

# Research Methodology of Entrepreneurship and Innovativeness of Higher Education Institutions

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The article presents the issues of entrepreneurship and innovativeness of universities in the context of the analysis of the European Union guidelines and determining the competitive position of the university with the use of the strategic group maps. The aim of the article is to present different variants of strategic group maps, called by the authors 1D, 2D and 3D maps, which enable the identification of the competitive situation in the sector of higher education in Poland. The study focused on two sets of criteria of differentiation of the universities' strategies, which are entrepreneurship and innovativeness. The research problem was formulated in the form of the following questions: whether the described methods of 1D, 2D and 3D maps may be applied to the analysis of competition in the sector of higher education institutions in Poland, in relation to entrepreneurship and innovativeness.

**Keywords:** entrepreneurship, innovativeness, universities, strategic analysis, strategic group maps

## Introduction<sup>1</sup>

Modelling entrepreneurship and innovativeness as well as building modern relationships with the environment pose a challenge to universities in the

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<sup>1</sup> In this study the authors interchangeably use terms “university” and “higher education institution”.

knowledge-based economy era. On the one hand, the European Commission successively publishes political documents, where it presents new prospects and forms of activities relating to supporting entrepreneurship and innovativeness both at the EU level and at the member state level. On the other hand, in the turbulent environment, where various types of organisations, including public higher education institutions, need to function, the ability to analyse appropriately the conditions which affect these organisations becomes of key importance. One of the ways to support acquiring and processing information is various types of methods of strategic analysis of competitive environment i.e. the one whose factors affect organisations directly.

The aim of the study is to present different variants of strategic group maps called by the authors 1D, 2D and 3D maps, which enable identification of the competitive situation in the sector of higher education institutions in Poland. The study focused on two sets of criteria of differentiating university strategies, which are the entrepreneurship and innovativeness, which will help search for answers to a problem question: what new variants of the strategic group map method may be applied to identify the competitive situation in the analysed sector?

The first part of the article outlines the discussed issue of entrepreneurship and innovativeness as presented in the European Union documents and in national ones. The second part describes entrepreneurial and innovative universities and highlights their key characteristics. Further parts of the article, referring to different variants of strategic group maps, were prepared based on the “Perspektywy” ranking of universities and “U-Multirank”, a new European ranking tool. Next, in part three, a classic (2D) strategic group map is characterised, whereas part four describes new variants of maps – a 1D and a 2D version. In conclusions the authors claim that suggested variants of strategic group maps may be applied to conduct competitiveness analysis of universities in Poland in terms of their entrepreneurship/innovativeness. The authors did not carry out research with the use of methods presented in the article, but rather focused on their presentation.

## Entrepreneurship and innovativeness according to the European Union guidelines

In *The Lisbon strategy*, entrepreneurship and innovativeness are regarded as two key areas of social and economic development of the European Union and member states (Kościk, Sławińska, 2010, p. 29), that is why they are included both in the European and Polish educational policy. Entrepreneurship constitutes one of the main pillars of *The European Employment Strategy* (together with employability,

adaptation skills of employees and employers and equal opportunities on the labour market). Innovativeness (a knowledge-based economy) is one of the issues *The Lisbon Strategy* concentrates on.

One of the documents of the European Union is “*Europe 2020 Strategy*” which emphasises a special role of entrepreneurship and innovativeness in education and promoting an array of actions in this scope (*Europe 2020*, 2010, p. 13). One of the three priorities presented in “*Europe 2020*” is smart growth achieved owing to more effective investments in education, research and innovations. Another priority, which is inclusive growth, is based on fostering high-employment economy, and the goal of Europe is to aim at maximum labour participation<sup>2</sup>. Investing in education so as to boost entrepreneurship was also highlighted in “*Entrepreneurship Education*”, a guidebook published by the European Commission (*Entrepreneurship Education*, 2013). Backing in the scope of modelling “the entrepreneurial spirit” and innovativeness in Europe is also reflected in “*Entrepreneurship 2020 Action Plan*” (*Entrepreneurship 2020 Action Plan*, 2013) and in “*Innovation Union*”, which is one of the seven leading projects of the “*Europe 2020 Strategy*” (*Europe 2020 Strategy*).

