.4 percent of the developed countries.**

It is typical that European countries, especially in the EU, do not have the extremely high levels of entrepreneurial activity that some developed countries (e.g. Chile, Saudi Arabia) or several middle-income countries (e.g. Ecuador, Guatemala) have, which may be explained by a more stable economic environment and the availability of a large number of jobs with higher added value and predictable livelihoods (Figure 16). In a European context, the proportion of early-stage enterprises in Hungary declined significantly in 2024, placing the country among the lowest performers by the top of the last quarter. Ranking 14th among the 18 EU Member States means that early-stage entrepreneurial activity is lower than in Hungary only in Poland (2.5%), which usually has an extremely low rate, as well as in Romania (5.0%), Greece (5.5%) and Austria (6.6%). At the other end of the scale, the three Baltic states (Estonia - 13.4%, Latvia - 12.1%, Lithuania - 11.6%) are joined by Croatia (13.1%) and Slovakia (11.5%), all with rates above the EU average (8.9%). Despite the decline, the share of established businesses (6.9%) remains in line with the EU average (7.0%), placing it at the bottom third of the European and EU rankings.

Figure 16. Proportion of total early-stage entrepreneurial activity and established business activity in international comparison – Europe



Entrepreneurs in percentage of 18-64 age population

The countries are grouped in ascending order of early-stage entrepreneurial activity (TEA) and EU membership.

There has been a significant change in the entrepreneurial structure, i.e., the share of early-stage enterprises (TEA) and the share of established enterprises (EB). While between 2021 and 2023, both indicators were in line with the global and European GEM averages, in 2024, the domestic TEA value fell to the bottom quartile, significantly behind the European and EU averages. Even with the smaller decline, the share of firms with a TEA aligns with the European and EU averages.

Demography

A deeper analysis of entrepreneurs' demographics can help justify targeted measures for specific enterprise groups, thus allowing an optimal allocation of available resources (Figure 17).

Based on four years of research, men's entrepreneurial activity is higher than women's for both early-stage and established businesses. In 2023 and 2024, women were half as likely as men to be entrepreneurs.

Two statistically significant differences between the entrepreneurial activity of the two genders can be found:

1. for early-stage businesses, in the 25-44 age group
2. in established businesses for people aged 45 and over.

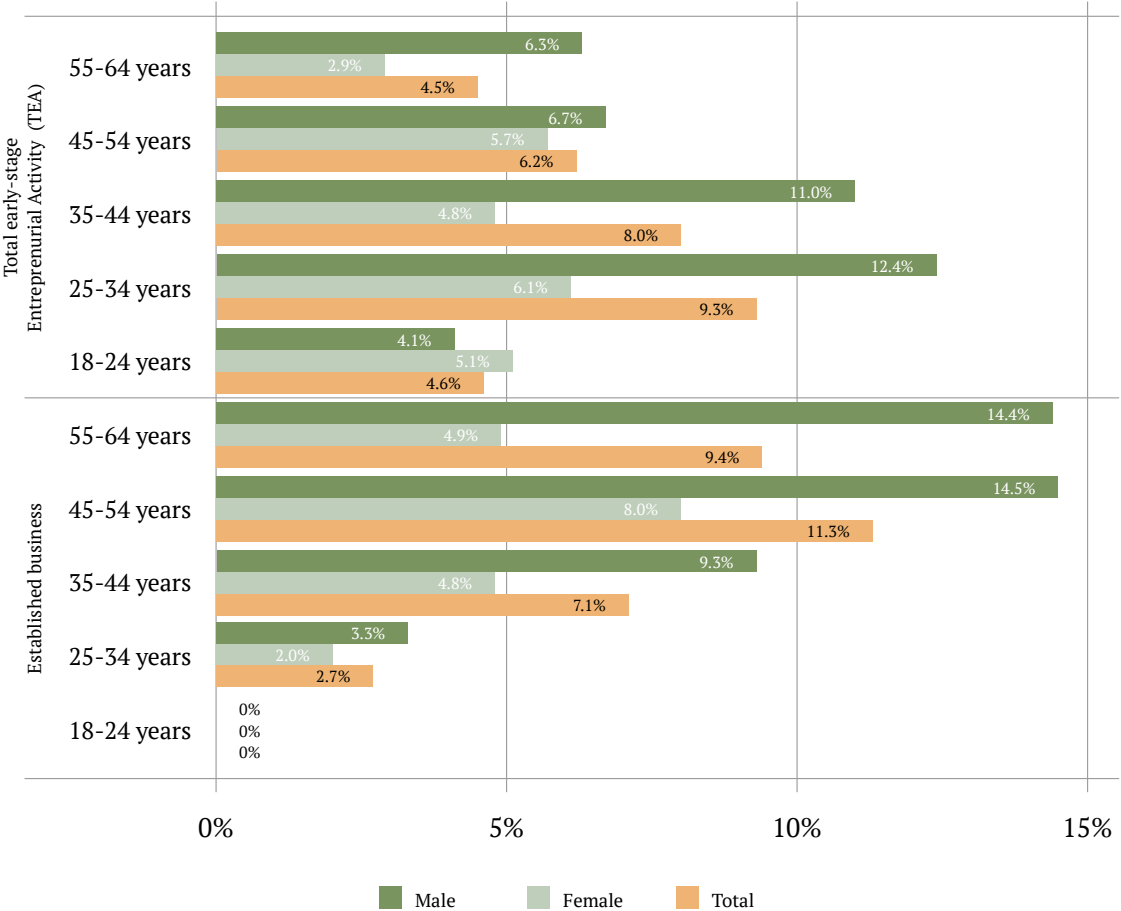
In other words, as in previous years, there appears to be a significant difference between men's and women's entrepreneurial activity, precisely in the age groups with the highest entrepreneurial activity.

Men tend to be more active than women, both at an early stage and as founders of established businesses. There are only a few exceptions to this from year to year - in 2024, early-stage businesses under 25 will be dominated by women. However, no major conclusion can be drawn from this, as these exceptions are usually based on a small sub-sample of items and the difference is not statistically significant. Also, the proportion of established businesses in this age group is negligible, which is explained by the fact that few people up to the age of 24 are naturally able to build up a stable business that has been in operation for 3.5 years.

The gender gap in entrepreneurial activity is substantial in the most active age group, which contributes to the persistence of the gender gap in entrepreneurial activity.

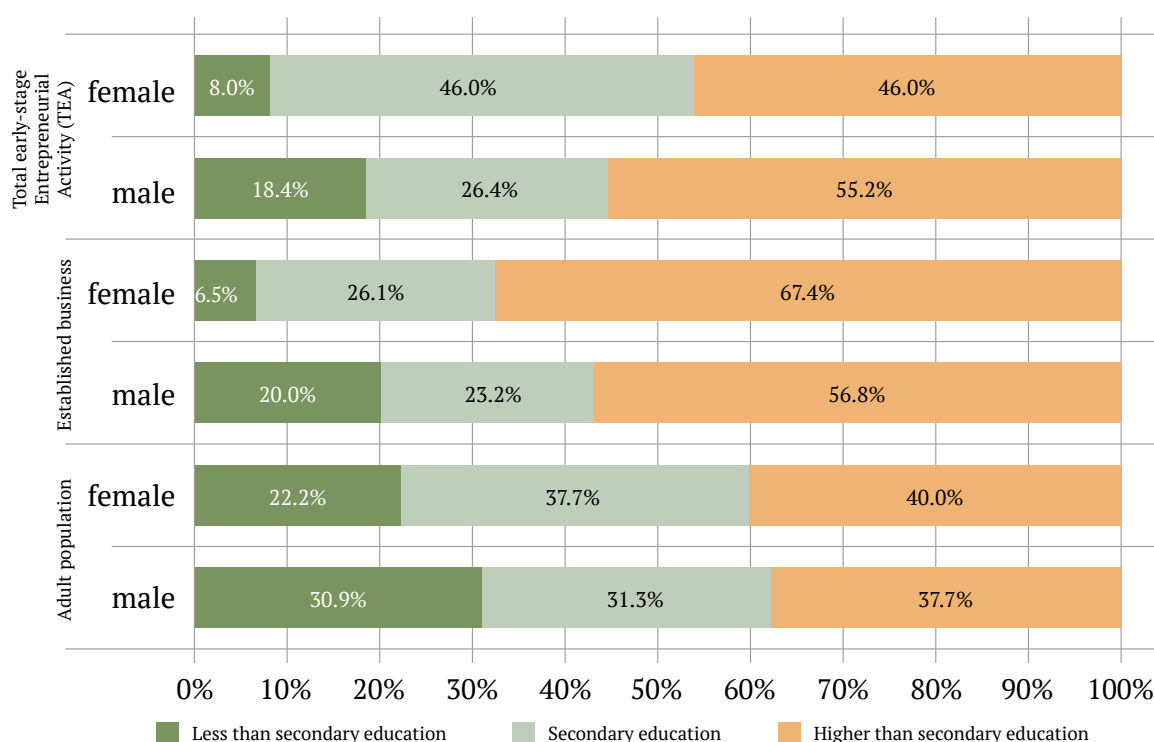
The persistence of the gender gap in entrepreneurship may be reinforced by the fact that early-stage entrepreneurial activity differs in the 25-44 age group, which is more active in early-stage business ventures, as the lack of female entrepreneurship reduces the supply of established firms. However, the result that under the age of 45, women and men are equally likely to run and own an established business shows that younger women’s businesses are just as viable as men’s.

Figure 17. Entrepreneurial activity according to gender and age group in the population aged 18–64



The GEM data show that the entrepreneurs’ educational attainment on average is higher than that of non-entrepreneurs, irrespective of gender and entrepreneurial stage (Figure 18). This result is statistically confirmed and in line with previous years’ results. While two fifths of women and men in the total sample have higher than secondary education, the corresponding figures for early-stage enterprises are 46.0 and 55.2 percent respectively, and for established enterprises 67.4 and 56.8 percent. However, it is important to stress that this does not imply a causal relationship between the two factors, i.e., higher education does not necessarily mean more intentions for starting a new venture.

