

INTERNATIONAL ECONOMIC RELATIONS AND GOVERNANCE BY NATIONAL ECONOMY

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ENTREPRENEURIAL ECOSYSTEM IN UKRAINE AND POLAND: A COMPARATIVE ANALYSIS

This paper investigates the Polish and Ukrainian entrepreneurial ecosystems using Isenberg's entrepreneurial ecosystem approach and analysis based on the evaluation of the innovative reports. The assessment of the Ukrainian entrepreneurial ecosystem confirmed that Ukraine has an unbalanced entrepreneurial ecosystem and could be classified as the first type of entrepreneurial ecosystem development. Ukraine has an Innovation-friendly environment for business and a strong Broadband penetration dimension. Poland's entrepreneurial ecosystem is characterized by the more rapid growth of venture business, including active support for startups by venture investors and encouragement of high-tech innovation projects implementation. The mutual advantage for Ukraine and Poland is the Employment impact dimension. Still, the drivers of this strong dimension are different – Employment in fast-growing enterprises in Poland and the Employment knowledge-intensive activities metric for Ukraine. The common weakness identified for both countries is the Attractive research system dimension. In terms of investments, it is worth noting that in Ukraine, nearly 89% are invested by the USA findings of growth-stage startups and only 2% by local venture capital investors. Furthermore, the Polish funds have invested almost 50% in Polish companies, and public programs in Poland supported about 55% value of transactions.

The comparative analysis of the Polish and Ukrainian entrepreneurial ecosystem showed that it is needed to increase the attractiveness of the research system and financial support of innovation activity in Ukraine and develop attractive research systems and linkages in Poland. Also, based on the analysis, Ukraine and Poland still lack entrepreneurial mindsets, but the younger generation is more open to starting their businesses.

Keywords: entrepreneurial ecosystem, entrepreneurship, innovation, partnership, Ukraine, Poland

Introduction. Entrepreneurship is becoming an integral feature of all levels and scales of modern economic systems – from the individual entrepreneur to a global corporation in a post-industrial economy. Such dynamic capabilities as the ability to see a strategic perspective, identify and meet new customer needs, generate innovation solutions (product, process, marketing and organizational), and build successful partnership networks provide sustainable competitive advantages and maintain a highly competitive status of economic entities. New challenges in a knowledge-based economy are to enable the process of effective knowledge commercialization, diffusion, and transfer. It is possible due to partnership – combining the efforts of the participants of the entrepreneurial ecosystem to jointly achieve goals based on "co-opetition"¹ and „shared infrastructure”², resulting in a synergistic effect. The entrepreneurial ecosystem provides diversity, the concentration of the best ideas, critical mass of startups, innovation infrastructure

¹ Бранденбургер, А., Нейлбафф, Б. (2012). *Co-opetition. Конкурентное сотрудничество в бизнесе*. Москва: Кейс.

² Frishmann, B. (2012). *Infrastructure: The social value if shared resources*. Oxford: Oxford University Book.

DOI: 10.1093/acprof:oso/9780199895656.001.0001. Electronic copy available at: <http://ssrn.com/abstract=2000962>.

(accelerators, business incubators, VC funds), so that all „networked actors” of the entrepreneurial ecosystem develop faster and easier. At the same time, it is crucial to find a balance between the integration and differentiation of entities in the entrepreneurial ecosystem. Moreover, the Central and Eastern European region (CEE) is the hub of the research and development personnel for Europe (about 1mln. professional-grade software developers). Furthermore, Poland has a fast-growing startup ecosystem in the CEE region due to the number of transactions in the VC investment market during 2019-2020. Ukraine is the leading IT outsourcing destination country in Eastern Europe in 2020, thereby being a fast-developing country in terms of technical skills and tech expertise. Therefore, considering economic and strategic cooperation between Poland and Ukraine, it is necessary to find effective interaction formats through partnership within the entrepreneurial ecosystems.

Results and discussions. The concept of "business ecosystem" was defined by J. Moore in 1993. In his research¹, the author points out that companies should not be considered within a particular industry, but as part of a business ecosystem that combines different business sectors and allows companies to grow together (cooperating and competing simultaneously). In this context, the successful business performance of startups as the new innovative companies depends on effective cooperation with different stakeholders within the entrepreneurial ecosystem.. According to the institutional theory (Lawrence and Suddaby, 2006)² entrepreneurial ecosystem involves “the purposive action of individuals and organizations aimed at creating, maintaining and disrupting institutions”. However, the scientists defined the major issues in an entrepreneurial ecosystem – the necessity to transition from institution (without linkages) to trilateral collaboration – triple helix approach (Etzkowitz, H.L. Leydesdorff, 2000)³. Moreover, the researchers (Stam, Spigel, 2016)⁴ suggest that the entrepreneurial ecosystem is “a set of interdependent actors and factors coordinated in such a way that they enable productive entrepreneurship within the particular territory”. The recent studies (Cantner, U., Cunningham, J.A., Lehmann, E.E. *et al.*, 2021)⁵ point out the importance of transition “from an entrepreneurial ecosystem, with a focus on new firm creation, towards a business ecosystem, with a core focus on the internal commercialization of knowledge”.

