

**LODETERMINANTS OF THE DEVELOPMENT  
OF START-UP UNDERTAKINGS IN THE CONTEXT  
OF ECONOMIC SECURITY OF POLISH ECONOMY**

**UWARUNKOWANIA ROZWOJU PRZEDSIĘBIORSTW  
ROZPOCZYNAJĄCYCH DZIAŁALNOŚĆ W KONTEKŚCIE  
BEZPIECZEŃSTWA EKONOMICZNEGO POLSKIEJ GOSPODARKI**

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**Abstract:** The study focuses on the problem of determinants of the development of start-up undertakings in Poland in the context of ensuring economic security. It analyses the term start-up, assesses the condition and directions of start-up business activity and discusses the actions taken in order to create the so called start-up environment in selected Polish cities. Identification and analysis of the determinants of start-up undertakings have been conducted with a division into internal ones, relating to the subjectivity of the entrepreneur and his role in the economy, and external ones, which generally comprise the human and social capital, legal regulations, institutional environment and financing. It is argued that the primary source of entrepreneurial behaviour are internal determinants in contrast to external ones, such as legal regulations or sources of financing.

**Streszczenie:** Opracowanie koncentruje się na problemie uwarunkowań rozwoju nowych przedsiębiorstw w Polsce w kontekście zapewnienia bezpieczeństwa ekonomicznego. W artykule poddano analizie termin „start-up”, oceniono kondycję i kierunki zakładania działalności gospodarczej oraz omówiono działania podejmowane w celu stworzenia w wybranych miastach Polski tzw. środowiska startupowego. Identyfikacji i analizy uwarunkowań przedsięwzięć typu start-up dokonano z podziałem na wewnętrzne, dotyczące podmiotowości przedsiębiorcy i jego roli w gospodarce, oraz zewnętrzne, na które składają się na ogół kapitał ludzki i społeczny, regulacje prawne, otoczenie instytucjonalne i finansowanie. Argumentuje się, że podstawowym źródłem zachowań przedsiębiorczych są uwarunkowania wewnętrzne, w przeciwieństwie do uwarunkowań zewnętrznych, takich jak regulacje prawne czy źródła finansowania.

**Keywords:** enterprise, economy, start-up, economic security.

**Słowa kluczowe:** przedsiębiorstwo, gospodarka, start-up, bezpieczeństwo ekonomiczne.

## Introduction

Literature provides various ways of understanding economic security and differentiating its levels.<sup>3</sup> For the purpose of this study, the essence of economic security is expressed in a definition proposed by Z. Kołodziejak, in accordance with which it is the ability of the country's economic system to make use of the internal factors of development and international economic interdependence in a manner that guarantees its undisturbed development<sup>4</sup>. Thus, the term economic security is used to refer to projects implemented at the economic level which are to ensure relative freedom of shaping the business processes in compliance with the interests of the nation (state)<sup>5</sup>. The above quoted interpretations of economic security fit into the context of development of knowledge-based and globally competitive economy, capable of using internal factors of development that guarantee civilisation progress, in line with society's expectations. Economic security is also perceived through the

<sup>3</sup> A. Lubbe, *Bezpieczeństwo ekonomiczne państwa*, "Sprawy Międzynarodowe" ("International Affairs") 1997, Vol. 4.

<sup>4</sup> E. Frejtag-Mika, Z. Kołodziejak, W. Putkiewicz, *Bezpieczeństwo ekonomiczne we współczesnym świecie*, Publishing House of the Kazimierz Pułaski University of Technology and Humanities in Radom (Wydawnictwo Politechniki Radomskiej im. K. Pułaskiego), Radom 1996, p. 10.