Figure 18. Distribution of total early-stage entrepreneurial activity and established businesses and the adult population in the sample by educational attainment

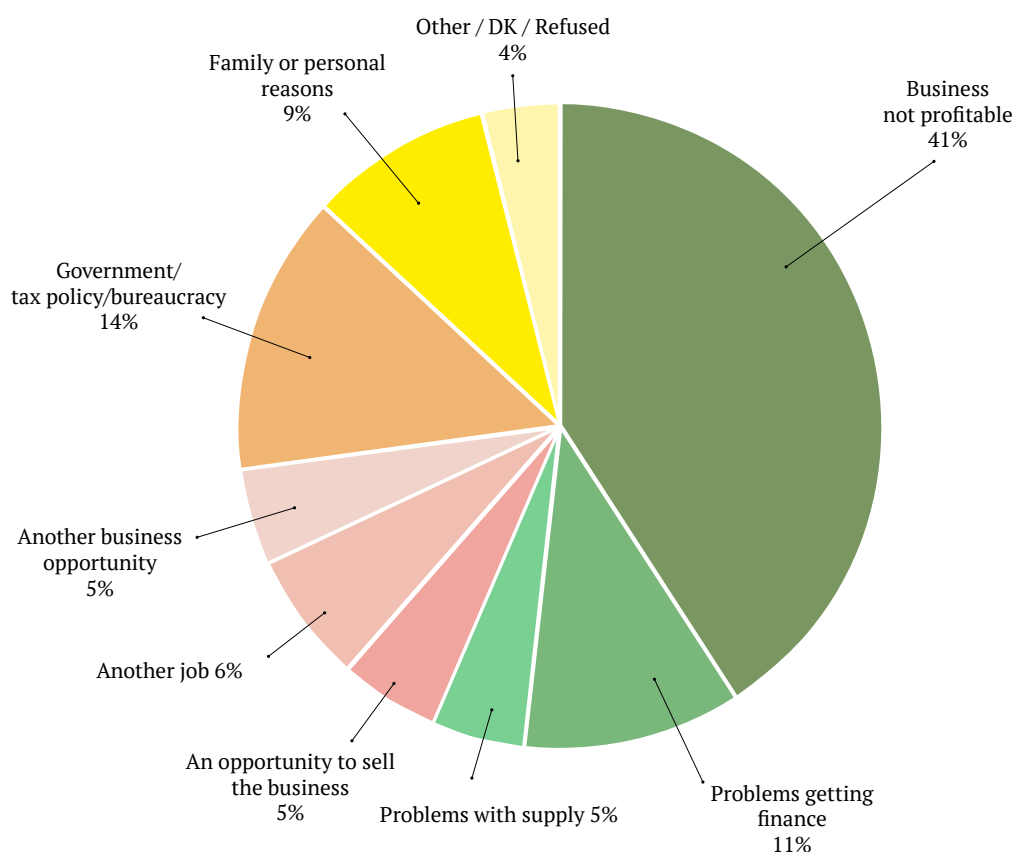


Exiting entrepreneurship

The share of the working-age population who have exited their business in the past 12 months has corrected to close to the levels of 2021 and 2022, at 2.2 percent, following the spike of 2023 (3.5%) (Figure 19). This suggests that the high business discontinuity rate experienced in the previous year was a one-off event due to the turbulent economic environment, rather than the start of a new, more negative trend.

The most common reason (56.4%) for exiting an enterprise was still a business reason (it was not profitable, facing financing or supply problems). In contrast, the second most common reason was a good exit opportunity (Another job or business opportunity, possibility to sell the business) with a share of 16.4 percent. Although the low numbers of items do not allow for too confident conclusions, the fact that only 14.1 percent of business closures were due to government, tax policy or bureaucracy-related reasons - not much more than personal reasons (9.1%) - indicates that the economic environment has stabilised, and that consolidation has begun. Also suggestive of a stabilising economic environment, almost one in four (22.5%) firms have continued to operate after the entrepreneur exited.

Figure 19. Reasons for the cessation of the enterprise



Motives

The GEM methodology puts a strong emphasis on a deeper understanding of the factors that influence entrepreneurship. Accordingly, in addition to assessing the general entrepreneurial climate, an important question is what motivated entrepreneurs to start their business.

The chance to make an impact has become the main entrepreneurial motivation, rather than financial security.

While the role of motives related to financial security among the motives for starting a business increased significantly in 2023 compared to 2021 and 2022, the data for 2024 show a correction. This indicates that the motivation to build great wealth or a very high income has decreased significantly, to levels close to those of 2021/2022. Four-fifths (38.9%) of early-stage entrepreneurs mentioned this as a motivation, essentially the same as 37.0 percent in 2022. For established businesses, while the figure of 24.1 percent in 2024 is a proportionally significant increase from 18.3 percent in 2021 and 19.2 percent in 2022, it is still drastically lower than the figure of 75.0 percent in 2023, resonating with declining concerns about the future. Also indicative of more positive expectations for the future, the necessity motive, while characterising half of entrepreneurs in both entrepreneurial phases, is at its lowest level not only relative to 2023 but since 2021. There is a significant gender gap in this respect, with seven out of ten early-stage businesses being run

by women, compared to only four male-owned businesses where the livelihood motive was mentioned. Interestingly, for established firms, this motivation was more likely to be male - but this difference is statistically not significant.

As a result of the correction, making a difference in the world has become the most common entrepreneurial motive. Two-thirds (68.6%) of early-stage entrepreneurs and three-fifths (58.7%) of established entrepreneurs say they (also) started their business to make a difference in the world. Continuing a family tradition was one of the least common entrepreneurial motivations throughout the study period. In 2024, a tenth of start-up entrepreneurs and a fifth of established entrepreneurs said that a family influence played a role in starting their business. It is worth pointing out that while the gender difference in the latter case is negligible, among early-stage entrepreneurs, women mentioned this motivation in extremely low proportions. Accordingly, the gender difference in this case can be confirmed by statistical methods.

Table 1. Motivations for starting an enterprise

	Total early-stage Entrepreneurial Activity (TEA)			Established Business (EB)		
	male	female	total	male	female	total
To make a difference in the world.	67.5%	70.4%	68.6%	62.4%	51.1%	58.7%
To build great wealth or a very high income.	34.6%	46.6%	38.9%	27.8%	16.7%	24.1%
To continue a family tradition.	16.9%	1.7%	11.4%	19.3%	21.0%	19.8%
To earn a living because jobs are scarce.	40.4%	70.1%	51.1%	57.0%	48.9%	54.4%

The most recent data suggest that the primary motivation for starting a business is to make a difference in the world. Securing a livelihood in the absence of (adequate) job opportunities remains an important but not prominent motivation for entrepreneurship. Although above the 2021-2022 level, but significantly lower than the 2023 outlier, the motivation of high wealth or very high income has stabilised, while continuing a family tradition continues to influence only a minority of entrepreneurs to start a business.

Employment

Entrepreneurs play a vital role in employment, which is why the GEM tracks their current and expected employment over the next five years (Table 2).

As in previous years, the majority of early-stage enterprises employ between 1 and 5 people (54.5%) and the proportion of entrepreneurs without employees remains significant (29.8%). The vast majority of established enterprises also employ five or fewer people - one in two employs between 1 and 5 people (49.1%), and a third (34.2%) only themselves. Although in earlier years we observed a higher share of established enterprises employing more than 5 people compared to early-stage enterprises, this has levelled off by 2024, with one in six entrepreneurs providing at least six jobs, regardless of the stage of entrepreneurship. This is driven by an increase in the share of start-ups with more employees - from 6.9 percent in 2021 and one in ten in 2022-2023 to 15.8 percent in 2024. While the slight increase in the employment effect can be seen as positive, this kind of contraction in the employment structure of the two phases of entrepreneurship means that even older businesses may not be able to grow in a way that represents a leap in size.

Expectations also show this. Nearly three-fifths (58.8%) of early-stage solopreneurs think they will not have any employees in five years, but three-quarters of those with between 1 and 5 employees also expect a stagnation in their employment. Interestingly, while 6.5 percent would return to self-employment, one in six expect an increase in employees. In contrast, the expectations of established businesses are much more consolidated: three quarters of those with 5 or fewer employees and three quarters with 20 or more employees, while 86.7 percent of those with between 6 and 19 employees expect stagnation in the five-year horizon. A concern for these firms is that in all cases, apart from the self-employed, there is a significant proportion of firms expecting a reduction in the number of employees.

Table 2. Distribution of total early-stage entrepreneurial activity and established businesses by the number of current and planned future employees

	Current number of jobs	Expected number of jobs				Total
		No job	1-5 jobs	6-19 jobs	20+ jobs	
Total early-stage Entrepreneurial Activity (TEA)	no job	58.8%	23.5%	11.8%	5.9%	29.8%
	1-5 jobs	6.5%	77.4%	6.5%	9.7%	54.4%
	6-19 jobs	0.0%	0.0%	42.9%	57.1%	12.3%
	20+ jobs	0.0%	0.0%	100.0%	0.0%	3.5%
	Total	21.1%	49.1%	15.8%	14.0%	100.0%
Established business	0 jobs	76.9%	17.9%	5.2%	0.0%	34.2%
	1-5 jobs	14.3%	76.8%	7.1%	1.8%	49.1%
	6-19 jobs	6.6%	6.7%	86.7%	0.0%	13.2%
	20+ jobs	25.0%	0.0%	0.0%	75.0%	3.5%
	Total	35.1%	44.7%	16.7%	3.5%	100.0%

Similarly to our 2023 results, nearly two-thirds (64.9%) of early-stage entrepreneurs and four-fifths (78.1%) of established businesses expect to employ similar numbers of people in five years. While early-stage businesses expect to increase the number of employees, this is only the case for established businesses that are currently self-employed. Overall, there are signs of stability and cautious growth, while the rather negative employment outlook for established businesses is a cause for some concern.

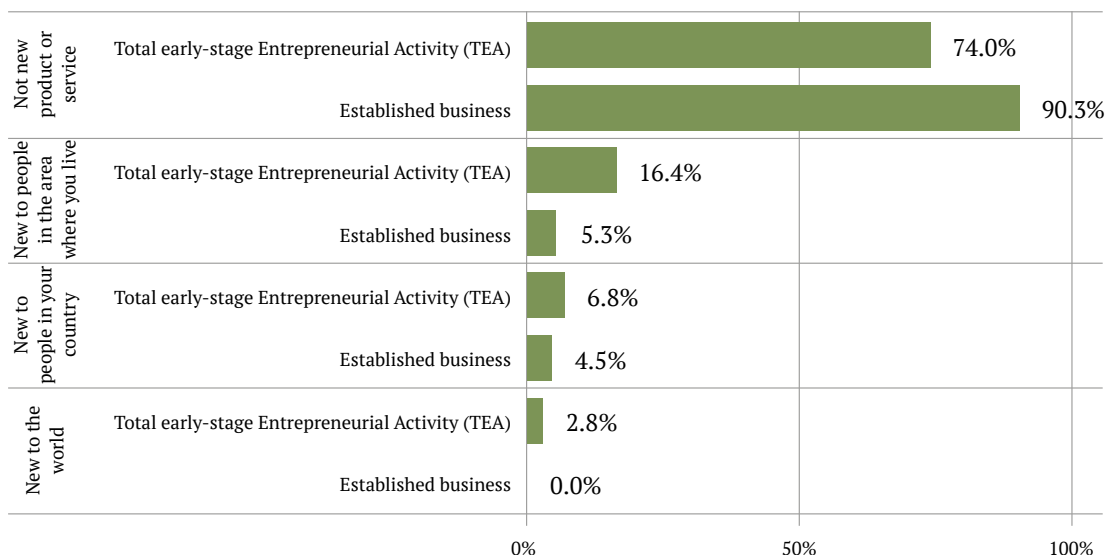
Innovation

The GEM looks at two aspects of entrepreneurial innovation: the product or service itself, and the novelty of the technology or process used to produce it. It is simple and easy to understand and can demonstrate entrepreneurs' ability to identify and exploit market opportunities.