Based on the analysis of scientific works⁶, the key statements on the essence of the entrepreneurial ecosystem are the following:

- consider the entrepreneurial ecosystem as a set of interdependent and interconnected subjects of the ecosystem;
- elements of the entrepreneurial ecosystem form a dynamic self-regulatory network;
- the development of the entrepreneurial ecosystem contributes to the intensification of entrepreneurial activities and the achievement of sustainable development goals (sustainable growth);
- the modern understanding of the entrepreneurial ecosystem is based on Chesbrough’s concept of "open innovation"⁷ and allows to solve such tasks as accelerating the development of new products, reducing research costs, increasing the number of successful new services or products.

In order to compare the Polish and Ukrainian entrepreneurial ecosystems, we provide qualitative and quantitative analysis. Quantitative analysis of the entrepreneurial ecosystem’s level of development could be measured by assessing the innovation performance through innovative reports evaluation. In this paper, we use the data from the following innovative rankings and reports: European Innovation Scoreboard 2020, Global Innovation Index 2020, Doing Business, Startup Ecosystem Rankings Report 2020, Polish VC market outlook 2020, Polish Startups 2020 Covid Edition, Sub-regional Innovation Policy Outlook 2020: Eastern Europe and the South Caucasus, Ukrainian Venture Capital and Private Equity Overview 2019. The comparative analysis of different innovative rankings allows evaluating the level of innovation system

¹ Moore, J. (1993). Predators and Prey: A New Ecology of Competition. *Harvard Business Review*. May.

² Lawrence, T. B., Suddaby, R. (2006). Institutions and institutional work. In: Clegg, S. R., Hardy, C., Lawrence, T. B., Nord, W. R. (eds.) (2006). *Sage Handbook of Organization Studies*. London: Sage, 215-254.

³ Etzkowitz, H., Leydesdorff, L. (2000). The Dynamics of Innovation: From National Systems and “Mode 2” to a Triple Helix of University-Industry-Government Relations. *Research Policy*, 29 (2), 109-123.

⁴ Stam, F. C., Spigel, B. (2016). Entrepreneurial Ecosystems. *USE Discussion Paper Series*, 16, 1-18.

⁵ Cantner, U., Cunningham, J.A., Lehmann, E.E. and others (2021). Entrepreneurial ecosystems: a dynamic lifecycle model. *Small Bus Econ*, 57, 407-423. DOI: <https://doi.org/10.1007/s11187-020-00316-0>.

⁶ Isenberg, D. (2011) *The entrepreneurship ecosystem strategy as a new paradigm for economy policy: principles for cultivating entrepreneurship*. Babson Entrepreneurship Ecosystem Project, Babson College, Babson Park: MA.

⁷ Чесбро, Г. (2007). *Открытые инновации. Создание прибыльных технологий*. Москва: Поколение.

performance of countries and determining the priority directions to foster innovation for various stakeholders (policy-makers, innovation brokers, entrepreneurs, etc.).

European Innovation Scoreboard (EIS) rating presents the results of innovation and research performance of EU countries and regional neighbors. EIS 2020 measured innovation performance using 27 metrics combined into ten key dimensions. The general level of innovation performance was assessed using Summary Innovation Index (SII). The comparative analysis of Poland and Ukraine SII in terms of 10 dimensions is presented in Figure 1.

According to the European Innovation Scoreboard 2020, Poland is a moderate innovator, and Ukraine ranks as a modest innovator. The most robust innovation dimensions for both countries (Ukraine and Poland) are an *Innovation-friendly environment* and *Employment impact*.