<sup>5</sup> F. Majchrzak, *Bezpieczeństwo ekonomiczne a teoria wojny gospodarczej*, [in:] *Bezpieczeństwo ekonomiczne. Teoria i praktyka*, ed. Z. Kołodziejak, Publishing House of the University of Łódź (Wydawnictwo Uniwersytetu Łódzkiego), Łódź 1986, p. 46.

prism of its shaping factors, and in this context, a special place in the development of knowledge-based economy is occupied by start-up undertakings. Their importance is determined by innovative use of new technologies and innovativeness. Thanks to unique business models, they are capable of capturing domestic and international markets within a relatively short time. Besides, owing to an innovative profile of start-up activity, the channels through which they impact the economy and the society are more diverse than in case of the other groups of enterprises<sup>6</sup>. The most important channels through which start-ups exert socio-economic impact include: creation of added value in the economy, creation of worthwhile jobs, generation of household income, increasing the human and social capital, impact of innovative products and services provided by start-ups on the quality of life as well as the positive external effects of innovation (spillover effects)<sup>7</sup>.

In the light of the above considerations, this paper poses the thesis that today, development of start-up enterprises will to a large extent be a guarantor of economic security. For Polish economy, start-ups are particularly desirable because of the distance separating Poland from innovation leaders. According to the 2016 Innovation Union Scoreboard report, Polish economy is one of the European Union's least innovative economies – its innovation index, on a 0-1 scale, is 0.292. Poland occupies the 6th place from the end<sup>8</sup>, although it has noted a relative improvement over the last two years. In this context, the issue of determinants of the development of start-up enterprises should be regarded as particularly important. The need for in-depth studies in this respect is also justified by the results of research conducted by Deloitte which show that, against the background of forty most developed economies in the world, the maturity of the Polish start-up ecosystem is below an average level<sup>9</sup>. This situation probably has an impact on a relatively low number of start-ups established in Poland in contrast to other countries. For comparison, according to the 2015 World Bank data, in Poland there are 0.27 start-up undertakings per 100 thousand inhabitants, while in Germany this ratio is 1.3, and in Israel (often referred to as a hotbed for start-ups) it is at the level of 8.9<sup>10</sup>.

<sup>6</sup> *Diagnoza ekosystemu startupów w Polsce*, 2016 Deloitte Report, p. 85. [www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl\\_Deloitte\\_raport\\_startup.pdf](http://www2.deloitte.com/content/dam/Deloitte/pl/Documents/Reports/pl_Deloitte_raport_startup.pdf); date of access 10 September 2017; As estimated by Deloitte, start-ups stand a chance to generate in 2023 over PLN 2.2 billion of added value, overall, i.e. in a direct, indirect and induced manner. In the same year, start-ups will create in Poland a total of over 50.3 thousand jobs; [www2.deloitte.com/pl/pl/pages/press-releases/articles/polskie-startupy-maja-coraz-lepsze-warunki-rozwoju.html](http://www2.deloitte.com/pl/pl/pages/press-releases/articles/polskie-startupy-maja-coraz-lepsze-warunki-rozwoju.html), date of access 31 August 2017.

<sup>7</sup> *Ibidem*, pp. 85-86.

<sup>8</sup> European Innovation Scoreboard 2016. European Union, Belgium 2016.

<sup>9</sup> *Model dojrzałości ekosystemu start-upów w Polsce*, Deloitte, wrzesień 2017.pdf

<sup>10</sup> V. Makarenko, *Planeta startupów. Pomysły rodzą się nie tylko w Dolinie Krzemowej*, 2015 World Bank, Crunch Base, data from 26 January 2015, <http://biqdata.wyborcza.pl/planeta-startupow-pomysly-rodza-sie-nie-tylko-w-dolinie-krzemowej> [date of access: 17 August 2017].

In the light of the above considerations, the purpose of the study is to identify the determinants of the development of start-up companies in Poland, with particular emphasis on the subjectivity of the entrepreneur. Hence, the determinants will be divided into internal (relating to the subjectivity of the entrepreneur) and external ones (shaping the start-up ecosystem). The literature on the subject mainly analyses the determinants creating the start-up ecosystem, i.e. the external environment that is either conducive to or limits the establishment and development of such entities. Relatively fewer studies focus on the entrepreneur himself in the context of entrepreneurial behaviour.

The paper is a review based on analysis of the literature on the subject and own observations of the Authors.