Based on contemporary challenges in the scope of entrepreneurship and innovative education and in line with the EU strategy, the role Polish higher education institutions play in strengthening entrepreneurship was identified as part of the so-called qualification frames for higher education. Implementation of *The National Qualification Frames* is connected with supporting pro quality reforms in the educational system in our country and it is also related to the amendment of the Law on higher education (Ustawa o szkolnictwie wyższym – Act of 18 March 2011). Actions taken by the European Union, as well as those undertaken by all member states, also by Poland, are intended to promote entrepreneurship education and knowledge-based economy – including continuing education in line with *life-long learning* concept (Najda-Janoszka, Wach, 2008, pp. 45–58), and entrepreneurship education included in university curricula (not only in economic fields of study but also in the non-economic ones) should be given a prominent position (Wach, 2007, pp. 120–127).

Entrepreneurship education (or education for the benefit of entrepreneurship) plays a key role in shaping proactive and entrepreneurial attitude, entrepreneurial competences, skills and *culture which may be interpreted as entrepreneurial pedagogy* (Wach, 2014a), which should aim at reaching the following objectives (Mwasalwiba, 2010, pp. 20–47):

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<sup>2</sup> Another key priority from the triad is sustainable growth [in:] <http://stat.gov.pl/WSKAZNIKI-MONITORUJACE> (downloaded: 10 May 2016).

- honing entrepreneurial thinking (entrepreneurial mentality) among the young so as they are more self-confident in ventures they undertake and they are more attractive to employers,
- supporting start-ups,
- increasing their importance in the society and the economy.

In the innovative economy era we need such changes in the educational system which will help increase abilities of universities to face new challenges. *Horizon 2020*, developed for years 2014–2020, the EU financial instrument for implementation of “Innovation Union”, is a programme supporting innovativeness at the university – business environment axis on the international and national level.

## An entrepreneurial university versus an innovative one

Evolution of academic traditions has proved that an entrepreneurial university grew as a result of inertia of the Humboldtian university model and the search for new solutions. An entrepreneurial university is aimed not only at education but also at conducting research and commercialisation of the developed know-how and at tightening co-operation with businesses, including the entities which were established by their own employees, and it brings measurable added value for the economy and the society (Matusiak, 2010, pp. 172–173). Polish higher education and university education is still dominated by the classical education model, which means that a contemporary entrepreneurship education model still requires a large-scale implementation (Wach, 2013, pp. 246–257). It is worth noting that various solutions directed at the co-operation between science and business are sought in the process of managing universities, and in this context the development of an entrepreneurial university becomes particularly important.

Activities of the European Union and member states are aimed at promoting entrepreneurial attitude in all subjects taught at all levels of education (Zioło, 2012, pp. 10–23). We may see that in this respect Europe still lags behind the United States of America where elements of entrepreneurship education have been introduced on secondary education level, whereas the majority of universities offers entrepreneurship courses – compulsory or optional ones (Wach, 2014b). Implementation of entrepreneurship concepts into university management practice is also appreciated by the Organisation for Economic Cooperation and Development (OECD), which prepared a report including **key features of an entrepreneurial university** grouped in seven categories (OECD, 2012; Popławski, Markowski, Forkiewicz):

- leadership and management forming the basis of entrepreneurial culture,
- organisational culture, people and motivation to take up entrepreneurial actions,
- development of entrepreneurship in modelling entrepreneurial attitudes and behaviours,
- creating opportunities for entrepreneurs i.e. supporting entrepreneurial initiatives oriented both inside and outside the university,
- relations between the university and business aimed at exchanging knowledge,
- development of international co-operation,
- studying the effects of undertaken entrepreneurial activities.

In the context of academic transformation there are discussions on the future of universities and the picture of university transformation is shaped in five complementary areas: an entrepreneurial university, human resources for innovative economy, entrepreneurship in students and graduates, technology transfer and commercialisation as well as spin-offs and spin-outs (Matusiak, 2010, pp. 181–182). It is proved by studies conducted in Poland, whose results are presented in form of reports, which are a valuable source for studying entrepreneurship and innovativeness.