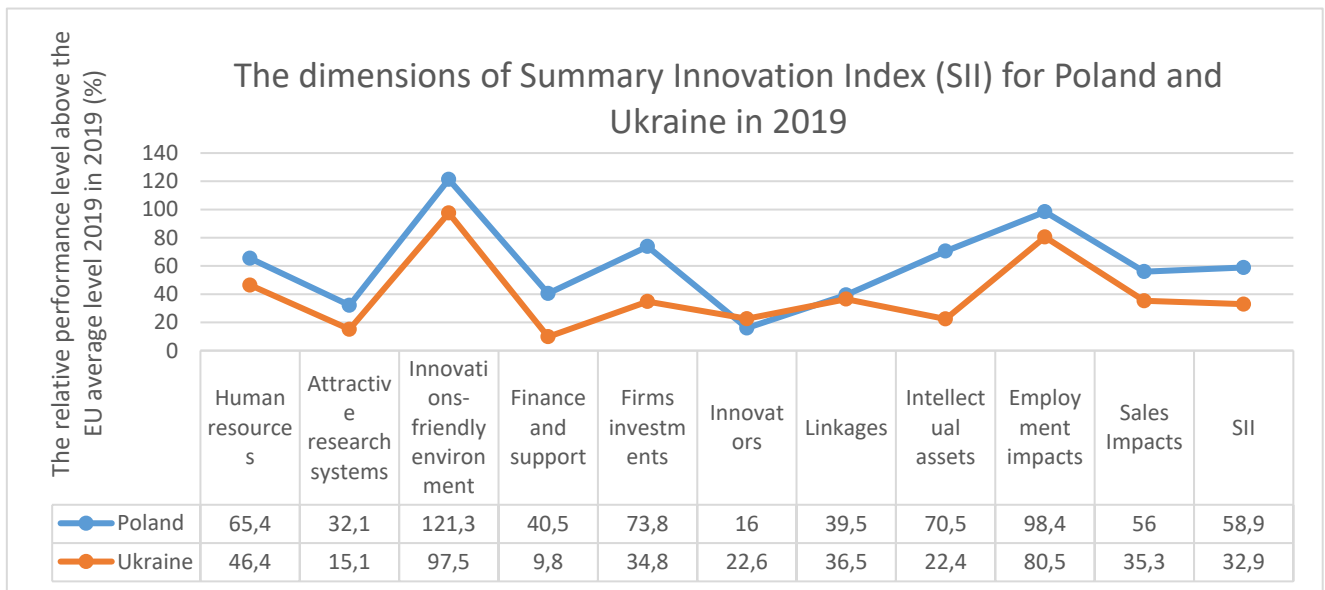


Figure 1. The dimensions of Summary Innovation Index for Poland and Ukraine

Source: information based on the European Innovation Scoreboard 2020

Ukraine has a strong *Innovation-friendly environment* dimension due to *Broadband penetration driver* (91,7), which confirms the growth of companies through access to fast internet (at least 100 Mb/s). At the same time, *Opportunity driven entrepreneurship* dimension in Poland is the base for strong *Innovation-friendly environment*. It states 140,6 (innovation leader) and measures an excellent opportunity for engaging in a new business. Moreover, Poland’s *total early-stage entrepreneurial activity* metric is 6,5% compared with average EU 6,7%. Furthermore, enterprise birth (10+employees) in Poland states 1,9%¹. In particular, this indicator describes the share of new enterprise birth in the economy and in Poland is higher than the average EU (1,1%).

Another common advantage for Ukraine and Poland is the *Employment impact* dimension, but the drivers of this strong dimension are different. *Employment in fast-growing enterprises* in Poland confirms the capacity to rapidly transform Poland’s economy through the dynamism of developing the enterprises in innovative sectors. Ukraine has high score (90) due to the *Employment knowledge-intensive activities* metric.

The weakest innovation dimensions for Poland are *Innovators*, *Attractive research systems* and *Linkages*, and for Ukraine – *Intellectual assets*, *Finance and support*, *Attractive research systems*. Therefore, a common weakness identified for both countries is the *Attractive research system* dimension. However, Poland has two times higher value of this indicator (32,1) than Ukraine (15,1).

Let’s analyze in more detail the differences by groups of SII indicators, for which there are the major distinctions (see Figure 2).

¹ European Innovation Scoreboard (2020). European Commission, Directorate-General for Internal Market, Industry. Brussels: Entrepreneurship and SMEs, 62.