## 1. The concept and essence of the start-up company

In the literature on the subject, there is a consensus of opinion that there exists no unambiguous definition of a start-up, and that it is a multi-faceted concept. By many authors a start-up is perceived as a new business undertaking or its initial stage, which is confirmed by the meaning of the term provided in Business Dictionary, where a start-up is defined as an early stage in the enterprise life cycle, in which an entrepreneur moves from the idea stage to the financing stage, establishing the basic business structure and initiating the operations and sales activity<sup>11</sup>. However, not every company that begins its business activity is a start-up. Its main feature should be an innovative character of the idea that is introduced into the economy. According to J. Schumpeter, only such activity deserves to be called entrepreneurial. Entrepreneurial behaviours may be also associated with conditions of uncertainty (according to the F. Knight's theory). This is confirmed by the standpoint developed by Eric Ries, the creator of the start-up concept and the author of *The Lean Startup* manual<sup>12</sup>, who explains that "a start-up is a human institution designed to create new products and services under conditions of extreme uncertainty"<sup>13</sup>. An institution formed by a creative and ambitious team of young people, acting together as part of an innovative undertaking that has never before existed in the market – which is what differentiates it from typical business activity.

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<sup>11</sup> Business Dictionary, <http://www.businessdictionary.com/definition/startup.html>, [access: 19 July 2017].

<sup>12</sup> *The Lean Startup* manual is commonly regarded as the 'bible for start-up alumni', which is evidenced by its presence in the New York Time best-seller list.

<sup>13</sup> K. Andrulonis, *Co to jest startup i jak się za to zabrać?*, [http://europa.eu/youth/pl/article/58/30350\\_pl](http://europa.eu/youth/pl/article/58/30350_pl) [date of access: 20 July 2017].

According to Dan Norris, a start-up is a venture characterised by huge potential for having broad impact, high level of innovation and high uncertainty<sup>14</sup>. As defined by the Indian Institute of Foreign Trade, start-ups are young enterprises promoted as entrepreneurs beginning their first activity. An entrepreneur or a group of entrepreneurs/specialists having knowledge/experience, knowledge or know-how, etc., who usually become the driving force of such undertakings, have highly developed entrepreneurial skills and high degree of risk taking ability. Such companies, in particular high-tech start-ups need support and encouragement from different perspectives, both in the initial phase and during the growth period, until they become competitive<sup>15</sup>.

A somewhat different view is presented by S. Blank and B. Dorf, who describe a start-up as a temporary organisation formed to search for a scalable, repeatable and profitable business model<sup>16</sup>.

As part of a practical approach, it can be assumed that a start-up is a business undertaking, which from the economic perspective, needs to be quickly developed and transformed into a business entity generating above-average profits and focused on further increasing its value<sup>17</sup>. Nowadays, fairly popular is a definition that combines two aspects: start-up activity and innovative technology, with emphasis on industries associated with information technology – IT and information and communication technology – ICT. According to the definition of the Startup Poland Foundation – a start-up is a venture that meets at least one of the two conditions: belongs to the digital economy sector, which means that information processing or related technologies constitute one or more of key elements of its business model, or creates new IT/ICT solutions<sup>18</sup>. Although the vast majority of today's start-ups have their roots in technology sectors, it does not exclude the emergence of innovation in other industries or sectors of the economy. This is evidenced by data included in Table 1, which show differences between start-ups (that make use of new technologies) and other newly established companies. The second group is dominated by companies that operate in such sectors as: agriculture, forestry and fishing, mining and construction, wholesale trade, retail trade, public administration, health care, education and social services. The first group is dominated by companies operating in the information and communication, administrative services and service activity support sectors (Table 1).

<sup>14</sup> D. Norris, *Start-up w 7 dni: od mocnego startu do szybkiego sukcesu*, Gliwice 2015.

<sup>15</sup> M. Laszuk, *Przedsięwzięcia typu start-up*, [in:] A. Kałowski, J. Wysocki (ed.), *Start-up a uwarunkowania sukcesu wymiar teoretyczno-praktyczny*, Warszawa 2017, p. 26.

<sup>16</sup> S. Blank, B. Dorf, *Podręcznik startupu. Budowa wielkiej firmy krok po kroku*, Gliwice 2013, p. 19.

<sup>17</sup> M. Laszuk, *Przedsięwzięcia typu start-up*, [in:] A. Kałowski, J. Wysocki (ed.), *Start-up a uwarunkowania sukcesu wymiar teoretyczno-praktyczny*, Warszawa 2017, p. 10.