Domestic entrepreneurs typically already market a product or service known in their place of residence; this is no different in the results of the surveys starting in 2021 (Figure 20). Although the proportion is somewhat lower for early-stage entrepreneurs, presumably not entirely independent of their entry into the market, three quarters (74.0%) already market an established product or service, compared to 90.3 percent for established businesses. Although the latter figure is considered slightly worse than the 2023 figure of 83.9 percent, there is no significant deviation from

the trend. It also means that the proportion of early-stage businesses that market at least a local novelty is negligible. In 2024, just under one in ten (9.6%) early-stage businesses marketed at least a national novelty, a relatively significant drop from 16.1 percent in 2023.

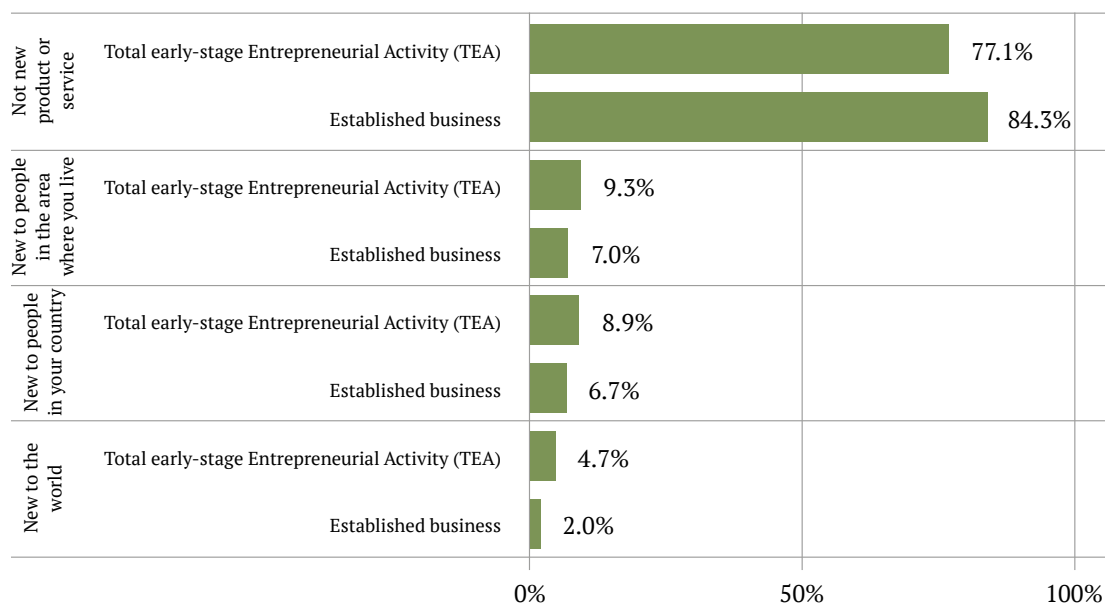
Figure 20. Percentage of enterprises with a product or service considered new



Firms continue to use conventional technologies or processes to produce the products or services they sell - three quarters of early-stage firms (77.1%). In contrast, more than four fifths of established firms (84.3%) do not use any new technologies or processes (Figure 21). This represents a slight deterioration from the 2023 results, similar to the product or service marketed. It also implies that only a small proportion of entrepreneurs have a process or technology considered novel at the local level. Somewhat more than a tenth (13.6%) of start-ups are at least novel at the national level, while nearly a tenth (8.7%) of established enterprises are.

An important addition is that enterprises that market new products or services more often use new technologies or processes to produce them. For both start-ups and established enterprises, a slightly weaker than medium correlation can be found between enterprises selling a new product or service and enterprises using a new technology or process in its production.

Figure 21. Percentage of enterprises using a new technology or process for their product or service



Most Hungarian entrepreneurs, regardless of the stage of their business, continue to sell an existing product or service familiar to the people where they live, or use a technology or process already known. Although there is a decrease compared to 2023 in the proportion of entrepreneurs marketing products/services or using new processes/technologies that are at least considered new to the place of residence, this is essentially a return to the levels observed in 2021 and 2022.

Digital challenges

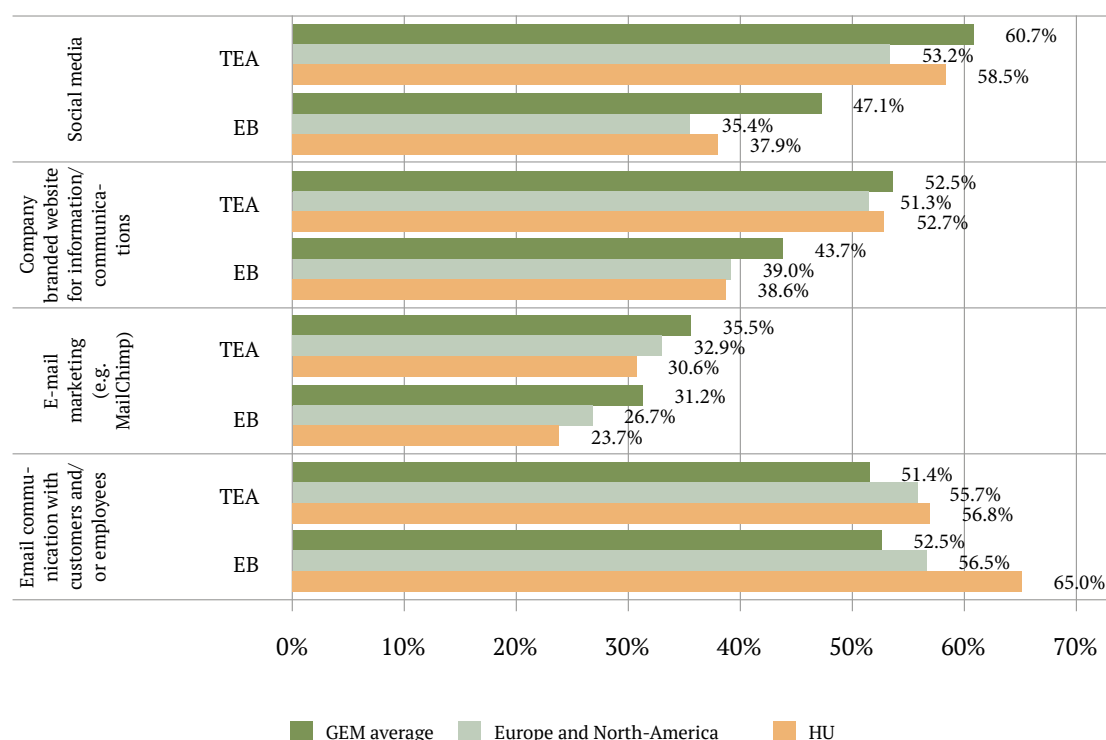
In response to the digitalisation challenges facing businesses, the GEM consortium has introduced a comprehensive set of questions in 2024 to understand better the adoption of digital solutions in businesses and the fears and perceptions of opportunity that AI presents. While this data is not a precise measure of businesses' digital maturity, it can provide a comprehensive view on the usage of digital solutions in businesses of different countries and compare them using a standard methodology. In the following, we compare the most essential characteristics of domestic entrepreneurs in relation to digitisation with the averages of the 50¹ countries participating in the GEM survey in 2024 and the 27 European and North American countries.

In general, early-stage businesses in the GEM countries tend to value social media presence more than established ones. Regardless of the stage of the business (Figure 22), Hungarian entrepreneurs rank social media presence as particularly important in a higher proportion than the European and North American averages, ranking 11th out of 27 countries for early-stage busi-

¹In the 2024 APS survey, 51 countries participated, but South Korea did not provide data for the digital challenges question block.

nesses and 9th for established businesses. The importance of running a website is also similar to the average in most developed countries, with a similar proportion of Hungarian early-stage entrepreneurs (52.72%) as in the US (51.66%) and France (49.78%). However, email marketing is considered important by just under a third of start-ups (30.63%) and a quarter of those who have been in business for 3.5 years or more (23.74%), slightly lower than the average in Europe and North America. However, e-mail communication with customers and/or employees is widespread, especially for established businesses.

Figure 22. Assessing the importance of some digital tools for everyday business operations



Hungarian entrepreneurs value the importance of particular digital technologies similarly to their European and North American counterparts. Established businesses rate email communication with customers/colleagues particularly highly, with nearly two-thirds (64.95%) thinking it will be (very) important, the fifth highest among the GEM countries surveyed. The most considerable negative difference to the average is in email marketing - nearly a third of early-stage entrepreneurs (30.63%) and a quarter of established businesses (23.74%) think it will be important, ranking 17th and 16th, respectively, out of 27 countries.

Artificial intelligence (AI) has received increased emphasis in the research due to its potentially revolutionary impact on business operations. As in European and North American countries, domestic entrepreneurs who participated in the GEM research and those in Europe and North America place little importance on AI.



Richárd Majsai

Managing Director, Palm Group Marketing Agency

Palm Group helps clients with high-converting marketing campaigns that combine strategy, design and data-driven decision making. „One stop shop” for marketing.

After the launch of ChatGPT, we started to consciously incorporate artificial intelligence (AI) into our operations, initially experimentally. We tried AI-based text and image generation tools, tested different tools for process optimisation. We quickly saw the benefits they could give us: speed, creativity and deep analytics, in roughly a quarter of the time it would take to rely on human capacity.

We started experimenting because of my curiosity – I’ve always been attracted to new technology - but the breakthrough came when AI-enabled campaigns started performing noticeably better. Seeing the results, my team became open to new solutions, mainly because they saw that we weren’t trying to take away from their work, but to make it more efficient.

Currently, we use AI for creative content generation, ad copy optimization, analytics, customer profile analysis, as well as for project management and time management tasks. It also helps us to create the customer experience and deeply map the customer journey. We automate operational, repetitive tasks, allowing our colleagues to focus on more complex, creative work that requires human interaction. This is particularly important in a market where competition is not only about pricing, but also about speed and customer experience.