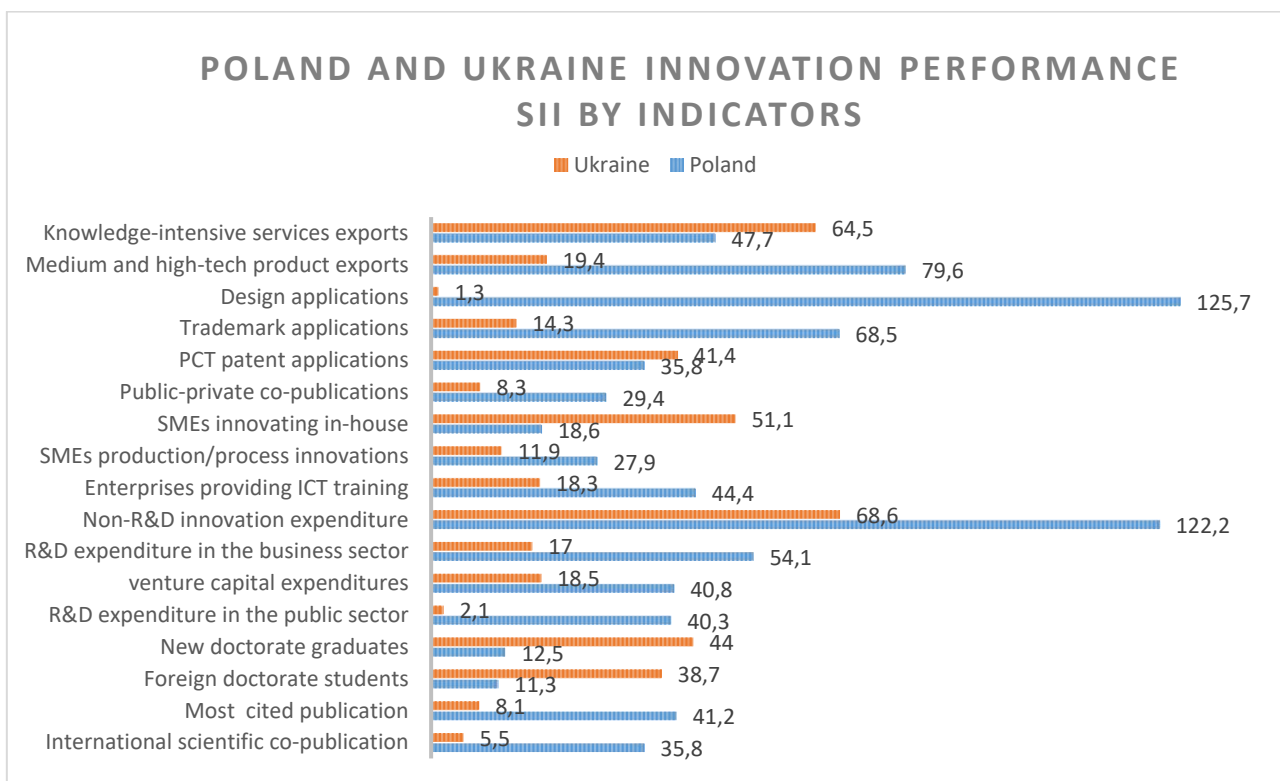


Figure 2. Poland and Ukraine innovation performance SII by indicators

Source: information based on the European Innovation Scoreboard 2020

Three indicators represent Attractive research system dimension: International scientific co-publication, Most cited publication, and Foreign doctorate students. Consequently, from the above figure, it can be seen that despite the higher score indicator of Foreign doctorate students (38,7) in Ukraine compared with Poland (11,3), in Ukraine metric Most cited publication five times lower, International scientific co-publication – seven times. According to the Innovators dimension, Ukraine has better results than Poland, but this level is extremely low compared to Germany (136,9) or Norway (183,8). In particular, Ukraine has a higher score of indicator SMEs innovating in-house by 32, 5 percentage points within this dimension. Instead, Poland has a higher score SMEs production/process innovations indicator, which confirms the statement in general about the high level of innovation activity in Poland due to the implementation of technological innovations.

One of the weakest dimensions in the Ukraine profile of Innovation Scoreboard is Intellectual assets (22,4), which is three times lower than Poland. Although the Ukraine PCT patent application level (41,4) is very similar to the Polish level (35,8), the difference in the Trademark application is almost 54,2 percentage points. Poland is the innovation leader in Design Applications; Ukraine has nearly a 1,3 score. It could be explained that there is not so widely used to register industrial design applications in Ukraine.

The metric Firms Investments in Ukraine is meager and states only 34,8, which is two times lower during the same period in Poland. Mainly, this can be explained by the critically low score of contextual indicator – the Rule of law (-0,7) at the accepted range (-2,5; +2,5). The rule of law is one of the most crucial signals for foreign investors and one of the most important factors in the development of the country's investment attractiveness is the ability to protect business interests in courts.

Comparing Poland and Ukraine, it should be noted that Ukraine has two times lower values for indicators such as Venture capital expenditures, Non-R&D innovation expenditures. The number of enterprises providing ICT training for their employees is also low, which confirmed the corresponding indicator (18,3). Ukraine performs worse on indicators such as R&D expenditure in the public sector (2,1), demonstrating a lack of funding R&D in the government and higher education sectors. At the same time, the value of this indicator in Poland is 40,3. This indicator is one of the key drivers of entrepreneurship and

business development in the knowledge-based economy. Furthermore, R&D expenditure in the public sector impacts the amount of venture capital investment and R&D investments in the business sector. In particular, public expenditure on R&D “could reduce or increase the expected rate of return for venture capital investments and generate value through fostering VC activity”¹ Moreover, the critical is the value of R&D expenditure in the public sector due to the fact that “public R&D expenditures are more important for the generation of venture capital investments in countries with the low level of innovative infrastructure development.» Hence, increasing the public expenditure on R&D could positively affect venture capital investments in the country.