<sup>18</sup> A. Skala, E. Kruczkowska, *Raport Polskie startupy 2016*, Startup Poland Foundation, Warszawa 2016, p. 12.

Table 1. Activity of newly established companies by sectors in Poland (%)

Sectors of the economy	Start-ups	Other newly established companies
agriculture, forestry, fishing	0.7	2.2
mining, construction	9.7	13.1
Production	6.9	6.1
transport, warehousing, disposal	4.1	3.9
Trade	2.8	5.3
retail trade, hotels, restaurants	7.6	10.0
information and communication	8.3	2.9
financial agency services, real estate trading	2.8	2.9
professional services	38.6	37.1
administrative services	4.1	2.2
public administration, health care, education, social services	11.7	12.9
service activity support	2.8	1.5

Source: Global Entrepreneurship Monitor 2016, p. 57-58

In Poland, a start-up is considered a business entity which complies with a start-up definition and is registered in Poland or at least one of its founders is a Polish citizen. In the latter case, an additional condition must be met, i.e. a start-up must, at least partly, conduct its activity in Poland (for example: software production). A branch of a company whose headquarters are located abroad is not a Polish start-up<sup>19</sup>.

On the other hand, a European definition of a start-up company, included in the Italian Law 221/2012 specifies the following features of a start-up<sup>20</sup>:

- has operated for no more than 4 years (after this period, it is treated as an ordinary enterprise),
- has its headquarters in Italy (nationality of the founders is not important),
- achieves an annual income of no more than EUR 5 million,
- does not pay dividends,
- develops and sells highly technologically advanced product or service (hence, a restaurant, service outlet or a company that conducts traditional activity could not be considered a start-up),
- has not been established as a result of a division of any other enterprise, is not a spin-off, and has not been established as a result of sales of a part of another enterprise or its sales as a whole.

19 A. Skala, E. Kruczowska, op. cit., p. 12.

20 *Przedsiębiorczość start-upowa. Bank pomysłów dla polityków i samorządowców*, Ministry of Foreign Affairs, Warszawa 2017, p. 7.

The main goal of a start-up undertaking is to test the value of an idea it has created, and its development based on the achieved income. The second variant indicates the use of this test to attract an investor, dynamic development, only then followed by achieving income. The third variant involves developing the idea until such moment when the company manages to convince an investor to take it over (buy it in whole)<sup>21</sup>.

In accordance with research presented in the Polish 2015 Global Entrepreneurship Monitor report –an owner of a start-up is typically as a young person, who has established or has been conducting business activity for no more than 3.5 years, and who uses for this purpose new technologies (not older than 5 years). Data presented in Diagram 1 confirm that the percentage of start-up owners aged 18-24 is as high as 27% compared to 9% in case of other newly established companies.

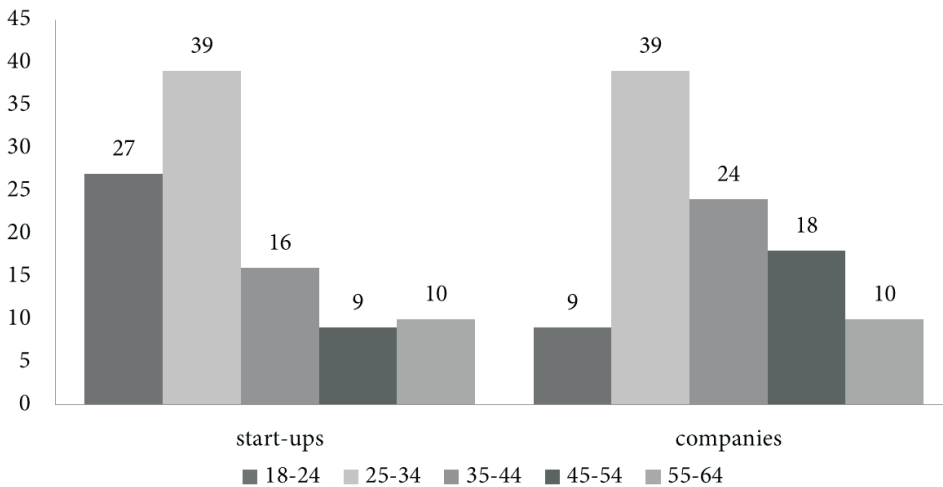


Fig. 1. Age structure of owners of start-ups and newly established companies (%)