In literature on the subject, the notion of innovative university is relatively poorly recognized. Published in 2009, *The Innovative University: Changing the DNA of Higher Education from the Inside Out* (Christensen, Eyring, 2011), written by two American professors Christensen and Eyring, whose keynote is a statement that a fundamental and most important characteristic of a successful higher education institution is the ability to change, is important from the point of view of this study. This change may refer not only to new forms of education, changes in the system of doing research and promoting outstanding scholars, but also to changes at the organisational and operational level (Krasowska, Luterek, 2015). The ability to change and the scope of these changes is a key to provide a definition of an innovative university. The authors assumed that, in an analogous manner to the definition of an innovative business, an **innovative university** (taking into account its character of an organisation offering educational services) is the one which implemented an innovation in an analysed period. An innovative university is “an intelligent organisation, constantly generating and implementing innovations, which are recognised by recipients owing to the high level of modernity and competitiveness” (*Podręcznik Oslo*, 2008, p. 49). “Creating innovative and entrepreneurial culture, specific management style, which appreciates and awards new ideas and concepts, encourages employees to collaborate in developing new solutions, to take risks and back changes” is an essential element in managing an innovative university (Stawasz). Following Toczyńska we assumed that

an innovative university will be perceived as “a prestigious university; its characteristics being: innovativeness of studying processes, flexible curriculum, innovative teaching and learning methods, an appropriate scientific potential and effectiveness, international contacts and partnership in exchanging scholars and students, conducting joint research projects as well as business and social undertakings” and as such it may be described with the following key features (Toczyńska, 2015, pp. 469–471):

1. An innovative university should be competitive.
2. An innovative university is a leader in the market for educational services.
3. An innovative university is a comfortable place i.e. safe and ergonomic.
4. An innovative university performs innovative activities.
5. An innovative university develops and implements innovative education methods, curricula and forms.
6. An innovative university implements organisational and marketing innovations.
7. An innovative university is creative, and university employees are passionate about their work, which also inspires students and listeners.

Bearing in mind strategic lines of development of the European Union and the Organisation for Economic Cooperation and Development, there are attempts by various organisations to study and record entrepreneurship and innovativeness and their implementation in Poland. One of them is the “Perspektywy” Educational Foundation which prepares and publishes every year *The Ranking of Higher Education Institutions in Poland*. While assessing higher education institutions, it covers 6 criteria, *innovativeness* being one of them, with patents, protection rights, acquisition of EU funds, licenses sold, spin-offs and spin-outs, and other criteria under research are as follows: *prestige, scientific potential, scientific effectiveness, education conditions and internationalisation of studies* ([www.perspektywy.pl/RSW2015](http://www.perspektywy.pl/RSW2015)). U-Multirank, a European ranking, takes 5 criteria to assess universities: *learning and teaching, research, an international dimension, involvement in the region and knowledge transfer*, the most important one in light of this study. The *knowledge transfer* criterion includes such standards as patents awarded, co-patents with industry, spin-offs and income from private sources ([www.umultirank.org](http://www.umultirank.org)).

With reference to the above mentioned approaches, the authors of this study made an attempt to prepare **methodology of studying entrepreneurship and innovativeness in higher education institutions** in form of a matrix. Consequently, the following analytic matrix systems will be applied: 1D, 2D and 3D, aimed at offering a methodology of studying entrepreneurship and innovativeness of state universities in Poland. The objective of undertaken research will be identification

of factors and conditions which affect assessment of entrepreneurship and innovativeness of higher education institutions in Poland. The rankings of higher education institutions in Poland published by “Perspektywy” and in “U-Multirank”, a European ranking, will be the basis of the research.

## Strategic analysis of competitive environment with the use of 2D strategic group maps

Strategic analysis of competitive environment allows us to identify conditions which organisations of a given industry operate in. The main methods of industry environment analysis are: Porter’s 5/6 forces, the industry attractiveness assessment, strategic group maps and the experience curve (Multan, 2014, p. 73; Wójcik-Augustyniak, 2008, p. 143; Gierszewska, Romanowska, 2009). This study focuses on strategic group maps method, which complements Porter’s 5/6 forces and enables identification of actual competition between organisations in the industry.

This analysis enables grouping organisations in subgroups, which are homogeneous in terms of specified criteria, referred to as strategic groups. In literature on the subject, a strategic group comprises enterprises/organisations, “which share a similar attitude to competing in the marketplace, i.e. (Gierszewska, Romanowska, 2009, p. 128):

- offer products/services comparable in terms of quality;
- technology advancement and modernity;
- use similar distribution channels;
- are equally vertically integrated;
- offer comparable services, after-sales services and technical support;
- are focused on meeting the needs of the same customer groups;
- conduct advertising campaigns in a similar manner;
- use identical product technology;
- offer products at similar prices.