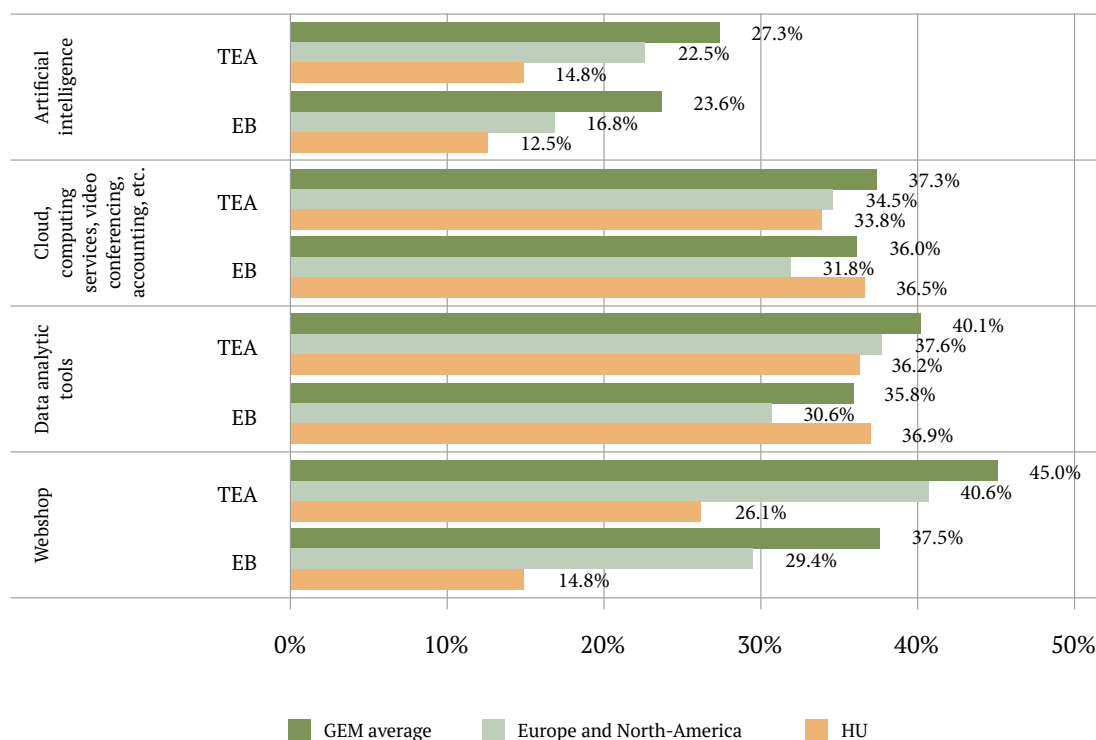
AI cannot replace human intuition, empathy or responsibility. The biggest risk, in my view, is not the technology itself, but if we start using it without control – but also if someone doesn’t use it at all. There was a time when everyone was afraid of credit cards and social media communication, but now it is a dominant part of our everyday lives. You can live without it, but it’s harder.

Only one fifth of domestic entrepreneurs think that AI will be very important for their business model and strategy in the near future.

This may be explained by the novelty of the technology and its applicability to different business activities. A fifth of domestic entrepreneurs (22.15% of early-stage entrepreneurs and 20.76 percent of established entrepreneurs) think that the application of AI will be very important for their business model and strategy in 3 years, which is in line with the average for European and North American countries (23.21% and 19.6% respectively). Typically, a higher proportion of early-stage entrepreneurs (TEA) think that AI will be very important in the future. This is illustrated by the fact that the highest figure for TEA is 39.40 percent (Germany) and for established enterprises (EB) 29.97 percent (Slovakia), although the latter is very concentrated (US - 29.64%, Cyprus - 29.40%, UK - 29.14%, Canada - 28.92%).

One third of Hungarian entrepreneurs consider the digitalisation of cloud services, video conferencing tools, work management software, accounting or customer relationship management important (Figure 23). This result aligns with the average and is slightly higher for established businesses. Data analytics tools also show a similar penetration, matching the European and North American mid-range for early-stage enterprises and ranking 6th for established enterprises. However, there is a lag for webshops. For early-stage businesses, 26.1 percent is good enough for 25th place out of 27 countries, just ahead of Norway (20.41%) and Poland (25.53%). Similarly, only 14.81 percent of established businesses rate running a webshop as important, significantly below the European and North American average (27.91%).

Figure 23. Assessing the importance of certain digital tools for your business model and strategy



Compared to the GEM countries in Europe and North America, Hungarian entrepreneurs are significantly less likely to value the importance of running a webshop or using artificial intelligence. Early-stage businesses are two-thirds of the average, while incumbents are half, ranking 25th among early-stage businesses and 26th among incumbents among the 27 countries surveyed. There is no lag, however, when considering data analytics tools and cloud services, video conferencing software, work management, accounting, and customer relationship management, especially for established businesses. While early-stage entrepreneurs are in line with the average for the countries surveyed, established businesses are even further ahead, in the bottom third.

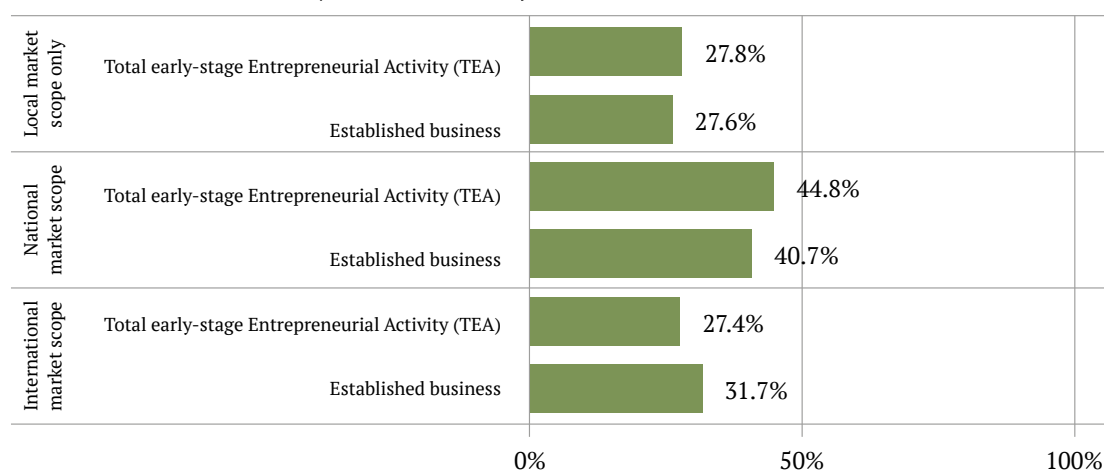
Locality and export activity

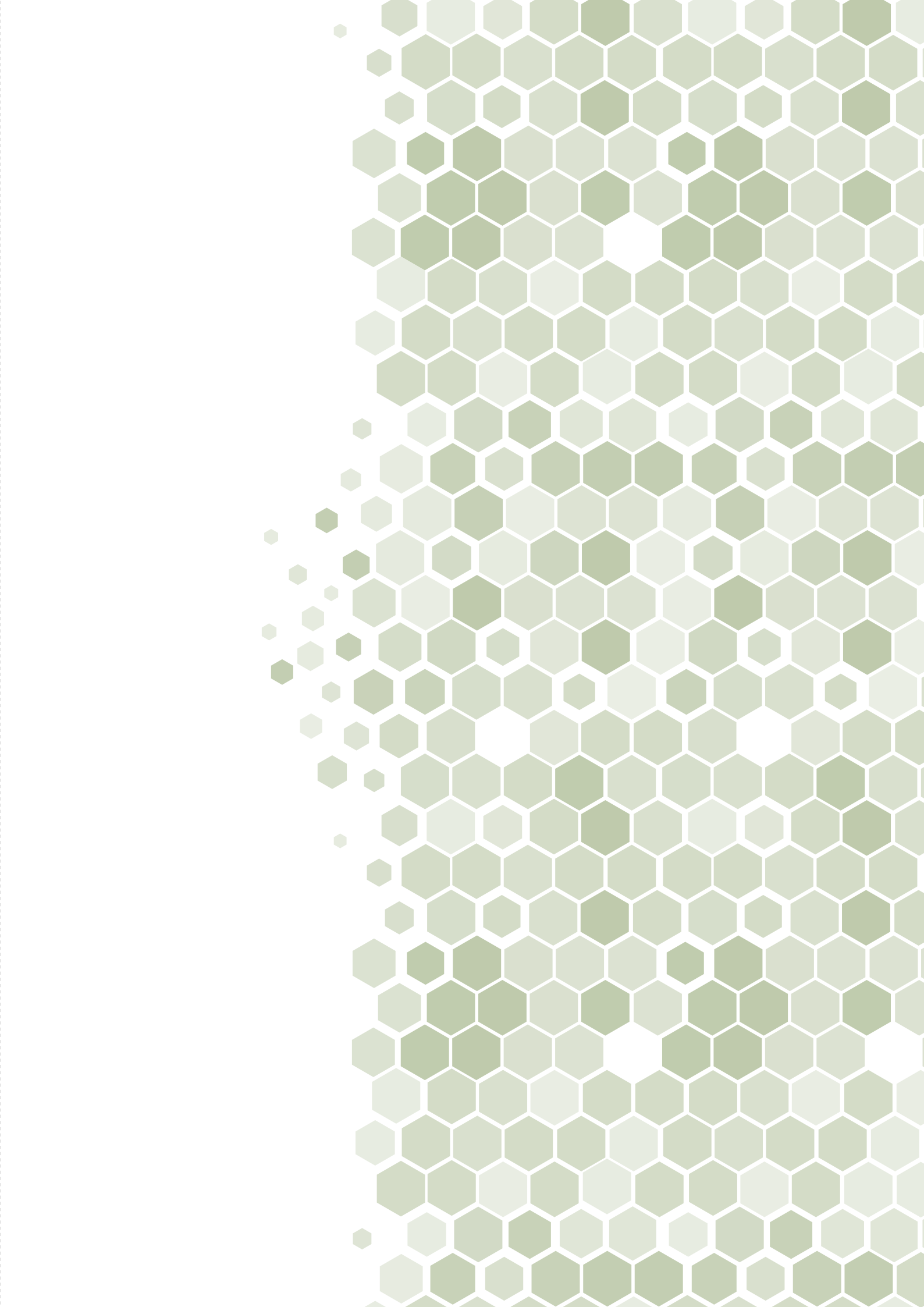
The GEM measures companies' market scope based on their activity and turnover in foreign markets. The importance of export activity is twofold. On the one hand, greater competition triggers rationalisation of operations and continuous product or service improvement. On the other hand, a larger market can mean higher revenues, increasing the economies of scale of the activity. However, it is important to note that some activities, such as personal services in particular, and some catering, are locally specific, so that a market scope close to the place of residence does not necessarily imply a negative phenomenon.

Our results suggest that only slightly more than a quarter of businesses rely solely on the local market for their livelihoods, with the majority of businesses (Figure 24) being active at national level, regardless of the stage of the business. A positive result, however, is that although the share of early-stage businesses that are active internationally has fluctuated between 26 and 30 percent for essentially years, the share of established businesses that are active in foreign markets has increased from 21.9 percent in 2022 and 17.8 percent in 2023 to 31.7 percent. Suppose the market reach stabilises in this range. In that case, it suggests that start-ups that enter the external market may be able to sustain or even increase their activity in the longer term, which is highly beneficial from a national economic point of view.

Therefore, most entrepreneurs are active in national or local markets, while a quarter of early-stage businesses and three out of ten established businesses are also active in foreign markets.

