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### MACRO-LEVEL ENTREPRENEURSHIP EVALUATION: METHODOLOGICAL LIMITATIONS VERSUS RESEARCH NEEDS\*

## EWALUACJA PRZEDSIĘBIORCZOŚCI NA POZIOMIE MAKRO: OGRANICZENIA METODOLOGICZNE I POTRZEBY BADAWCZE

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**Summary:** The purpose of the article is to present the results of the study on entrepreneurship and its evaluation at macro-level. The study is conducted in the context of the imperfections of indicators used and future research needs. The methods applied in the study are: the analysis and criticism of the literature on the subject. The starting point for the study is to conceptualize the entrepreneurship comprehensively. Then the article presents used measures of the entrepreneurship. Finally, there is an attempt to identify the directions for future research on entrepreneurship at macro-level. The query of literature on defining entrepreneurship and its measurement did not bring unambiguous results. Entrepreneurship is an extremely complex issue that causes a lot of methodological limitations. Establishing a modular indicator at country level can determine the development of the entrepreneurship research in general. It can have key meaning from cognitive as well as applied perspective.

**Keywords:** entrepreneurship, macro-level, entrepreneurship of the country, GEM.

Streszczenie: Celem artykułu jest przedstawienie wyników badania dotyczącego przedsiębiorczości i jej oceny na poziomie makro. Badanie prowadzone jest w kontekście niedoskonałości użytych dotychczas wskaźników i przyszłych potrzeb badawczych. Metody zastosowane w badaniu to krytyczna analiza literatury przedmiotu. Punktem wyjścia opracowania było kompleksowe zobrazowanie przedsiębiorczości. Następnie w artykule przedstawiono zastosowane miary przedsiębiorczości. Podjęto także próbę określenia kierunków przyszłego badania przedsiębiorczości na poziomie kraju – poziom makro. Analiza dotychczasowych badań na temat przedsiębiorczości, jej definiowania i pomiaru nie przyniosła jednoznacznych wyników. Przedsiębiorczość jest niezwykle złożonym

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zagadnieniem i powoduje wiele ograniczeń metodologicznych. Stworzenie modułowego wskaźnika na poziomie krajowym może determinować rozwój badań o przedsiębiorczości w ogóle. Może to mieć kluczowe znaczenie z perspektywy zarówno poznawczej, jak i zastosowanej.

Słowa kluczowe: przedsiębiorczość, makropoziom, przedsiębiorczość państwa, GEM.

#### 1. Introduction

The article discusses the subject of entrepreneurship in the context of its conceptualization and quantification, with particular emphasis on the macroeconomic level. The aim of the article is to present the results of research on the subject of measuring the entrepreneurship of the country at the macro-level, in the context of the imperfections of indicators used so far on the one hand and research needs on the other. It turns out that entrepreneurship identified at the level of the entire economy is of significant importance for the development of entrepreneurship research. The search for a more perfect, optimal measure of entrepreneurship of the country is desirable not only from a cognitive, but also from an application point of view. The importance of the issue is evidenced by seeking the interaction of entrepreneurship with other important areas of social and economic life. The course of the discussion presented in the article is based on the assumption that the methodological aspects of entrepreneurship are implied by its conceptual approach. Additionally, the multidimensionality and multidisciplinarity of definition of entrepreneurship cause fundamental difficulties of operationalization of the problem.

The methodology adopted in the study was brought down to the analysis and criticism of the literature on entrepreneurship. The author of the article used foreign and domestic articles from the largest and most important scientific databases (Scopus, Elsevier, JSter, EBCOhost).

The text is divided into logically linked sections. The first section presents problematic issues related to defining entrepreneurship as a starting point for its quantification. The second section presents the results of the review and an assessment of widely used measures of the country's entrepreneurial level. The third section attempts to identify the directions of development of entrepreneurship research, which indicate the need to look for a universal measure of entrepreneurship in the country.