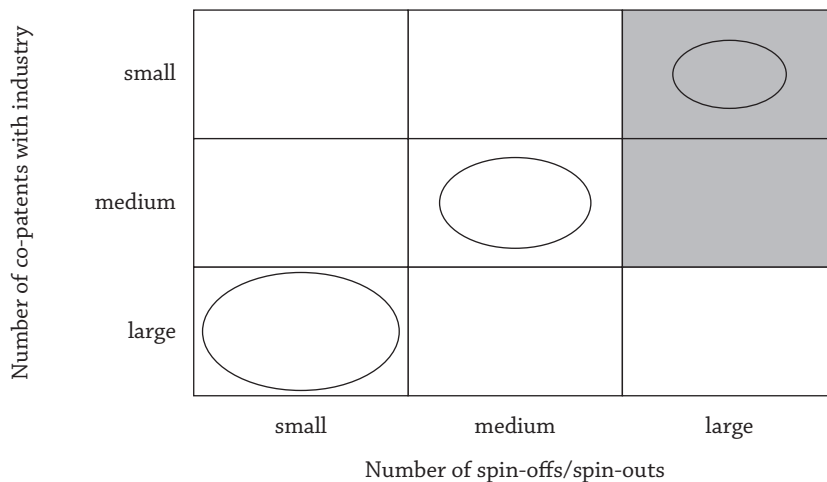
Classical strategic group maps constitute a graphic representation of a competitive situation marked by coordinate axis including (two) appropriate criteria, which differentiate strategies of organisations in the industry (*Leksykon Zarządzania*, 2004, p. 285). As a result, strategic group maps come as two dimensional planes in which data characterising each organisation are put. Based on the „Perspektywy” ranking of higher education institutions and „U-Multirank”, the authors developed a visual tool to analyse entrepreneurship/innovativeness of state universities.

An analysis of the industry with the use of strategic group maps allows making strategic decisions concerning future operations of the organisations. It is possible after having answered the following questions (Gierszewska, Romanowska, 2007, pp. 137–138):

1. Which strategic group in the sector does the enterprise belong to?
2. Who are competitors in the strategic group?
3. What strategies are implemented by competitors in other strategic groups?
4. Which of the structural analysis factors contribute to biggest changes of intensity of competition between different strategic groups?
5. What is the attractiveness of each strategic group? In which groups does the organisation have better prospects for development?
6. What opportunities and threats of staying in a specified strategic group are there for the organisation?
7. What are the possibilities of moving from one group to another?
8. Are there any market niches in the industry which none of the strategic groups is interested in?

A sample two dimensional strategic group map is presented in Fig. 1.

**Fig. 1. A 2D strategic group map for higher education institutions in Poland**



Source: Own work.

In line with Porter's guidelines, after having prepared strategic group maps for the industry, it is worth taking the following analytical measures (Porter, 2000, p. 163):

- recognition of mobility barriers protecting the group against attacks from other groups;



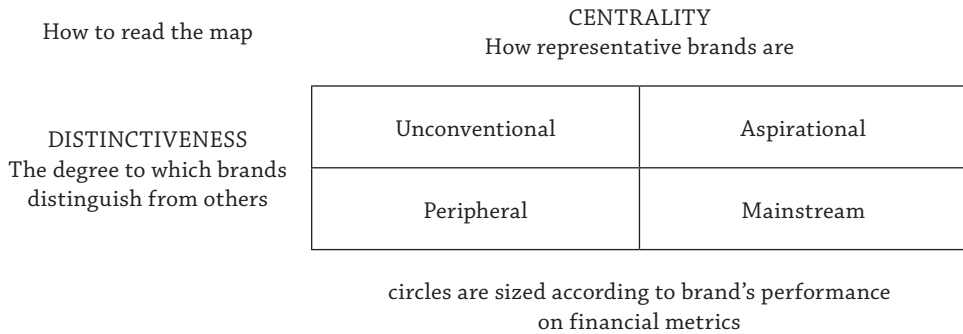
- recognition of marginal groups with insignificant or marginal importance which are candidates to exit the market or to attempt to move to another group;
- specifying directions of business strategic moves which they can follow from the perspective of the industry as whole;
- analysis of trends allowing reconsidering consequences of each trend occurring in the industry for a map of the strategic group;
- forecasting reactions of the industry to an event.