The global innovation index covers 131 countries measuring the innovation performance for these economies. As per Global Innovation Index in 2020², Ukraine was placed at the 45th position, improving this ranking from the 47th position in 2019. Poland ranked 38th in 2020 while enhancing this ranking by one position compared with 2019. Moreover, Poland demonstrated results in line with the projected level of development, and Ukraine stated innovation performance above the expected level of development. The comparative analysis of innovation performance of Poland and Ukraine using Global innovation index by pillar is shown in Fig.3.

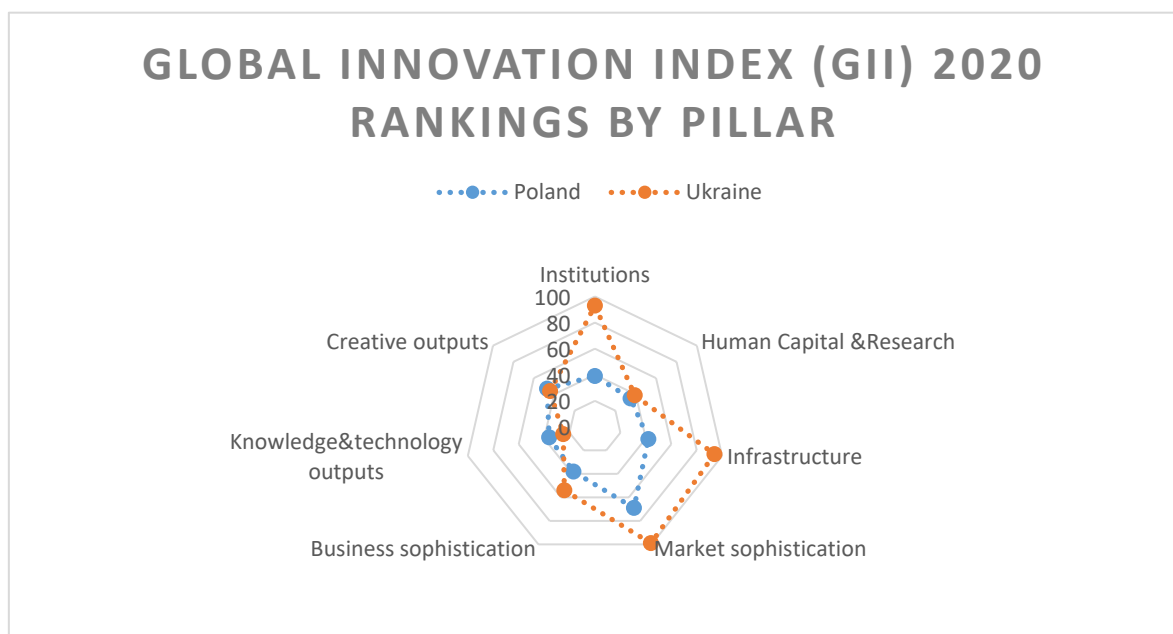


Figure 3. Global innovation index (GII) 2020 rankings by pillar for Poland and Ukraine

Source: information based on the European Innovation Scoreboard 2020

If we compare Ukraine with Poland, we can observe that Poland has a more balanced innovation system. Even though Poland doesn't have all pillars with strong performance, compared with other European countries, there is a balance across all pillars, except *Market sophistication*. It is interesting to note that Ukraine has worse innovative performance on the innovation inputs and at the same time performs better on indicators such as *Knowledge & technology outputs*, *Creative outputs*. Therefore, the country shows good results of the innovation output sub-indices.

The most significant gaps between the two countries are in the following metrics: *Institutions* (54 spots in rating) and *Infrastructure* (52 spots in rating). The main reasons could be political instability, government inefficiency (*Institution* pillar), and insufficient general infrastructure for business and environmental performance (*Infrastructure* pillar) in Ukraine.

¹ Herrera-Echeverry, H. (2017). Public Expenditure in Research and Development and Venture Capital Commitments. *Economics of engineering decisions*, 28 (3). DOI: <https://doi.org/10.5755/j01.ee.28.3.13216>.

² Cornell University, INSEAD; WIPO (2020). *The Global Innovation Index 2020: Who Will Finance Innovation?* Fontainebleau; Geneva: Ithaca.

Global Startup Ranking tracks the development of the startup ecosystem in 100 countries worldwide. The comparative analysis of startup ecosystems for Poland and Ukraine can be seen in Table 1.