Figure 24. Market scope of total early-stage entrepreneurial activity and established businesses







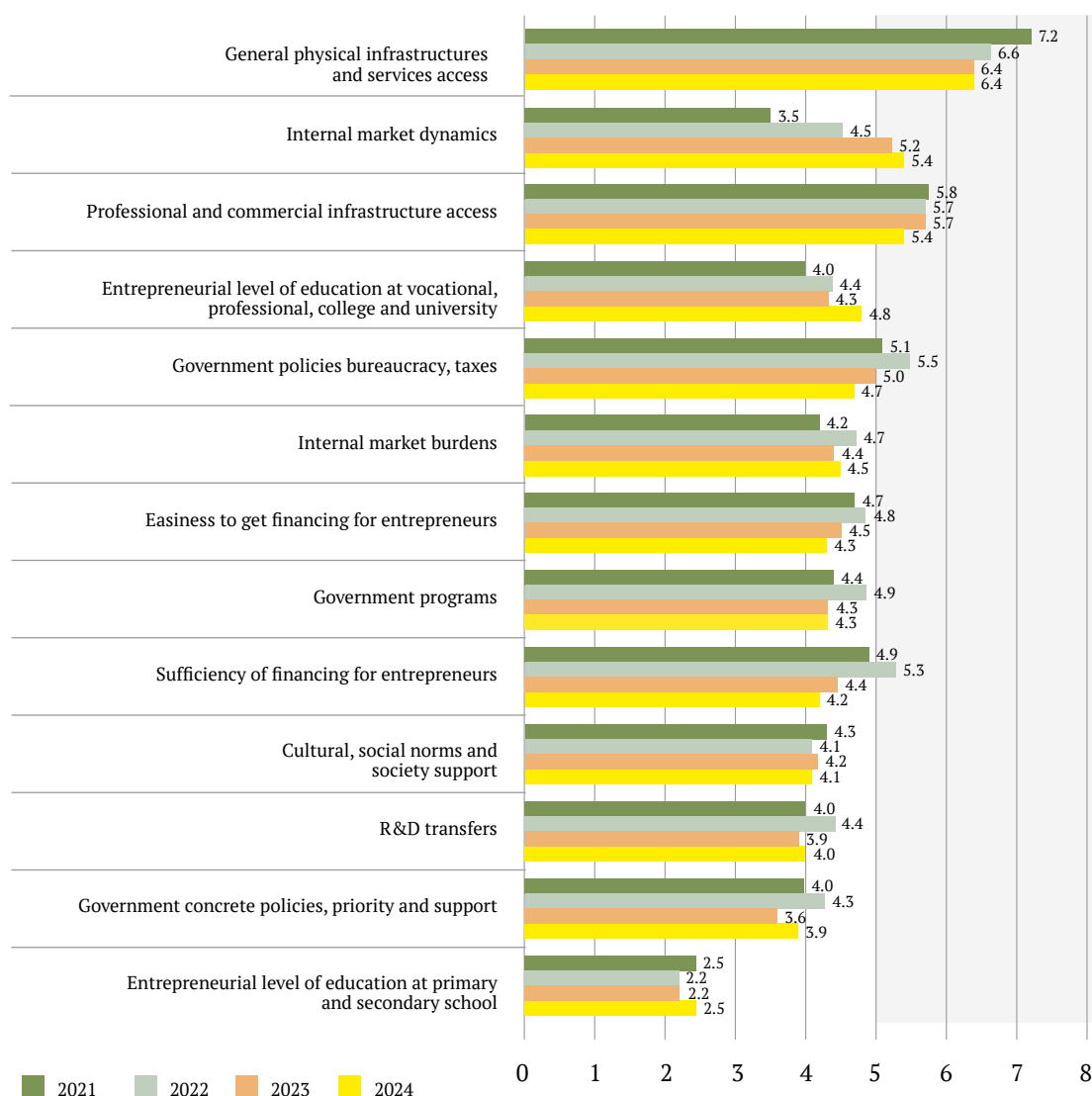
ENTREPRENEURIAL ECOSYSTEM

The GEM National Expert Survey (NES) provides a comprehensive picture of the business environment in each country. The experts' assessments are used to determine the scores that define the framework conditions for entrepreneurship. These scores are then averaged to produce the National Entrepreneurship Context Index (NECI) for each economy. International comparisons of entrepreneurship ecosystems can be made by aggregating the experts' assessments into a single indicator.²

² Entrepreneurship or entrepreneurial ecosystem is the umbrella term for the interdependent actors and relationships that directly or indirectly support the creation and growth of new businesses. One of the best-known categorisations is that of Isenberg. (Isenberg, D. J. (2010). How to start an entrepreneurial revolution. Harvard Business Review, 88(6), 40-50.)

The elements that make up the index for the years 2021, 2022, 2023 and 2024 are shown in Figure 25.

Figure 25. Assessment of the elements of the entrepreneurial ecosystem



The business framework conditions are assessed on a scale of 0-10. A score of 5 indicates that the area is acceptable and has a satisfactory level of development.

Based on the 2024 expert assessment, **Hungary's NECI is 4.5, the same as the previous year. In Hungary three framework conditions, (1) General physical infrastructures and services access, (2) Professional and commercial infrastructure access, (3) Internal market dynamics ecosystem elements, are rated at or above a satisfactory score of 5.** Of the ecosystem elements rated as acceptable, only the internal market dynamics: free, open, growing markets element shows an improving trend year on year. As in previous years, entrepreneurial level of education at primary and secondary school (2.5) received the lowest score, two tenths of a point higher than the previous year, but still well below

the desirable level. Compared to the previous year, there is a slight decrease in the ratings for government policies bureaucracy, taxes (4.7) and professional and commercial infrastructure access (5.4). Compared to last year, the most significant improvement is in the assessment of the ecosystem element of entrepreneurship education at vocational, professional, college and university level (4.8).

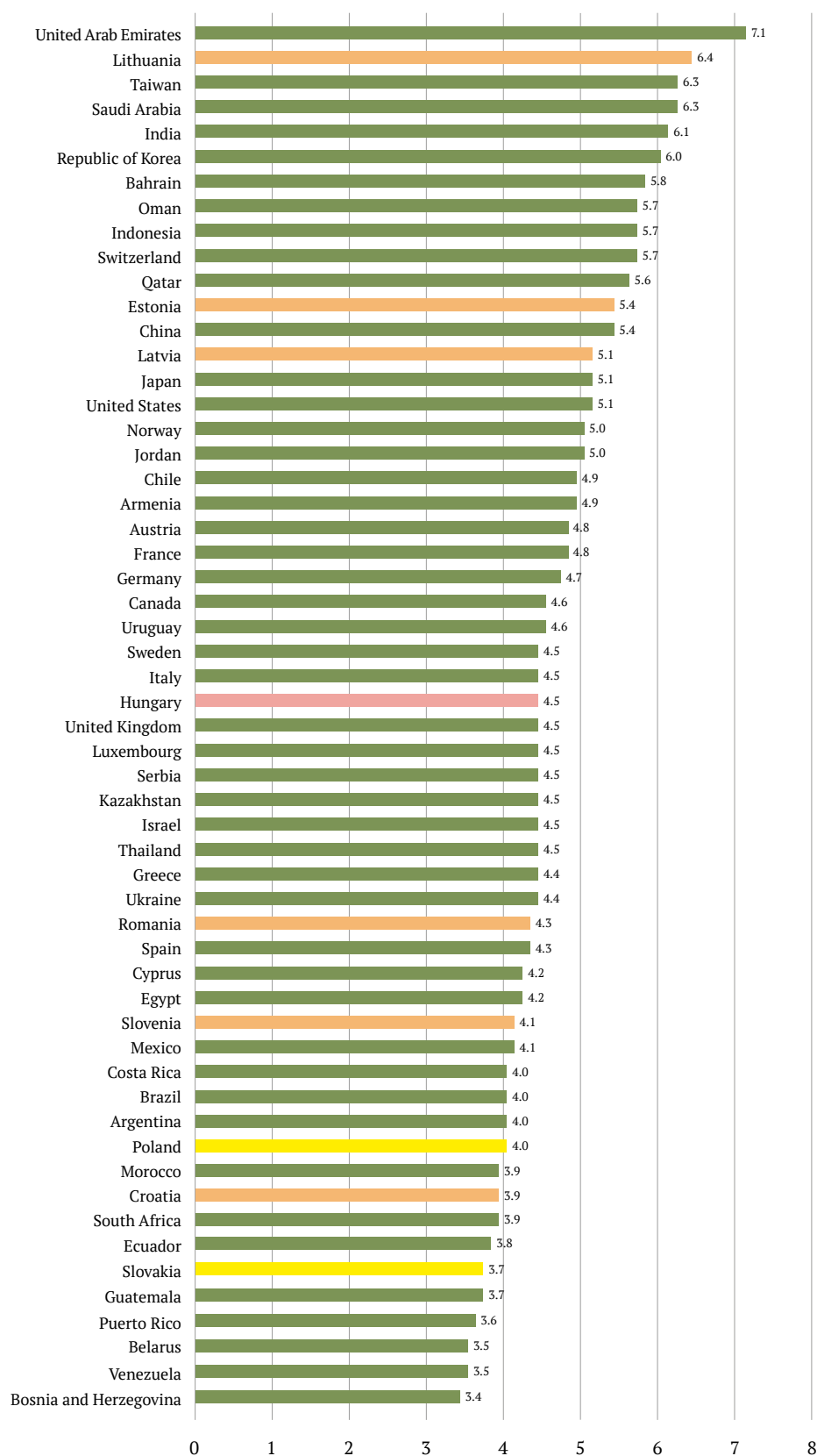
The NECI ranking of the 56 countries in the expert assessment based on 2024 data is illustrated in Figure 26.

Globally, Hungary's NECI score of 4.5 can be considered medium, as in previous years, two tenths of a point below the GEM average of 4.7. Serbia, Luxembourg, the UK, Italy, Sweden and the United Kingdom have the same NECI value as Hungary. Among the Visegrad countries in the survey, Hungary has the most favourable ecosystem score, exceeding the Slovakian score of 3.7 and the Polish score of 4, which show a downward trend compared to the previous year. Experts gave the highest score to the business environment in the United Arab Emirates, while Bosnia and Herzegovina was at the bottom of the list.

It is worth taking a closer look at the Hungarian business environment in a regional comparison. The average NECI score (4.6) for the nine Central and Eastern European countries surveyed (Lithuania, Estonia, Latvia, Slovenia, Hungary, Romania, Croatia, Poland, Slovakia) is slightly below the global average. Among the countries in the region, Lithuania, Estonia and Latvia have a more favourable ecosystem status than Hungary. Among the countries surveyed in the region, the experts' ecosystem assessment is below the Hungarian value in Romania, Slovenia, Croatia, Poland and Slovakia. Among the region's business ecosystems, Lithuania (6.4) stands out, with only the United Arab Emirates (7.1) scoring better than it among the surveyed countries.

The most significant improvement compared to last year is in the assessment of the ecosystem element of entrepreneurship education in higher education and training.

Figure 26. NECI ranking of countries participating in the NES survey



In the figure, the countries of Central and Eastern Europe are highlighted in orange, the Visegrad countries in yellow and Hungary in pink.



Péter Csillag

CEO, Palm Group Marketing Agency

IT entrepreneur, angel investor, President of the Hungarian Business Angel Network (HunBAN). He is the founder of Starschema, the most successful Hungarian data technology consulting company serving Fortune 500 companies.

The decline in start-up activity is also felt in the Hungarian start-up scene. This is mainly due to the uncertainty caused by the turbulent economic and social environment, which makes neither the founders nor the investors open to the kind of long-term investments that a start-up's journey from inception to exit entails. So for now, this is rational, but at the same time we can trust that the entrepreneurial spirit will not disappear forever.