## 2. From conceptualisation to operationalisation: Conceptual analysis of entrepreneurship

Entrepreneurship is an extremely complex issue. It concerns not only the actions of the individual, but also the group, the entire organization or the society. As a

**Table 1.** Number of publications containing the definitions of entrepreneurship based on the SCOPUS database (indexation by key words)

	Years of publication		Subject area		Document type		Country of origin	
	2017	64	Business Management	282	Article	361	United States	106
Entrepreneurship: Definition	2016	72	and Accounting		Conference		United King-	
	2015	57	Economics, Economet-	147	Paper	79	dom	56
	2014	51	rics and Finance Social		Book		Spain	
	2013	38	Sciences	127	Chapter	56	France	29
	2012	34	Engeenering	44	Review		Canada	22
	2011	30	Computer Science	26	Book	54	Netherlands	20
	2010	36	Decision Science	27	Article in	11	Germany	20
	2009	36	Psychology	15	press		Australia	18
	2008	17	Energy	10	Editorial	5	Italy	18
	2007	21	Medicine	10		1	Belgium	16
	2006	18	Multidisciplinary	5			Sweden	14
	2005	20					Brazil	14
	2004	7					Russia	13
	2003	5					Liechtenstain	13
	2002	7					South Africa	12
	2001	13					Czech Re-	
	2000	3					public	9
	1999	7					Denmark	
	1998	2					New Zealand	
	1997	2					Ireland	8
	1996	2					Poland	8
	1995	6					Switzerland	
	1994	1						8
	1993	4						7
	1992	4						7
	1991	2						7
	1990	3						
	1989	2						
	1988	1						
	1987	2						
	1986	1						
	1982	1						

Source: own study on the basis of Scopus database.

scientific issue, historically it derives from economics, however, over the years, the development of entrepreneurship research has been associated with other fields and disciplines of science [Kurczewska 2013, pp. 17-64]. Nowadays, entrepreneurship is the domain of management sciences, sociology, psychology, economic and cultural anthropology, marketing and finance [Carlsson et al. 2013, p. 913]. In terms of word formation, entrepreneurship is also associated with the concepts of entrepreneur and enterprise. An entrepreneur as an element of the market was considered at the

earliest in the economic sciences. The term "entrepreneur" has been used in French since the 12<sup>th</sup> century, but its dissemination took place much later, among others by such authors as: Richard Cantillon, Jeremy Bentham, Jean Baptiste Say, John Stuart Mill and Frank Knight [Carlsson et al. 2013, pp. 916-917; Wach 2015, p. 27]. Entrepreneurship, its essence and nature are relatively new domains of science. Quantitative specification of publications relating to the conceptualization of entrepreneurship is provided in Table 1.

Scopus database (considered the largest database of abstracts and citations of scientific literature) was used to recognize the number of publications containing the definition of entrepreneurship. The term of entrepreneurship was introduced together with the terms: definition, conceptualization and essence, as the keywords used in the publication. Considering the number of publications in subsequent years, it can be seen that the publication has multiplied over the last ten years. Entrepreneurship is defined in various disciplines and scientific subdisciplines, but the sciences of management, business, economics, accounting and finance prevail. First of all, these are publications about the nature of scientific articles, the majority of authors of which come from the United States and Great Britain.