Table 1

Global Startup Rankings 2020 for Poland and Ukraine

National Rank	Poland				Ukraine			
	City	Global Rank	Rank Change (from 2019)	Total Score	City	Global Rank	Rank Change (from 2019)	Total Score
1	Warsaw	73	-19	5,140	Kyiv	32	+2	9,712
2	Poznan	170	-32	1,499	Lviv	354	-55	0,452
3	Wroclaw	171	+36	1,490	Odesa	356	-121	0,450
4	Krakow	181	-27	1,375	Kharkiv	441	-6	0,318
5	Gdańsk	304	-55	0,580	Ternopil	724	-46	0,122

Source: *StartupBlink Ecosystem Report 2020*.

As per StartupBlink Ecosystem Report¹, Ukraine ranked 29th among 100 countries in 2020, having moved up two notches from 31st rank in 2019. Poland was placed at the 27th position in 2020, after a significant drop of 7 slots in 2019. In StartupBlink's 2020 ranking of the most entrepreneurial cities, only the capitals of Poland and Ukraine entered the top 100. Kyiv was ranked the top startup city in Ukraine at the 32nd position globally, and Warsaw was placed at the 73rd position. From this figure, it can be concluded about unbalanced development of startup ecosystem both in Poland and Ukraine. Since, other Polish cities – Poznan, Wroclaw, and Krakow followed in the 170th, 171st, and 181st spots, respectively. However, Wroclaw showed a significant result jumping by 36 spots. We can observe a vast disproportion between Kyiv and other Ukrainian cities (Lviv, Odesa, Kharkiv), ranking outside the top 300. The key reason for such kind of situation is the concentration of high-quality developers in Kyiv. In particular, according to recent research, approximately 43% of Ukrainian IT specialists are based in Kyiv.

It is worth noting that the interpretation of the index results should always be considered taking into account cultural socio-economical features of the region and the local condition of doing business. Therefore, the next step in analyzing the entrepreneurial ecosystems will be the research of their qualitative characteristics. Isenberg's model of the entrepreneurship ecosystem is used to make this analysis. According to D. Isenberg's approach, the entrepreneurial ecosystem consists of many elements that should be combined in six key dimensions: culture, government policy, institutional support, human capital, finance, and markets (venture capital). Therefore, a short overview of these dimensions is described below.

– *government policy*. In Poland, to increase the innovativeness of the Polish economy for dynamic and sustainable economic growth, reforms aimed at catching up and building new competitive advantages based on the concept of developing intellectual capital in its four dimensions (social capital, human capital, structural capital, and relational capital)². There are 16 key national clusters (Krajowy Klaster Kluczowy), created to support internationalization based on the program "Intelligent development". Furthermore, there are R&D programs and programs aimed to support the partnership between science-business: BIOSTRATEG, STRATEGMED, TECHMATSTRATEG, GOSPOSTRATEG, INFOSTRATEG INNOMED, and others. The programs enable to support R&D projects, which have internal growth potential and long-term effects.

The Polish Agency for Enterprise Development (PARP) is a key authority responsible for the implementation program from EU structural funds. National Centre for research and development is an executive agency implementing tasks in state innovation policy.

A key strategy approved by the Ukrainian government was the Strategy for the Development of Innovation until 2030". It aims to describe the priority steps to stimulate innovations and develop

¹ The Global Startup Ecosystem (2021). *Index Report 2020* <<https://report.startupblink.com/>> (2022, January, 15).

² Komunikat Komisji Europejskiej (2010). *Europa 2020 – strategia na rzecz inteligentnego i zrównoważonego rozwoju sprzyjającego włączeniu społecznemu*. COM, Bruksela 03.03.2010.

mechanisms for implementing innovative methods in economic activity. Moreover, many priorities are presented, ranging from creating favorable conditions for starting startups to developing new quality standards and expert evaluation of innovative products. In Ukraine, in 2018, the National Research Fund was established, the purpose of which is to provide grants to support research and development. Also, the Doing Business 2020 report¹ states that easier to do business in Poland (40th place in the ranking) than in Ukraine (64th place) due to better performance in *Resolving insolvency* and *Trading across borders*.

– *finance*. For the objective of comparative analysis venture capital market, we will use two reports: Ukrainian Venture Capital and Private Equity Overview 2019 (annual market report performed by UVCA and Deloitte)² and Polish VC market outlook 2020 (PFR Ventures)³.