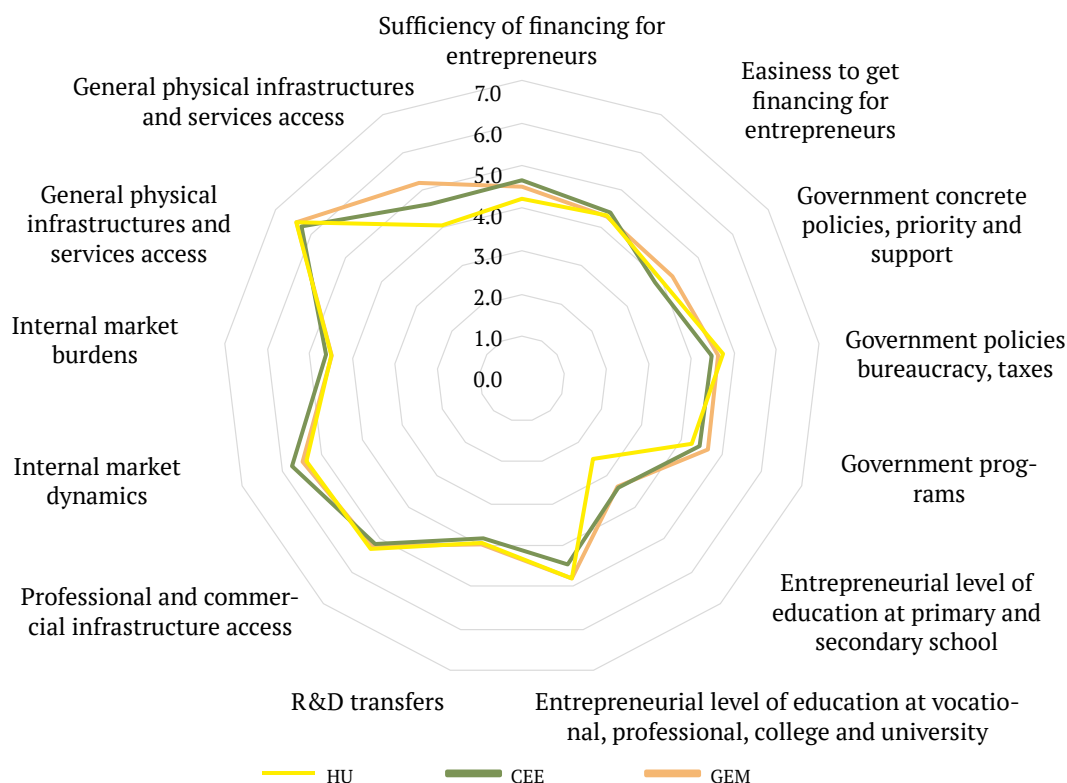
It is gratifying that the perception of the ease of entering the market is improving in Hungary, however, when we think at an international level, the situation is different. In the case of building a real business with international processes, selling independently on foreign markets, the much stronger competition requires a different kind of optimization even from companies that are otherwise, in principle, marketable on an international level. A serious difficulty in this upgrading is that there are hardly any specialists available who can properly help firms to transform their operations to support an international presence.

On the other hand, these people are also paying the price for taking a job in Hungary instead of a well-known European or American city, and for settling down here, even if only for a few years.

Overall, there is very little experience of this type in the country, and even fewer professionals who understand the operation of smaller companies and the world they are heading into when they enter the international market – so they could effectively support and manage the transition between the two. However, attracting foreign expertise means a huge jump in costs. On the one hand, in the case of an international-level professional, they have to compete with many times the number of potential clients from all over the world. On the other hand, these people also expect to be well compensated for choosing to work and settle in Hungary—even if only for a few years—instead of in a better-known European or American city.

A comprehensive business environment assessment can be achieved by thoroughly examining the framework conditions (Figure 27).

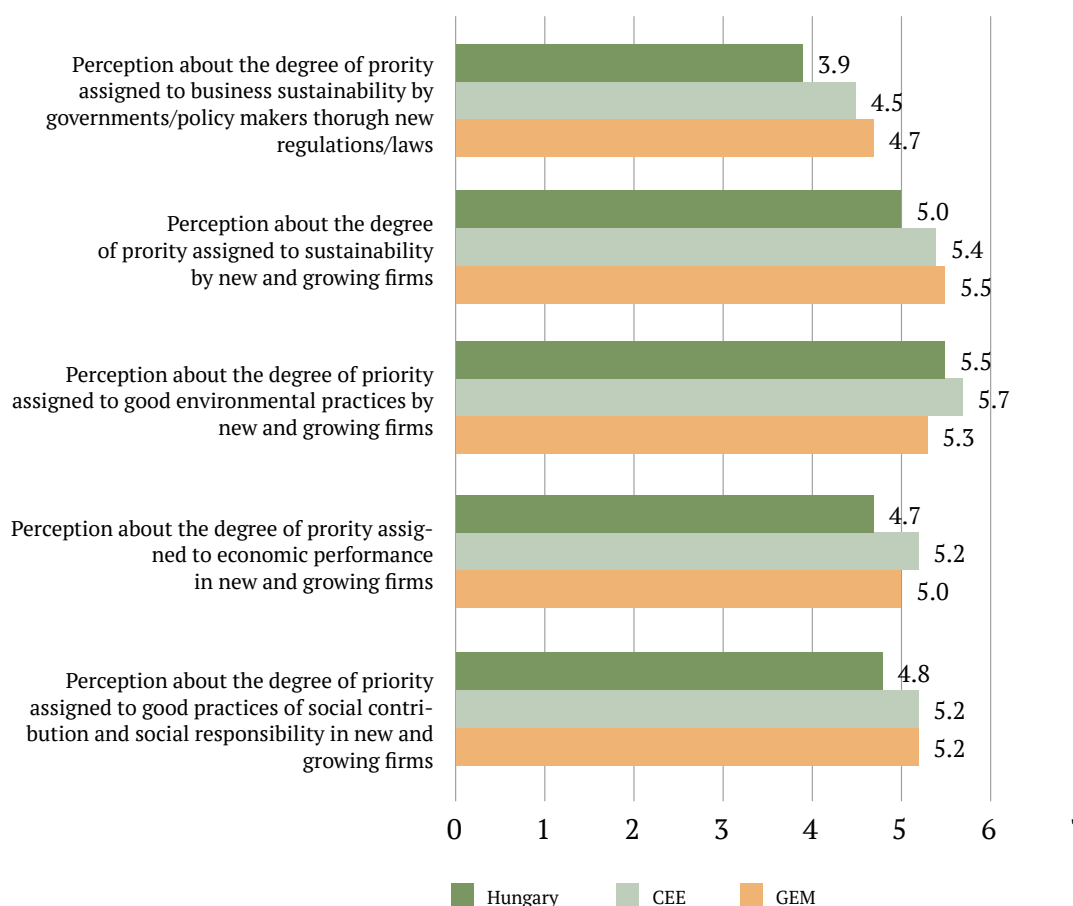
Figure 27. Comparison of entrepreneurial framework conditions



The expert assessment of the business environment in Hungary is mostly in line with international trends. The Hungarian ecosystem exceeds the regional and global averages in terms of expert assessment of the (1) professional and commercial infrastructure access, (2) government policies bureaucracy, taxes. The performance of the Hungarian ecosystem is well below the Central and Eastern Europe and GEM averages in (1) entrepreneurship education at primary and secondary school, (2) cultural, social norms and society support.

The 2023 experts' data collection had a key focus on mapping perceptions of sustainability, the results of which are illustrated in Figure 28.

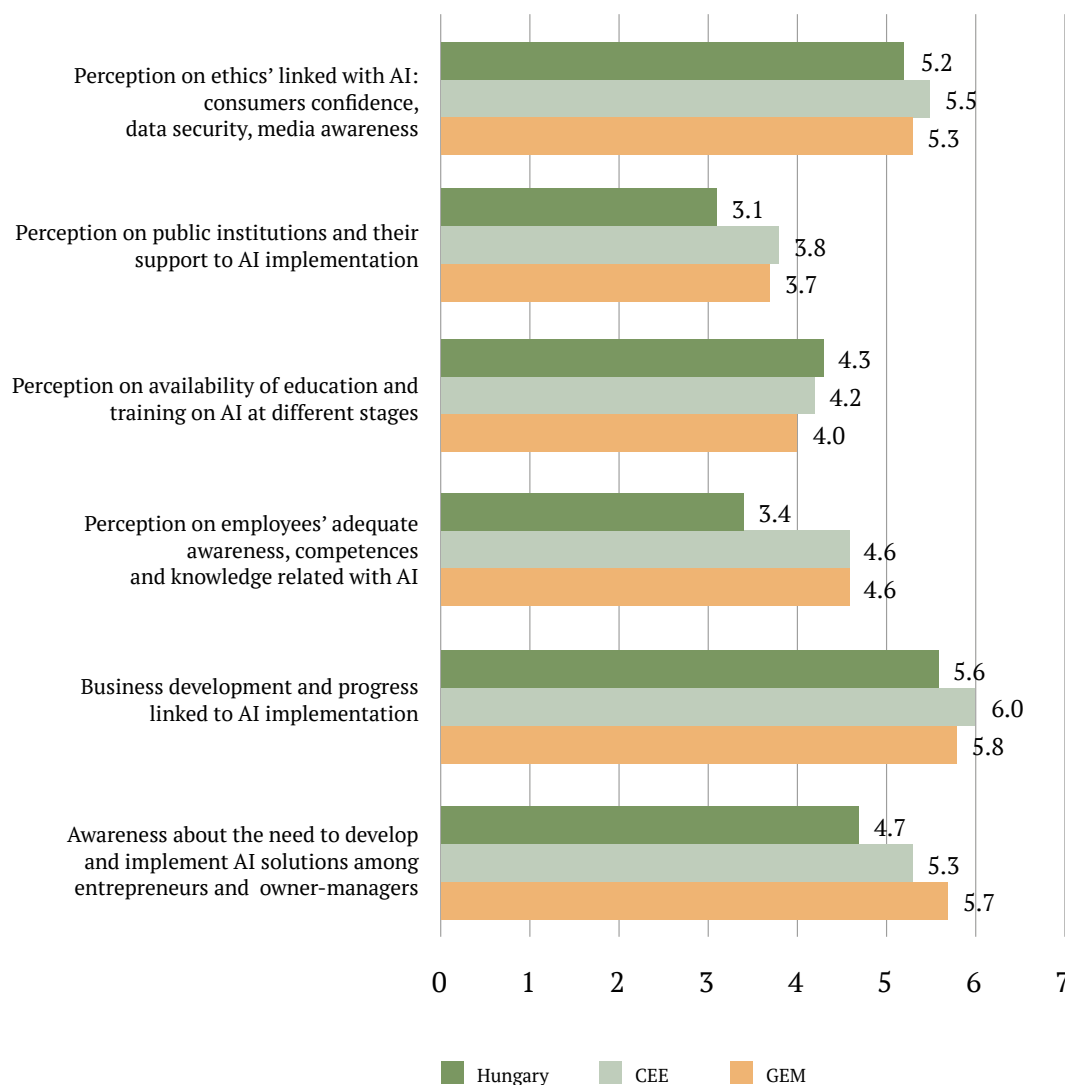
Figure 28. Evaluation of sustainability by experts



Based on expert assessments, Hungarian entrepreneurs consider environmental sustainability to be the most important factor. It is only in the perceived importance of this dimension that expert ratings in Hungary are higher than in Eastern Central Europe, while remaining below the global average. For all other sustainability-related aspects examined, the Hungarian assessment falls below both the global and regional averages.