Source: Own work on the basis of Global Entrepreneurship Monitor 2016, p. 53

## 2. The map of the development and support of start-up undertakings in Poland

Experiences of developed economies show that development of innovative business entails the provision of appropriate support through the creation of the so called start-up ecosystem. This term refers to shaping an environment of cooperation of various entities as regards the creation of conditions favourable to the establishment

<sup>21</sup> M. Laszuk, *Przedsięwzięcia typu start-up...*, p. 19.

and development of new innovative enterprises.<sup>22</sup> Thus, the ecosystem comprises business environment institutions, higher education institutions, technology incubators, investors, start-up financing sources (in the form of: subsidies, grants, preferential loans or venture capital), as well as state policy.

Making use of other countries' experiences, Poland implements many solutions that provide support to start-up activity<sup>23</sup>.

The most developed cities in Poland in terms of projects implemented with a view of providing support for start-up companies include: Warsaw, Wrocław, Gdańsk, Kraków and Poznań, although many parallel events also take place in Katowice, Białystok and Bydgoszcz.

Table 2 presents the most important features and examples of actions stimulating the establishment of start-up businesses.

The information presented in Table 1 shows that the Polish big cities have developed ecosystems that provide a wide range of opportunities to use the support programs, co-financing offers, assistance provided by incubators or technology parks and conducive to the establishment of start-up companies. Such favourable conditions are reflected in the ever-growing number of start-ups – in accordance with the results of the 2015 Startup Poland Foundation report 2.4 thousand<sup>24</sup>, and in 2016 more than 2.7 thousand start-ups (exactly 2 677)<sup>25</sup>.

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<sup>22</sup> Today, the hotbed of start-up owners is legendary Silicon Valley, situated in the northern part of the Santa Clara Valley in California. This is where creative young people transform their seemingly unrealistic ideas and concepts into dynamically developing and profitable businesses. The largest world IT enterprises are based in Silicon Valley. The headquarters of such giants as Adobe, Apple, eBay, Facebook or Google are located there. The success of Silicon Valley lies in creating the conditions conducive to the development of new innovative ideas, inter alia, through a very well organised ecosystem that supports start-up entrepreneurship, *Start-upowa Polska Wschodnia*, Portal Funduszy Europejskich, [www.funduszeuropejskie.gov.pl/strony/wiadomosci/startupowa-polska-wschodnia/](http://www.funduszeuropejskie.gov.pl/strony/wiadomosci/startupowa-polska-wschodnia/).

<sup>23</sup> For example: Start-Up Revolution Days (SRD) following the example of a London venture, whose purpose is to create a 'bridge' between Polish and other dynamically developing start-up ecosystems – the Berlin and Tel Aviv ones (the Warsaw edition was held between 18 and 19 June 2015, then – between 1 and 2 October 2015 in Berlin and between 24 and 25 February 2016 in Tel Aviv); A. Rzetelski, *Startup Revolution Days łączy ekosystemy start-upowe*, The Polish Agency for Enterprise Development (PARP), [http://www.web.gov.pl/aktualnosci/699\\_4655.html](http://www.web.gov.pl/aktualnosci/699_4655.html) [date of access: 24 July 2017].

<sup>24</sup> A. Skala, E. Kruczkowska, M.A. Olczak, *Polskie Startupy Raport 2015*, Startup Poland Foundation, Warszawa 2015, p. 7.

<sup>25</sup> A. Skala, E. Kruczkowska, *Raport Polskie Startupy 2016*, Startup Poland Foundation, Warszawa 2017, p. 10.