The essence of entrepreneurship is multidimensional and comprehensive. Shane defines entrepreneurship as all activities related to the identification, evaluation and use of opportunities for introducing new products and new services or organizational and market solutions [Shane 2003, p. 3]. He acknowledges that entrepreneurship is determined by the existence of market opportunities and taking risks, and the creation of new combinations and the introduction of innovative resources is a requirement for it [Shane 2003, p. 3]. The category of the entrepreneurial process is introduced here, which along with behaviors and attitudes is one of the aspects of entrepreneurship [Piecuch 2010, pp. 37-44]. Entrepreneurship understood as an attitude refers to certain properties characterized by the entrepreneur: personality, predispositions, general and specialist knowledge. Casson defines the entrepreneur as an entity that specializes in making optimal decisions regarding the coordination of limited – rare resources. What is more, these decisions are made under conditions of uncertainty, while the recognition and use of opportunities is a special attribute of the entrepreneur [Casson, Wadeson 2007, pp. 285-300]. This definition shows that an entrepreneurial attitude determines specific behaviors and influences their effectiveness. Hébert and Link add to this definition that the entrepreneur is not only able to make effective decisions, but also takes responsibility for them. In addition, the authors add what these dictations may concern: location, forms, use of goods, resources, institutions [Hébert, Link 1989, p. 47]. An entrepreneurial attitude consists of an emotional, behavioral and cognitive dimension. They are feelings, moods, predispositions to certain behaviors as well as skills and knowledge [Goss 2008, pp. 120-137]. Therefore, entrepreneurship understood as behavior results from an entrepreneurial attitude. It is a special type of activity assigned to specific units that can use the idea, an opportunity unnoticed for the others.

The synthetic definition of the entrepreneur by Hébert and Link corresponds with entrepreneurship understood in the sense of a process. An entrepreneurial attitude is associated with entrepreneurial activity within the market system related to coordination, arbitration, speculation, ownership or innovation. Of course, this is not a complete catalog of the entrepreneur's activity [Hébert, Link 1989, pp. 39-49]. In a similar trend, entrepreneurship is determined by Acs and Audretsch, who recognize the entrepreneurial process along with the opportunities and the essence of organizational interaction as the basic issues of entrepreneurship. Acs and Audretsch believe that entrepreneurship is determined by all companies that are new and dynamic, regardless of size and industry, excluding companies that are neither new nor dynamic, nor are business organizations [Acs, Audretsch 2003, p. 6]. The process of recognizing entrepreneurship is undoubtedly connected with the constitution and creation of new ventures. This is the most popular area of scientific enterprise exploration. It is also the most important factor for determining entrepreneurship at the national level.

Wach defines entrepreneurship by identifying four research dimensions: I) entrepreneurship as a personality function, II) entrepreneurship as a function of managerial activities, III) entrepreneurship as a function of an individual entrepreneur, IV) entrepreneurship as a market function [Wach 2015, pp. 26-28]. This is identified by the author with the following questions about entrepreneurship introduced after Stevenson and Jarillo [Wach 2015, pp. 26-28; Stevenson, Jarillo 1990, p. 18]:

- 1) Why do entrepreneurs act?
- 2) How do entrepreneurs act?
- 3) What happens when entrepreneurs act?

Due to the subject of the study – entrepreneurship in the macro scale – the most interesting and most important is the last question regarding the effects of entrepreneurship. This is in line with the operational (apart from the inventive) approach to entrepreneurship, which is related to the use of opportunities, the creation of new companies, products and enterprises as well as innovation. It can also be accepted, as it was done by Justo, De Castro and Maydeu-Olivares, that entrepreneurship consists of two components: I) entrepreneurial tendency of individuals manifested in the formation and growth of new enterprises, and II) enterprising environment that determines entrepreneurial tendencies [Justo, Castro, Maydeu – Olivares 2008, p. 606].

The multiplicity and diversity of the definition of entrepreneurship is not facilitated by attempts to quantify the entrepreneurship of the country. There is no consensual explanation of entrepreneurship. Therefore, it can be concluded that it is subjectively determined depending on the needs of the researcher and the purpose of the study. Peneder even states that entrepreneurship is treated instrumentally [Peneder 2009, p. 88]. Davidsson shows conceptual chaos, signs of entrepreneurial crisis and related frustration [Davidsson 2003, p. 2]. This position is also presented by

other experts in the subject [Shane, Venkataraman 2000, p. 217; Ahmand, Seymour 2008, p. 6; Peneder 2009, p. 78].