Experts were also asked for their views regarding artificial intelligence. Figure 29 illustrates the expert assessments related to ethical considerations, support provided by public institutions, the availability of AI training, employee preparedness, the impact of AI on business development, and entrepreneurs' awareness of AI.

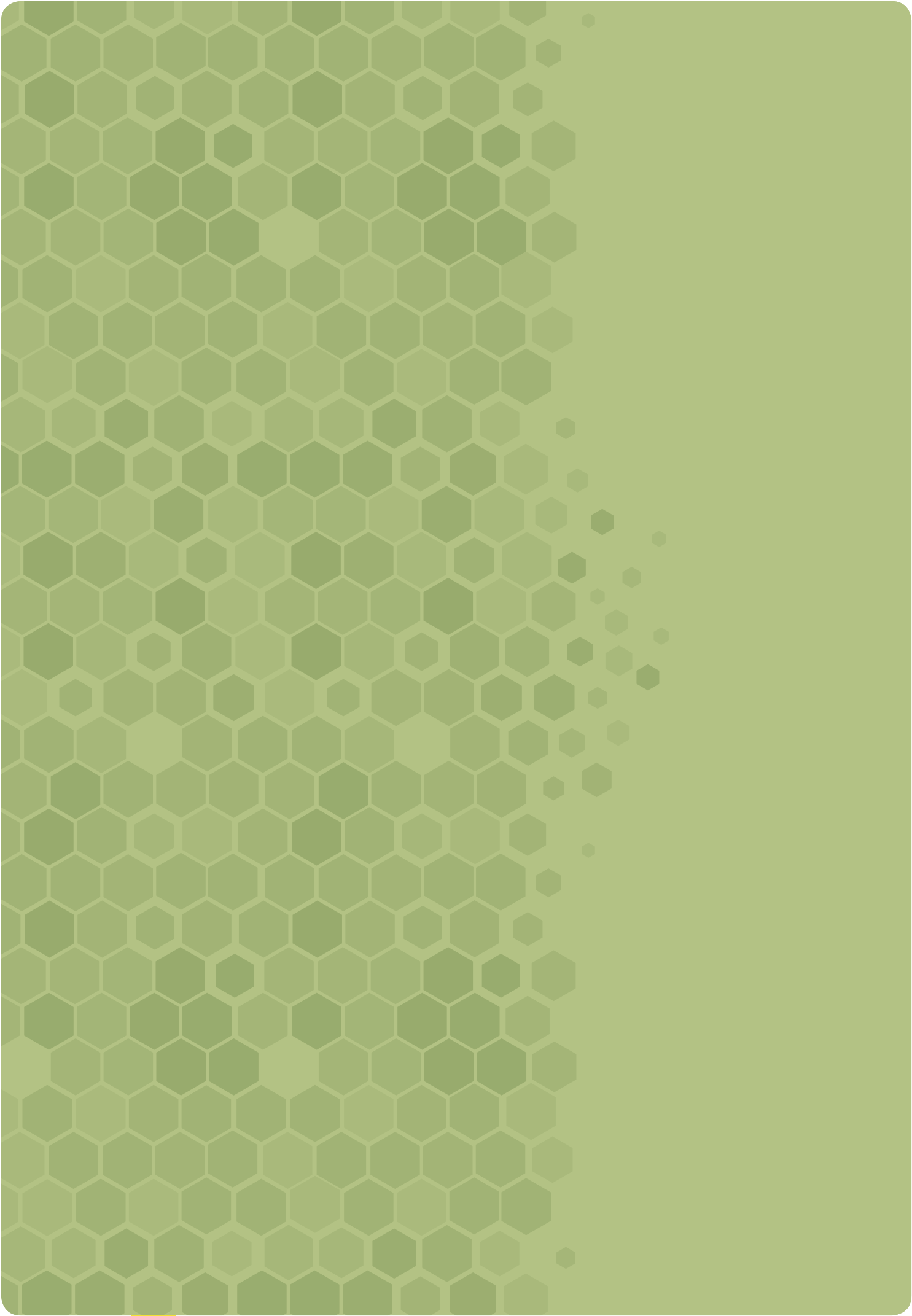
Figure 29. Evaluation of artificial intelligence by experts



With regard to artificial intelligence, experts assessed the situation in Hungary as falling below both the global and Eastern Central European averages. On a positive note, although only slightly, the availability of AI-related education and training exceeds both the global and regional assessments. However, this is not reflected in entrepreneurs' awareness of and commitment to AI developments, nor in employees' preparedness for AI adoption—areas in which Hungary shows the greatest lag compared to global and regional benchmarks.

According to the experts, Hungary's business ecosystem is positioned in the median range, both within its regional context and on a global scale. The assessment of government policy on professional and commercial infrastructure access and on taxes and bureaucracy is above both global and regional levels. There is a lag in entrepreneurship education at primary and secondary school and in the ecosystem elements of cultural, social norms and society support, both at global and regional level. The Hungarian ecosystem is also lagging behind in global and regional comparisons in terms of sustainability and the use of artificial intelligence.

Based on expert opinions, Hungary's entrepreneurial ecosystem belongs to the middle range in both regional and global comparison. The evaluations of professional and commercial infrastructure, as well as government policies bureaucracy, taxes exceed both regional and global levels. Deficiencies are observed in the ecosystem elements of entrepreneurship education at primary and secondary school level and in social and cultural norms, where Hungary lags behind both the global and regional averages. In terms of sustainability and the application of artificial intelligence, the Hungarian ecosystem also shows a shortfall compared to both global and regional benchmarks.



GEM TERMINOLOGY

APS (Adult Population Survey): The GEM's annual representative survey of at least 2,000 adults selected from among the domestic adult population aged between 18–64 years.

GEM (Global Entrepreneurship Monitor): The world's foremost study of entrepreneurship since 1999, comprised of national country teams, primarily associated with top academic institutions. The consortium carries out survey-based research on entrepreneurship and entrepreneurship ecosystems around the world.

NES (National Expert Survey): The GEM's annual survey of at least 36 experts who assess the entrepreneurial ecosystem against nine Entrepreneurial Framework Conditions.

Fear of Failure Rate: The percentage of the adult population aged 18–64 who see good business opportunities but do not start a business for fear of failure.

Nascent Entrepreneurship Rate: The percentage of the adult population aged 18–64 who are nascent entrepreneurs, i.e. actively involved in starting a business that they will own or co-own and that has not paid wages or made other types of payments to its owners for more than three months.

New Business Ownership Rate: The percentage of the adult population aged 18–64 who are owner-managers of a new business that has been paying wages and other types of payments to its owners for more than 3 months but less than 42 months (3.5 years).

TEA (Total early-stage Entrepreneurial Activity): The percentage of the adult population aged 18–64 who are nascent or new entrepreneurs starting or running a new business.

EBO (Established Business Ownership Rate): The percentage of the adult population aged 18–64 who are currently owner-managers of an established business that has been paying wages, salaries and other types of payments to its owners for more than 42 months (3.5 years).

EFCs (Entrepreneurial Framework Conditions): Conditions identified by the GEM that enhance (or inhibit) the creation of new businesses in an economy. These conditions form the framework of the NES (National Expert Survey) and are as follows:

- A1. Entrepreneurial Finance
- A2. Ease of Access to Entrepreneurial Finance
- B1. Government Policy: Support and Relevance
- B2. Government Policy: Taxes and Bureaucracy
- C. Government Entrepreneurial Programs
- D1. Entrepreneurial Education in Public Schools
- D2. Entrepreneurial Education in Higher Education and Vocational Training
- E. Research and Development Transfers
- F. Commercial and Professional Infrastructure
- G1. Ease of Entry: free, open, growing markets
- G2. Ease of Entry – Obstacles and Regulations: barriers and regulation
- H. Physical Infrastructure
- I. Social and Cultural Norms

NECI (National Entrepreneurship Context Index): An indicator that aggregates and calculates the average state of the entrepreneurial environment in economies. This index is based on NES data and combines the 13 national entrepreneurship framework conditions that were identified by GEM researchers as the most reliable determinants of a favourable environment for entrepreneurship. It is calculated by taking a simple arithmetic average of the 13 variables representing the business framework conditions. These conditions are measured by experts who rate items on an 11-point Likert scale, with responses then aggregated using principal component analysis.

GEM conceptual framework and data collection methodology

The GEM is the world's most comprehensive survey of entrepreneurial activity, with a solid methodological basis and the participation of many countries around the world collecting data every year since 1999. In 2024, a total of 56 countries (representative population survey in 51 countries, expert interviews in 56 countries) participated in the survey.

GEM countries have constantly helped us to understand the link between entrepreneurship and national economic development by answering the following questions:

- Does the level of entrepreneurial activity differ between countries, and if so, to what extent?
- Does the level of entrepreneurial activity affect a country's rate of economic growth and prosperity?
- What makes a country entrepreneurial and what factors influence entrepreneurial activity?

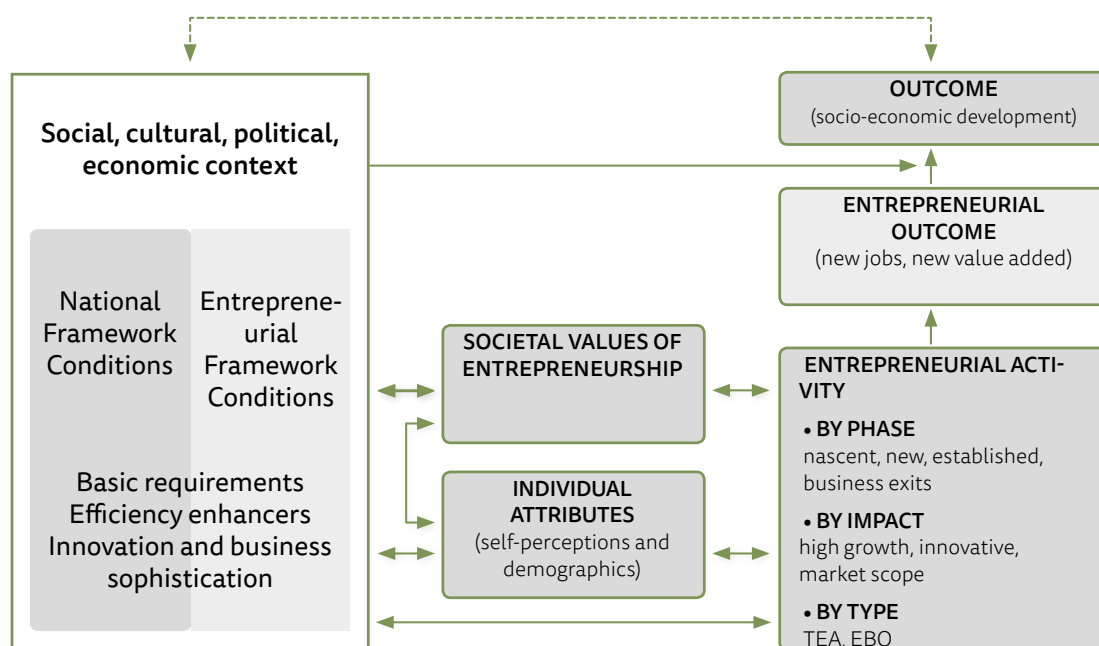
To uncover the link between entrepreneurship and national economic development, the GEM has developed a conceptual framework along the following objectives (Figure 30):

The model should achieve the following:

- enable comparisons of the level of entrepreneurial activity among countries, geographical regions and levels of economic development;
- make it possible to determine the extent to which entrepreneurial activity influences economic growth within each economy;
- help identify the factors that encourage and/or discourage entrepreneurship (in particular, the links among the national framework conditions for entrepreneurship, social values, personal characteristics and entrepreneurial activity);
- monitor entrepreneurial attitudes, activities and aspirations within countries and provide the basis for the annual national assessment of the entrepreneurial sector;
- support the development of effective and targeted policies to build the entrepreneurial capacity of countries.