Table 2. The largest start-up centres in Poland and their specific features

Cities	Specific features
Warsaw	<ul style="list-style-type: none"> <li>– the key role of the capital city in the rankings of economic initiatives targeted at start-ups,</li> <li>– the city has the most numerous group of technology incubators, centres for training and technology transfer,</li> <li>– the area of approx. 80% of innovative enterprises from the Mazovia region.</li> </ul>
Wrocław	<ul style="list-style-type: none"> <li>– actions of the authorities focus on promoting the activity of the incubators of entrepreneurship, technology centres and parks,</li> <li>– noticeable activity of administration bodies, including Dolnośląska Agencja Współpracy Gospodarczej (the Lower Silesian Agency of Economic Cooperation) or the Lower Silesian Incubator of Entrepreneurship.</li> </ul>
Gdańsk	<ul style="list-style-type: none"> <li>– actions taken by the city to support the start-up environment, initiated by Gdańska Fundacja Przedsiębiorczości (Gdańsk Entrepreneurs' Foundation), and then Gdańsk Entrepreneurship Incubator,</li> <li>– establishing cooperation and strengthening relations between local entrepreneurs and Silicon Valley mentors performing the role of experts in acceleration programs, and on the other hand, speakers at the InfoShare conference,</li> <li>– actions conducive to the development of business undertakings possible due to efficient operation of the Pomeranian ICT Cluster.</li> </ul>
Kraków	<ul style="list-style-type: none"> <li>– the city of start-up initiatives with many entrepreneurial events engaging the science and business environment as well as public and local administration,</li> <li>– an example of a voivodeship capital with highly developed cooperation between public institutions, including city halls, and Academic Business Incubators.</li> </ul>
Poznań	<ul style="list-style-type: none"> <li>– attractive location of the city, from business perspective, and large developmental potential translate into effects in the form of a wide range of innovative projects,</li> <li>– the city supporting entrepreneurship initiatives, a sponsor of many business events, the Adam Mickiewicz University Foundation which operates the Poznań Science and Technology Park, ensuring, together with the InQubar centre, support for all start-up initiatives and undertakings.</li> </ul>

Source: Own work on the basis of A. Kałowski, J. Góral, *Ekosystemy startupowe*, [in:] A. Kałowski, J. Wysocki (ed.), *Start-up a uwarunkowania sukcesu – wymiar teoretyczno-praktyczny*, Warszawa 2017, pp. 238-239

### 3. Internal and external determinants of start-up development

Focussing on external determinants that characterise the so called start-up ecosystem may be important, buy it does not fully reflect the essence of the problem, because it eliminates the discussion of motives, sources and conditions implied by personality features and the value system of an entrepreneur. Numerous theoretical studies and empirical analyses in the field of entrepreneurship formulate the view that entrepreneurship is not only a category dominated by the quantified economic goal, but also by the creative human freedom. It is ascertained that entrepreneurship

has not only an economic, but also the personal, social and cultural dimension<sup>26</sup>. According to the viewpoint presented by J. Schumpeter, an entrepreneur introduces innovations which are a new combination of factors of production. Thus, his specific task in the economy consists in breaking with the old tradition and creating a new one, in 'creative destruction'<sup>27</sup>, which determines economic progress. In their essence, start-ups are a specific object of creative destruction, and the source of their success mainly lies in the entrepreneur who, convinced of exercising cognitive and causal control of the reality, makes innovative changes thereto. The other features that are emphasised include courage in making decisions and taking risks, ability to cooperate, establish relations based on trust and responsibility. The primary source of entrepreneurial behaviour is therefore in the attitudes and motivations of people, and these are determined by social and cultural factors.<sup>28</sup>

In the studies carried out as part of the Global Entrepreneurship Monitor – Poland 2015, the motivation that guides entrepreneurs who start their business activity can be based on an intention to use a business opportunity or result from necessity, when starting a business is a consequence of unemployment or insufficient qualifications to get the expected job. Entrepreneurs may also have mixed motivations (Diagram 2).