Thus, in Poland, 2020 was a „record” year for the Polish VC market. In particular, the value of VC investments was approximately 477M euro, which is a 70 percent increase compared to 2019 (295M euro). Half of the total value of all transactions was caused due to large fundings in startups Brainly (67m euro), Booksy (59m euro), and ICEYE (74 m euro). Moreover, 88 percent of investment rounds is pre-seed and seed deals (278 round in 2020). Compared to 2019, we can observe a 10-percent increase for early-stage investments that confirms the fast-growing trend of the Polish startup ecosystem. Ukraine saw 1,5 times jump in VC funding in 2019, with \$509,9 m, but 87% of all VC investments in 2019 were made on the growth stage and only 2,3% for pre-seed and seed rounds. The average ticket by seed-stage investment is low (\$431K), and 42 deals were marked in 2019 for early-stage rounds. Hence, growth trend investment remains the same for Ukraine (in Poland, about half of total value – pre-seed and seed stage). Analyzing the capital structure of Ukraine 2019, it is worth noting that 89% invested by the USA findings (growth stage startups) and only 2% by Ukrainian VC players. In 2019 Polish funds have invested 58% in Polish companies, and in 2020, almost 52%. Also, about 55% value of transactions was supported by public programs in Poland, so the VC market in Poland is mostly invested by public funds.

Ukrainian startup Fund is the largest angel public investor in Ukraine, which supports early-stage technological startups. In 2020 it was granted in startups about \$3M equity-free. 81% of investors point out that there are enough startups in Ukraine, but private VC investors are still limited. TOP-5 VC funds made 87% of all VC investment transactions in 2019.

– *human capital*. This dimension describes skilled and unskilled labor, specific entrepreneurship trainings, general degrees. Thus, IMD World Talent Ranking 2020⁴ describes the ability of an economy to attract talent and develop a talent pool in a society. Therefore, it determines the competitiveness of economies with respect to talent. Overall performance of Poland is 35, and Ukraine occupies 42nd position. For both countries, the common strength are the *Pupil-teacher ratio: primary education* and *secondary education*. In general, the low value of *Cost-of-living index* contributes to retaining “homegrown talent” in Ukraine and Poland respectively. However, in Ukraine, the following factors like *Quality of life* (2.63) and *Justice* (2.11) cause a high value of *Brain drain* (2.43). Furthermore, according to the IMD World Talent Ranking 2017, Ukraine was *Net exporter of talent*. Also, despite the fact of huge percent of *Total public expenditure on education* (5,9% GDP), *University education* does not meet the needs of a competitive economy (4.08 score).

It is important to note that Ukraine has a potential for high-quality specialists in *Graduates in Sciences* (% of graduates in ICT, Math and Natural Science, Engineering – 25,38%) and *Skilled labor* (5.7 scores). *Employee training* is a high priority for Polish companies (6.49 score), which could effectively maintain a domestic talent pool.

– *culture*. This dimension involves analysis of entrepreneurial culture, including tolerance for risks, mistakes, failure, social status of entrepreneurs. To make a comparative analysis for Poland and Ukraine, we will use Hofstede’s cross-cultural concept (see Figure 4).

¹ The World Bank (2021). *Doing Business 2020* <<https://www.doingbusiness.org/en/reports/global-reports/doing-business-2020>> (2022, January, 15).

² UVCA and Deloitte (2020). *Ukrainian Venture Capital and Private Equity Overview 2019 report* <<https://www2.deloitte.com/ua/en/pages/press-room/press-release/2020/investments-into-startups-2019.html>> (2022, January, 15).

³ PFR Ventures (2021). *Polish VC market outlook 2020* <<https://pfrventures.pl/en/news/polish-VC-market-outlook-2020.html>> (2022, January, 15).

⁴ IMD: Institute for Management Development (2021). *IMD World Talent Ranking 2020* <<https://www.imd.org/wcc/world-competitiveness-center-rankings/world-talent-ranking-2020/>> (2022, January, 15).

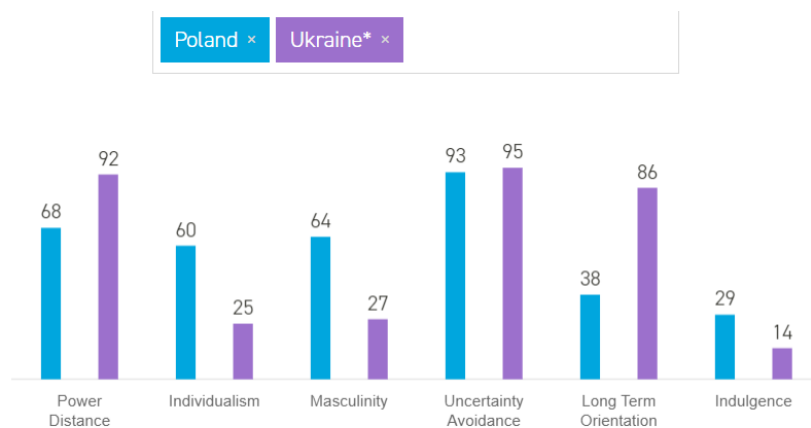


Figure 4. Cross-cultural comparison of Poland and Ukraine based on Hofstede’s concept

Source: <https://www.hofstede-insights.com/country-comparison/poland,ukraine/>

Ukraine is characterized as a centralized country (Power Distance Index 92), which confirms distance in society and the importance of power symbols¹. It impacts business interactions. In particular, it is needed clear mandates for the tasks and the status role during negotiations and cooperation. With a score of 68, Poland has less power distance and a hierarchical society.