## The concept of strategic group maps – 1D and 3D variants

A new concept of strategic group maps was offered by Dawar and Bagga (2015) in their article 'A better way to map brand strategy'. In this method the authors studied central brands such as Coca-Cola in soft drinks and McDonald's in fast food, which are the most representative for their type. Central brands are the first ones which come to you mind and they serve as a reference point for benchmarking. These brands shape category dynamics, including consumer preferences, pricing and the pace and direction of innovation. Another group was distinctive brands such as Tesla in cars and Dos Equis in beer. They stand out from the crowd and avoid direct competition with widely popular central brands.

According to the authors of the new way of mapping, creating a C-D map of a brand category is a straightforward but labour-intensive process. The first stage is to identify a geographic market which the organisation is interested in (the whole country, region, a single city) and customer segments to be surveyed. A brand's position may vary dramatically depending on those variables. The company then conducts a survey to collect data on consumer's perceptions of the brand's centrality and distinctiveness (scored on a 0–10 scale). This data will yield unique coordinates for each brand's position on a 2x2 matrix. The map also captures market performance: "the bubble" for each brand is sized proportionally to its unit sales volume, unit price or other metrics. The C-D map combines consumer's perceptions of brands with their market performance. Brands are positioned in quadrants according to how consumers score them in two universal dimensions: centrality and distinctiveness. Each quadrant carries strategic implications on sales, pricing, risk and profitability. The distribution of brands across the map offers insights about competitive opportunities and threats.

In a map constructed in such a way, the authors distinguished four groups of brands: aspirational, mainstream, peripheral and unconventional ones (Fig. 2).

**Fig. 2. 1D centrality-distinctiveness map**

Source: Own work based on Dawar, Bagga (2015).

Aspirational brands – those that fall into the upper-right quadrant – are highly differentiated but also have wide appeal. These high distinctiveness brands tend to command higher prices than brands that score low on this dimension.

Brands that have a wide appeal but low distinctiveness fall into the lower-right quadrant. These mainstream brands tend to be the first that come to mind when consumers think of the category. Their lack of distinctiveness reduces their pricing power, but they are the most popular and most often chosen by consumers.

Peripheral brands (the lower-left quadrant) have little to distinguish them. They are unlikely to be the first choice for most consumers. Despite their low prices and lack of distinctiveness, many peripheral brands may succeed in this seemingly unattractive position.

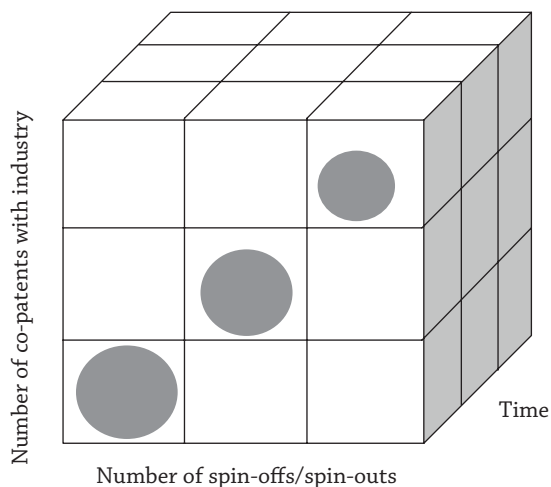
In the upper-left quadrant are unconventional brands, those with unique characteristics that distinguish them from traditional products in the category. These which depart in some way from the standard view of the category, the unconventional ones in the market. The low share of sales of brands in this quadrant suggests that it is a niche strategy.

According to the authors of this article, the maps proposed by Dawar and Bagga may be adapted for the needs of higher education institutions by creating maps not only for their brands but also for other types of strategy differentiation criteria, including ones concerning entrepreneurship/innovativeness of higher education institutions sector, which may cover operations of spin-offs and spin-outs and the extent to which spin-offs/spin-outs differ from other businesses.