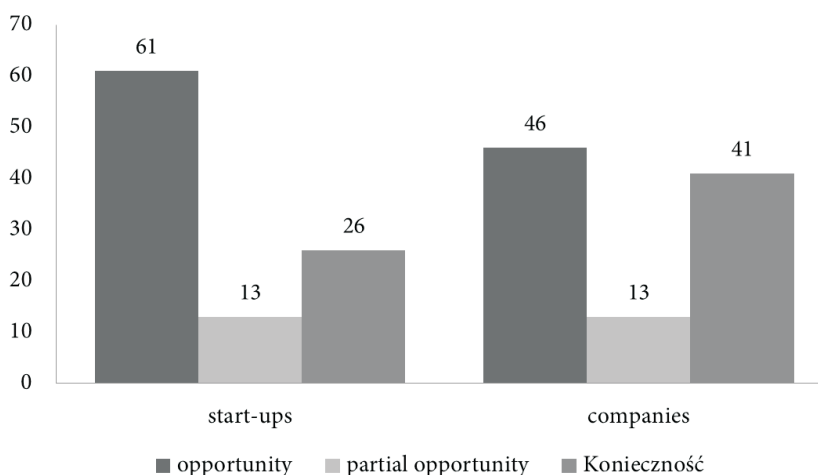


Fig. 2. Motivation of owners of start-ups and other newly established companies (%)

Source: Own work on the basis of Global Entrepreneurship Monitor 2016, p. 54

<sup>26</sup> K. Jaremczuk (ed.), *Uwarunkowania przedsiębiorczości*, State Higher Vocational School Memorial of Prof. Stanisław Tarnowski in Tarnobrzeg (PWSZ im. S. Tarnowskiego w Tarnobrzegu), Tarnobrzeg, 2004, p. 16.

<sup>27</sup> J. Schumpeter, *Teoria rozwoju gospodarczego*, National Scientific Publishers [after 1991, Polish Scientific Publishers] (PWN), Warszawa 1960, p. 147.

<sup>28</sup> Szerzej: B. Berger (ed.), *Kultura przedsiębiorczości (Entrepreneurial Culture)*, Oficyna Literatów "Rój", Warszawa 1994.

The data presented in Diagram 2 show significant differences in the motivation of owners of start-ups and the other newly established enterprises. Start-up owners are much more often guided by an intention to make use of a business opportunity – the difference is 15 percentage points (61% compared to 46%). The percentage of start-ups guided by necessity is lower by a similar value (15 pp). These results show that business is much more often focussed on a specific idea – an opportunity that can be used in case of start-up undertakings. However, according to the authors of the GEM Report, an opportunity- guided motivation at 60% is not a high result in comparison with the other countries. In most developed economies, average motivation of this type among all entrepreneurs is at a higher level<sup>29</sup>.

Personality features that predestine to start-up undertakings include the risk-taking tendency (understood rather as courage to take up business activity, due to the fact that such activity is characterised by a high level of uncertainty). The fear of failure is thus an important internal determinant of start-up undertakings, directly dependent on the entrepreneur<sup>30</sup>.

The data presented in Diagram 4 show that in case of start-ups, the fear of failure is experienced less often as compared to the other newly established enterprises. In the first group, a third of respondents (33%) reported the feeling of fear, while in the second group it was 44%.

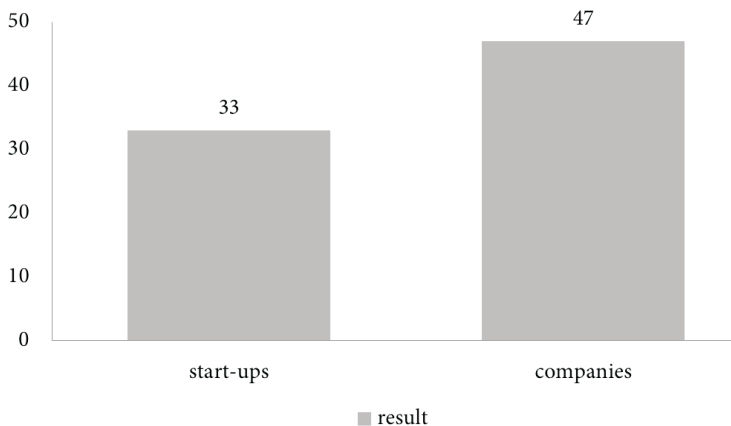


Fig. 3. The fear of failure among entrepreneurs using new technologies and other newly established companies (%)

Source: Global Entrepreneurship Monitor 2016, p. 59

<sup>29</sup> Global Entrepreneurship Monitor Polska 2015, Polish Agency for Entrepreneurship Development (PARP), Warszawa 2016, p. 55.