# 3. Measuring the entrepreneurship of the country: Critical analysis of available indicators

Universalism of conceptualization of entrepreneurship requires a multidimensional approach in the case of an attempt of its comprehensive operationalization. This is undoubtedly a methodological problem because it first requires gathering a large number of reliable information and then presenting it in a quantifiable way. Different dimensions of entrepreneurship refer to different aspects of entrepreneurship and are therefore described using non-uniform criteria and records.

From among all dimensions of entrepreneurship, the most controversial factor is its measurement at the macro level, i.e. the measurement of entrepreneurship in the country. On the one hand, this is a very important issue not only from a cognitive point of view, but it can also have a significant meaning for practice and politics. On the other hand, no commonly acceptable indicator of entrepreneurship in the country has been agreed so far. Acs, Desai and Klapper [2008, p. 266] believe that the country's specific differences can lead to conflicting findings as well as the diversity of information sources that can be used in different states.

**Table 2.** Areas of entrepreneurship research within GEM

There are the substitution of the substitution						
Adult Population Survey (APS)	National Expert Survey (NES)					
Perceived Opportunities	Financing for Entrepreneurs					
Perceived Capabilities	Governmental Support and Policies					
Fear of Failure Rate	Taxes and Bureaucracy					
Entrepreneurial Intentions	Governmental Programs					
• Total Early-Stage Entrepreneurial Activity	Basic School Entrepreneurial Education and					
(TEA)	Training					
Established Business Ownership	Post School Entrepreneurial Education and					
Entrepreneurial Employee Activity	Training					
Motivational Index	R&D Transfer					
Female/Male TEA	Commercial and Professional Infrastructure					
Female/Male Opportunity-Driven TEA	Internal Market Dynamics					
High Job Creation Expectation	<ul> <li>Internal Market Openness</li> </ul>					
Innovation	<ul> <li>Physical and Services Infrastructure</li> </ul>					
Business Services Sector	<ul> <li>Cultural and Social Norms</li> </ul>					
High Status to Successful Entrepreneurs						
Entrepreneurship as a Good Career Choice						

Source: own study on the basis of GEM database.

One of the most widespread and previously explored entrepreneurship measures at the country level was created in 1999 by the representatives of Bobson College and

London Business School Global Entrepreneurship Monitor (GEM). This measure was primarily introduced for international comparisons of entrepreneurship, as well as its changes in time and understanding why countries differ in its level [Alvarez, Urbano, Amorós 2014, p. 445]. In other words, the aim of the report is to include in the international dimension a wide spectrum of entrepreneurship manifestations: measuring differences in entrepreneurial activity between economies, identifying factors affecting the level of entrepreneurial activity, searching for system solutions that raise the level of entrepreneurial activity. The GEM methodology consists of collecting data from two complementary sources: I) Adult Population Survey (APS), II) National Expert Survey (NES). APS examines entrepreneurial attitudes, activity and aspirations of individuals. The study involves a minimum of 2,000 adult respondents from each country, and the study currently covers over 100 economies. NES, in turn, monitors nine factors determining entrepreneurship referred to as the Entrepreneurial Framework Conditions (EFCs). At least 36 "experts" carefully selected according to their competences participated in the study [GEM 2018].