The GEM conceptual framework is based on the premise that economic growth is a consequence of an individual's capacity to identify and exploit business prospects. Apart from personal skills and knowledge, an individual's choice to embark on an entrepreneurial endeavour is shaped by various environmental factors. The determinants of entrepreneurial initiation include the individual's perception of opportunity, their ability to seize that opportunity (motivation and skills), and the surrounding environment. In the GEM framework, the entrepreneurial ecosystem refers to the environment that impacts entrepreneurial activity, which, in turn, has an influence on the environment through social values and economic development (Source: <https://gemuae.uaeu.ac.ae/en/framework.shtml>)

Figure 30. GEM Conceptual Framework (Source: GEM Global Report 2024/255)



The GEM framework offers a precise and consistent definition of entrepreneurship and utilizes a well-established methodology to measure and evaluate entrepreneurial activity. The responsibility for data collection and analysis rests with the National Team in each participating country. To gather data, two surveys are conducted in tandem. The Adult Population Survey (APS) investigates the traits, motivations, aspirations and societal attitudes towards entrepreneurship among individuals who have started a business. The National Expert Survey (NES), meanwhile, solicits evaluations from a minimum of experts, who are endorsed by the GEM Data Team, regarding the contextual factors influencing entrepreneurship.

Countries participating in the GEM survey and their categorisation

Countries in the GEM data collection are categorised according to World Bank data, based on the income thresholds defined by the GEM (Table 3):

- **low-income countries with a GDP per capita of less than USD 25 000,**
- **middle-income countries with a GDP per capita between USD 25 000 and USD 50 000,**
- **high-income countries with a GDP per capita higher than USD 50 000.**

Table 3.

Categorisation of countries in the GEM survey (Source: GEM 2024/2025 Global Report)

Low-income countries < USD 25 000	Middle income countries > USD 25 000 < USD 50 000	High-income countries > USD 50 000
Bosnia and Herzegovina	Argentina	Austria
Brazil	Chile	Bahrain
South Africa	Costa Rica	Cyprus
Ecuador	Estonia	United States
Egypt	Belarus	United Arab Emirates
Guatemala	Greece	United Kingdom
India	Croatia	France
Indonesia	Kazakhstan	Israel
Jordan	Poland	Japan
China	Latvia	Canada
Morocco	Hungary	Lithuania
Armenia	Mexico	Qatar
Thailand	Oman	Republic of Korea
Ukraine	Puerto Rico	Luxembourg
	Romania	Germany
	Serbia	Norway
	Slovakia	Italy
	Uruguay	Spain
	Venezuela	Switzerland
		Sweden
		Saudi Arabia
		Slovenia
		Taiwan

Technical details

The Hungarian GEM National Report was based on a representative survey conducted among the Hungarian adult population (APS) and interviews with Hungarian experts (NES).

The technical details of the data collection are set out in the table below.

Table 4. Technical details of data collection

Sampling features	Information
APS	
Target population	Hungarian adult (18-64 age range) population
Target population size	5.939.393
Sample size	2.040
Sample design	Multiple strata – each sampled at identical rate
Type of sample	Random
Sampling period	24.05.2024. – 01.07.2024.
Interview method	Telephone
Sampling methodology	Random dial from list
Fieldwork carried out by	TÁRKI Social Research Institute
Data recording and SPSS database creation	TÁRKI Social Research Institute
Monitoring, quality control, and final verification	GEM Hungary National Team
NES	
Target population	Experts in entrepreneurship
Sample	36 experts
Type of sample	Convenience sample
Sampling period	21.03.2024. – 31.05.2024.
Interview method	Telephone interview
Fieldwork carried out by	Budapest University of Economics and Business
Data recording and SPSS database creation	GEM Hungary National Team

Further literature

- Csákné Filep, J., & Szennay, Á. (2024). Nők és férfiak vállalkozási hajlandósága, attitűdjei, vállalkozási aktivitása Magyarországon. Társadalmi Riport 2024, 337–354. <https://doi.org/10.61501/trip.2024.16>
- Csákné Filep, J., & Szennay, Á. (2024). Entrepreneurship Education Differences between the Generations of Socialism and Post-Socialism. Journal of East European Management Studies (JEEMS), special issue, 63–82. <https://doi.org/10.5771/9783748949602-63>
- Csákné Filep, J., Szennay, Á., & Timár, G. (2024). Lehetőségek, motiváció, környezet : Vállalkozói működés Magyarországon. Global Entrepreneurship Monitor Nemzeti Jelentés – Magyarország. <https://doi.org/10.29180/978-615-6342-81-2>
- Csákné Filep, J., Szennay, Á., & Timár, G. (2024). Opportunities, motivation, environment : Entrepreneurship in Hungary. Global Entrepreneurship Monitor National Report – Hungary. <https://doi.org/10.29180/978-615-6342-87-4>
- Csákné Filep, J., Timár, G., & Szennay, Á. (2025). Analysing the Impact of Entrepreneurship Education on Early-Stage Entrepreneurship—Focusing on the Transitional Countries of Central and Eastern Europe. Administrative Sciences, 15(2), 36. <https://doi.org/10.3390/admsci15020036>
- Csákné Filep, J., Szennay, Á. & Timár, G. (2025). Női vállalkozók Magyarországon: Global Entrepreneurship Monitor különjelentés. Budapest, Magyarország: Budapesti Gazdasági Egyetem
- Csákné Filep, J., Szennay, Á. & Timár, G. (2024). Női vállalkozók Magyarországon: Global Entrepreneurship Monitor különjelentés. Budapest, Magyarország: Budapesti Gazdasági Egyetem. <https://doi.org/10.29180/978-615-6342-78-2>
- Csákné Filep, J., Szennay, Á. & Timár, G. (2025). Vállalkozásoktatás Magyarországon Global Entrepreneurship Monitor Különjelentés. Budapest, Magyarország: Budapesti Gazdasági Egyetem
- Csákné Filep, J. – Gosztonyi, M. – Radácsi, L. – Szennay, Á. – Timár, G. (2022): Vállalkozási környezet és attitűdök Magyarországon. Budapest, Magyarország: Budapesti Gazdasági Egyetem. <https://doi.org/10.29180/978-615-6342-24-9>
- Csákné Filep, J. – Gosztonyi, M. – Radácsi, L. – Szennay, Á. – Timár, G. (2022): Entrepreneurial Environment and Attitudes in Hungary. Budapest Business School, Budapest, Magyarország. <https://doi.org/10.29180/978-615-6342-29-4>
- Csákné Filep J., Radácsi L., Szennay Á. & Timár G. (2023). Tenni akarás és megélhetés. Budapest, Magyarország: Budapesti Gazdasági Egyetem (BGE). https://doi.org/10.29180/2939-8320_978-615-6342-55-3
- Csákné Filep, J., Radácsi, L., Szennay, Á. & Timár, G. (2023). Taking initiative and earning a living. Budapest Business School, Budapest, Magyarország. <https://doi.org/10.29180/978-615-6342-65-2>

- GEM (Global Entrepreneurship Monitor). (2022). Global Entrepreneurship Monitor 2021/2022. Global Report: Opportunity Amid Disruption. <https://gemconsortium.org/report/gem-20212022-global-report-opportunity-amid-disruption>
- GEM (Global Entrepreneurship Monitor). (2023). Global Entrepreneurship Monitor 2022/2023 Global Report: Adapting to a "New Normal". <https://gemconsortium.org/file/open?fileId=51147>
- GEM (Global Entrepreneurship Monitor). (2024). Global Entrepreneurship Monitor 2023/2024 Global Report: 25 Years and Growing. <https://gemconsortium.org/report/global-entrepreneurship-monitor-gem-20232024-global-report-25-years-and-growing>
- Gosztonyi, M. (2022): COVID-19 positivism: Has COVID-19 changed Hungarian entrepreneurs' perception of business opportunities? PROSPERITAS, 9(4), (1). Budapest Business School
- Csákné Filep, J. (2022): Guest editorial: Global and local perspectives of entrepreneurship research. PROSPERITAS, 9 (4) (5). Budapest Business School
- Chandler, N. (2022): Entrepreneurial personality and motive: A study of Hungarian early-stage entrepreneurs using GEM data. PROSPERITAS, 9 (4) (3). Budapest Business School
- Győri, Zs. – Kása, R. – Szegedi, K. (2022): Hungarian entrepreneurs' sustainability motivations based on GEM 2021 results. PROSPERITAS, 9(4) (4). Budapest Business School
- Sági, J. – Szennay, Á. (2022). A COVID-19 pandémia első évének magyar vállalkozásokra gyakorolt hatása, különös tekintettel a fenntarthatósággal kapcsolatos kérdésekre. Polgári Szemle 18, 80–97, <https://doi.org/10.24307/psz.2022.1107>
- Csákné Filep, J. – Szennay, Á., (2023): Factors influencing entrepreneurs's decision-making concerning SDGs. In Nedelko, Z., Korez Vide, R. (eds.) (2023). 7th FEB International Scientific Conference: Strengthening Resilience by Sustainable Economy and Business – Towards the SDGs. University of Maribor, University Press. DOI: <https://doi.org/10.18690/um.epf.3.2023.21>
- Krankovits, M., Csákné Filep, J., & Szennay, Áron. (2023). Factors of Responsible Entrepreneurial Behaviour: Empirical Findings from Hungary. Chemical Engineering Transactions, 107, 25-30. Retrieved from <https://www.cetjournal.it/index.php/cet/article/view/CET23107005>
- Szennay, Á., & Csákné Filep, J. (2024). Digital revolution powered by COVID-19? An analysis of the digitalisation activities of Hungarian entrepreneurs. Society and Economy, 46(4), 368–385. <https://doi.org/10.1556/204.2024.00010>
- Timár, G., Szennay, Á., & Csákné Filep, J. (2025). A vállalkozásoktatás hatása a vállalkozói aktivitásra a közép-kelet-európai tranzíciós országokban – The Impact of Entrepreneurship Education on Entrepreneurial Activity in Transitional Central and Eastern European Countries. Köz-Gazdaság, 20(1), 41–60. <https://doi.org/10.14267/retp2025.01.04>