Ukraine is a collectivist society. People prefer to belong to "in groups". Personal and trustful relationships are key in obtaining information or successful negotiations. Therefore, Poland scores 60 on this dimension and is considered a more individualist society. According to this research, Poland is a Masculine society, were highly regarded competition, performance, assertiveness in business. Ukraine’s score is 25 on these dimensions. Thus, it is acceptable in society to underestimate personal contributions and achievements. Poland and Ukraine have a very similar score on the *Uncertainty avoidance* dimension (93 and 95, respectively). It means that both societies prefer avoiding uncertainty and trying to keep rules make detailed business plans. Business relationships very often are formal and distant. Also, Ukraine has a very pragmatic culture, and Poland is a more normative society. In general, Ukrainians still lack an entrepreneurial mindset, but the younger generation is more open to starting their businesses.

– *infrastructure support*. Research and development commercialization base in Poland includes technology transfer centers, science/tech/industrial parks, venture capital funds, incubators, accelerators, etc. Approximately 19 leading technical universities and 25,8% of graduates from these universities confirm the potential of tech domain development in Poland. Ukraine has a variety of innovation infrastructure elements, which are presented in Table 2.

Table 2

Innovation infrastructure in Ukraine

Innovation infrastructure element	Number of registered units
Science park	26
Technology park	16
Industrial parks	40
Technology transfer centres	24
Centres for intellectual property commercialization	38
Innovative incubators	24

Source: *Sub-regional innovation policy outlook 2020:Eastern Europe and the South Caucasus (UNECE)*

¹ Hofstede (2022). *Hofstede’s cross-cultural concept* <<https://www.hofstede-insights.com/country-comparison/poland,ukraine/>> (2022, January, 15).

As noted in Sub-regional innovation policy outlook 2020: Eastern Europe and the South Caucasus report¹ “some of these organizations are not operational due to the lack of finances, leaving the number of active elements unknown”. In addition, the SME support infrastructure consists of 67 registered business incubators. However, 24 specifically target innovative enterprises (Ukraine, 2019a). The USAID business incubators projects in Ukraine offer opportunities for startups to attract venture funding. High-Tech Office Ukraine is a union of high-tech enterprises whose goal is to create favorable conditions for developing innovative business and digital economy in Ukraine, providing business incubation and acceleration services. Many innovation hubs ensure innovation space for training and development of local IT initiatives – incubation programs and startup workouts (1991 Mariupol), impact Hub community (Odesa) aimed at supporting cooperation and entrepreneurial innovation. One of the most successful examples of private sector initiatives is Unit.City. Innovation park comprises three investment funds, eight accelerators, four laboratories, and pretends to be one-point entry into Ukraine for investors, network partners, and new technology.

Coworking space is defined as shared office space and increases networking opportunities for startups. There are about 5.5 million square meters. office space in Warsaw, which 3.5 million were built over the past ten years, i.e., are modern in terms of ventilation, heating, infrastructure. In Kyiv, about 2 million square meters. areas, of which only 400 thousand sq.m. built over the last ten years. IT specialists rent about 50% of office space, and there is a tendency to increase the number of IT developers in Ukraine. Indeed, COVID-19 impacts the increasing trend of remote work; however, even under a flexible employment model (work in the office on a part-time basis), a need for additional coworking space in Ukraine remains.

Conclusions. Based on conducted analysis of entrepreneurial ecosystems, we can conclude that the Ukrainian entrepreneurial ecosystem refers to the first type of its development. The first type is characterized only by supporting individual entrepreneurship through grant funding, startup competitions, internships, educational activities, hackathons, etc. According to the classification presented by the researcher (Harrington, 2016)², entrepreneurial ecosystems of the second type are characterized by the development of venture business (active support from investors, engagement of risky technological projects implementation, and corporate innovation initiatives). And the highest level of entrepreneurial ecosystem development involves the economic development of the ecosystem in general (regional and national level) – a developed business infrastructure with significant public financial support. Hence, Poland’s entrepreneurial ecosystem could be defined as the second type of its development. Finally, comparative analysis suggests that potential mutual partnership between stakeholders of the Polish and Ukrainian entrepreneurial ecosystem (investor-startup-business incubator/accelerator – policymaker) enriches long-term results for both countries based on a win-win strategy.

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¹ Sub-regional innovation policy outlook (2020). *Eastern Europe and the South Caucasus (UNECE), report*. Geneva.

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