GEM is the most commonly used measure of entrepreneurship in both quantitative and qualitative research. Alvarez, Urbano and Amorós [2014, pp. 445-465] made a detailed review of the literature in the field of economics, management and business in the years 2000-2012 in terms of using the GEM measure in scientific studies. The authors selected over 100 articles, in which the GEM measure was largely used for the empirical part. Only a few studies deal with the issue of GEM methodology. This indicator is used in various research methodologies. Often, only Total Early - Stage Entrepreneurial Activity (TEA) is used as the determinant of entrepreneurship in the country. The implementation of GEM in scientific research has undoubtedly many advantages. First of all, it is the only synthetic approach to entrepreneurship so far. In addition, the adoption of a uniform concept of entrepreneurship and the manner of collecting information in the international cross-section is a strong asset of the study. The possibility of applying a harmonized measure in international comparative research significantly extends the scope of research. The identification of entrepreneurship of the country on the basis of GEM may have a significant impact on the country's policy in the context of creating an appropriate environment conducive to the development of entrepreneurship. On the other hand, this measure is not devoid of constraints and cannot be considered as an excellent, comprehensively covering the entrepreneurship. GEM is based on an institutional approach to entrepreneurship, which does not exhaust the spectrum of the multidimensional nature of this concept. Institutions and the institutional environment are important stimulants of the entrepreneurship of the country, however one should not forget about the behavioral approach, strictly economic, sociological and psychological.

An alternative approach to studying entrepreneurship in the country may be the proposal of the World Bank Group Entrepreneurship Survey. The initiative, launched in 2007, aims to explore the pattern of economic activity in the group of developed and developing countries [Acs, Desai, Klapper 2008, p. 267]. The intention of the

initiators of the study was to build a database on the typology and characteristics of international business in the following years based on data obtained directly from the entity that deals with the registration of economic entities in various countries. While choosing the methodology, a heterogeneous legal framework and economic system were taken into account based on the adopted concept of entrepreneurship, a standard unit of measure and sources of information. Entrepreneurship is defined as an activity of an individual or a group aimed at initiating business activity in the formal sector in accordance with the possible legal form of the activity. In view of entrepreneurship defined in such a way, it was assumed that its determinant are all entities of the formal economic sector with legal personality, able to incur liabilities and enter into agreements with other entities and have to be registered with the appropriate body. As a source of information, commercial registers were used, using tax offices, chambers of commerce or labor offices in the absence of information in the commercial register. In addition, the study also collected information on the requirements for the disclosure of registered companies, the division of both existing and new companies into the business sector and the functioning of enterprises registers [Klapper et al. 2007, pp. 2-32].

However, the entrepreneurship of the country in terms of the World Bank Group is not as popular as the GEM measure in scientific studies. Its limited application value already results from the adopted concept of entrepreneurship, which amounts to the number of new business entities. In addition, despite attempts to minimize the disproportions in the comparability of data from various economies, the related shortcomings could not be eliminated. As a consequence, this approach does not provide the possibility of a systematic analysis of the development of entrepreneurship. The disadvantage of the study is undoubtedly a smaller number of countries included in the database, which resulted from the elimination of some economies due to the inability to obtain data according to the adopted standards. In addition, discrepancies in the collection of data on existing and emerging companies between developing and developed countries fundamentally reduce the reliability of information due to the problem of underestimating or overestimating the number of operating enterprises.

In addition to the number of established companies, data on self-employment are used as a fairly common determinant of entrepreneurship [Audretsch, Thurik 2001; Fonseca, Lopez-Garcia, Pissarides 2001]. In addition, other acceptable measures are: saturation with companies, demography of the enterprise, ownership structure of companies, company survival rate, etc. [Caves 1998; Klapper, Amit, Guillen 2008; Dejardin 2011].

As in the case of problems with the compatible and unanimous definition of entrepreneurship, there is no consensus on one adopted measure of entrepreneurship in the country. It is a consequence of its multidimensional and complex nature. The presented examples of measures have significant information values on entrepreneurship, but they do not quantify it in a comprehensive manner. First of all,

the quantitative approach to entrepreneurship as a set of skills included in the unit is missing. In addition, we should combine not only psychological but also sociological, economic and institutional dimensions. Assuming a comparative analysis, it would require operating with a combination of quantitative and qualitative variables, which is basically difficult to implement taking into account the process of data collection and its costs. Therefore, the entrepreneurial measures of the country used in empirical research will always be flawed and may be subject to criticism. However, this cannot discourage the search for ever-better, more credible and systemic measures of entrepreneurship.