<sup>30</sup> The fear of failure is one of the determinants of the level of entrepreneurship and in Poland it assumes one of the highest values in the world (60%); Global Entrepreneurship Monitor Poland 2015, the Polish Agency for Entrepreneurship Development (PARP), Warszawa 2016, p. 59.

The above discussed selected determinants of start-up undertakings, although they undoubtedly constitute the primary source of such behaviours (resulting from the adopted attitudes, recognised values and motivations), are not sufficient conditions for the expansion of business activity based on new technologies and innovations. It is also necessary to create favourable external conditions (e.g. well-functioning law, scope of support in terms of access to forms and sources of financing, development of institutional environment, education, etc.). The study carried out by Deloitte consulting company provides results of analysis concerning assessment of the development and maturity of the ecosystem of start-up undertakings in Poland. It has characterised the key areas to ensure sustainable start-up development, such as: the sources of financing, legal regulations, human and social capital and institutional environment. The assessment carried out in a 4-point scale (1 – the lowest score, 4 – the highest score) shows that<sup>31</sup>:

- Poland is the most successful in such fields as legal regulations (score 2.55) and institutional environment (score 2.5);
- the least developed fields in Poland are: social capital (score 1.5) and financing (score 1.68);
- while human capital is moderately developed (score 2.27).

The results of the report show, however, that against the background of the most developed world economies, the maturity of the Polish start-up ecosystem is below the average level. The particularly low level of social capital reflects the influence of culturally determined social behaviours marked to a large extent by a legacy of the Communist era. It manifests itself in low levels of trust, a lack of cooperation skills, insignificant involvement in social life and dislike of risk. The fairly low score obtained by Poland in the area of financing is mainly an effect of little savings in the economy and insufficient tendency to take risks and adopt an active approach on the part of investors, including business angels or venture capital funds<sup>32</sup>.

With reference to the problem of financing for start-up undertakings, it is indicated that they are relatively less developed in Poland than in Germany or Israel. The result of the current state of affairs may be: low level of savings among the society, few business angels, availability of venture capital funds or skilful use of alternative sources of financing in the form of crowdfunding.

The institutional environment in Poland is characterised by a kind of moderation. It is possible to point out uneven development, from the perspective of the most developed cities in Poland in terms of entrepreneurship and initiatives focused on innovation. At this point, it is worthwhile to emphasise an active role of the government administration, which through a number of programs provides support, and thus contributes to the development of start-up environment.

<sup>31</sup> Diagnoza ekosystemu startupów w Polsce, Raport, Deloitte, 2016, p. 5.

<sup>32</sup> Ibidem.

## Conclusion

Innovative start-up undertakings to a significant extent determine the innovation and competitiveness of modern economies. Despite their specific character associated with a high degree of risk and uncertainty, they are, in essence, a guarantor of economic security, because they lead to the development of a strong economy. The capabilities of the Polish economic system in the use of endogenous development factors should be strengthened, as evidenced by the analysis of the determinants for the establishment and operation of start-ups. Internal determinants relate to the entrepreneur and its subjectivity, that is the sense of authorship and influence on the surrounding reality by initiating and implementing changes of innovative character. The success of a start-up mainly depends on the quality of human and social capital. Cultural values are stronger than the weight of other determinants forming elements of the so called start-up ecosystem (law, institutions, sources of financing), which may strengthen or weaken the internal motivation and the level of entrepreneurial aspirations, in particular among young entrepreneurs. The deepening crisis of social capital in Poland, as evidenced by the second edition of the study “Diagnosis of the Start-Up Ecosystem in Poland” carried out by Deloitte consulting company in 2017<sup>33</sup>, constitutes a serious barrier to newly established start-ups.

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<sup>33</sup> The level of social capital decreased from 1.5 to 1.35; Forum Ekonomiczne Deloitte (Deloitte Economic Forum); [www2.deloitte.com/pl/pl/pages/press-releases/articles/polskie-startupy-maja-coraz-lepsze-warunki-rozwoju.html](http://www2.deloitte.com/pl/pl/pages/press-releases/articles/polskie-startupy-maja-coraz-lepsze-warunki-rozwoju.html); date of access: 5 September 2017.

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