# 4. Using macro-level entrepreneurship measurements: Perspectives for future studies

Establishing the entrepreneurial measure of the country for the needs of international comparisons is good in itself. It gives the opportunity to observe the changes, development, dynamics and causative factors of entrepreneurship of various countries, to identify disproportions between economies and the sources of their creation. The legitimacy of conducting comparative research in the international cross-section results from the need to diagnose the state and level of entrepreneurship of states and to learn the regularities that diminish the existence of differences. As a consequence, this knowledge can be used to shape the policy of enterprise development and related policies. Additionally, the examples of model economies can be treated as a kind of benchmark for others. Recognition of the level of entrepreneurship in a given economy may also be desirable as an assessment of the effectiveness of measures taken to improve the expansiveness of the area.

Entrepreneurship of the country should also be confronted with various, important areas of social and economic life. In this area there is very wide room for action. Thus, an important issue from a cognitive but also applied point of view is the analysis of the interaction between entrepreneurship and education, the labor market, unemployment, productivity, etc. The identification of interdependencies between institutions, legal system, standards or various entities of socio-economic life is another interesting issue of scientific exploration. The future interest of entrepreneurship researchers may also focus on defining the role of entrepreneurial activity in creating innovation systems and industry clusters, and vice versa [Carlsson et al. 2013, pp. 913-930].

One of the most important issues of entrepreneurship at the national level, which will be unquestionably developed in future scientific research, is the recognition of the importance of entrepreneurship for economic growth, social development and human well-being. This is a problem that is not very present in the scientific literature in the fields of economics, management and business. The connection of these areas results from the theory of endogenous growth and development economics. In addition, not only in economic but also in behavioral aspects,

entrepreneurship is inseparably connected with the search and implementation of new forms of development and with the change of social status by active individuals, societies, nations [Klonowska-Matynia, Palinkiewicz 2013, p. 29].

The proposed research problems are only a kind of proposition for exploratory research on entrepreneurship. However, they are not a closed list. Taking into account the multidimensionality of entrepreneurship and continuous evaluation of the problem, a much larger field for empirical research can probably be found. The turn of the 20<sup>th</sup> and 21<sup>st</sup> centuries is described as the golden period of entrepreneurship research, however, experts in the subject indicate that this dizzying pace of development of this scientific field will continue in the future [Wiklund et al. 2011, p. 1-9].

#### 5. Conclusions

Summing up the results of research on the limitations and needs of the quantification of entrepreneurship of the country, it can be repeated after Baumol [1968] that entrepreneurship is one of the most intriguing, but at the same time elusive concepts in economics. The query of literature on the subject on defining entrepreneurship and its measurement did not bring unambiguous results. Determining entrepreneurship in behavioral, functional, economic and social terms is most justified and finds confirmation from theoretical concepts. On the other hand, it is implied that entrepreneurship becomes a highly heterogeneous and multidisciplinary concept, which presents enormous methodological difficulties. The multi-level nature of the problem from an individual entrepreneur to the entire entrepreneurial system should also be added to this.

Entrepreneurship measures applied so far have a lot of advantages and have significantly contributed to the development of research using entrepreneurship at the macro level. However, these are not optimal measures. It is not possible to present in the article a larger number of publications dealing with the discussed problem, which firstly results from the formal limitations of the text and secondly requires the use of more advanced information processing tools, e.g. in-depth computer-assisted qualitative analysis. This is undoubtedly a limitation of the study.

Despite this, it can be assumed that the purpose of the article has been fulfilled. The most important reflection resulting from the literature review concerns the need to conduct research in the direction of quantitative and qualitative recognition of the entrepreneurship of the country because it will be of key importance for the development of entrepreneurship research in general. This inspires readers to look for a model solution not only because of scientific curiosity but also application possibilities. It can be essential for shaping the directions of state policy development in the field of entrepreneurship and other related development policies.

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