Another variant of (variation on) strategy group maps is a 3D map. In this variant, time is included as the third dimension, apart from the two dimensions we have already taken into account (Fig. 3).

3D strategy group maps may be applied to analyse changes made in the organisation after having implemented a new strategy. They allow us to state whether the organisation has moved to the group (or into the area of largest benefits) where it wanted to be, or *de facto* to confirm (or not) the validity of selected operating strategy. Owing to the addition of the third dimension such as time, we may project future (desirable) place in the strategic group map. It may constitute a kind of picture of analytic actions which, according to Porter, should be carried out after developing strategic group maps i.e. specifying directions of business strategic movements which may be taken from the point of view of the industry as a whole and/or trend analysis allowing us to think over consequences of each trend occurring in the industry for a map of a given strategic group.

Fig. 3. A 3D strategic group map



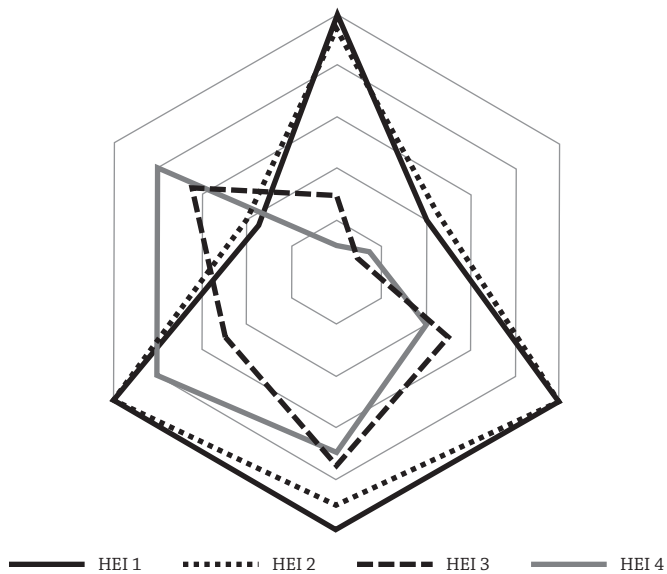
Source: Own work.

The authors offered a method of presenting a general (synthetic) situation inside the higher education institution sector in form of a radar chart. The thickness of lines could reflect the market share of a given university measured with number of students.

Figure 4 presents a visual situation of a university in form of radar with reference to criteria included in the “Perspektywy” Ranking.

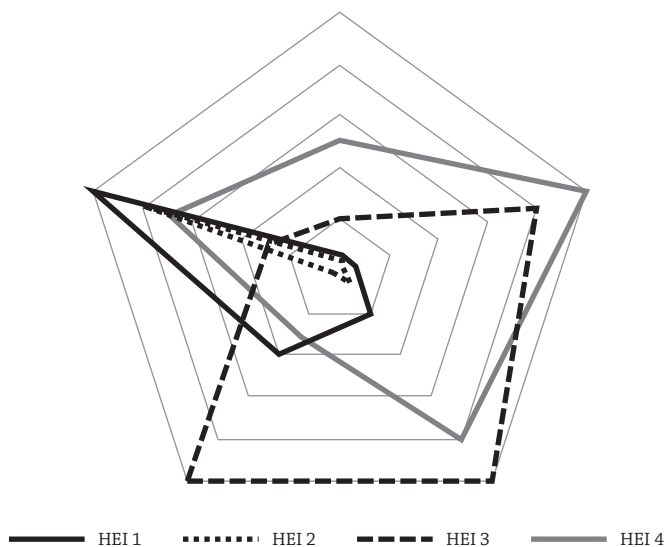
Figure 5 illustrates a situation of universities in form of radar in relation to entrepreneurship/innovativeness criteria included in the “Perspektywy” Ranking and “U-Multirank”.

**Fig. 4. Criteria for differentiating strategies of higher education institutions (HEI) in Poland**



Source: Own work based on “Perspektywy” website, Ranking of higher education institutions.

**Fig. 5. Criteria for differentiating innovativeness strategies of higher education institutions (HEI) in Poland**



Source: Own work based on the following websites: “Perspektywy” Ranking of higher education institutions and “U-Multirank”.

## Conclusions

In light of the conducted discussion, one may come to a conclusion that the role of a modern-day higher education institution is being a creator of entrepreneurship and innovativeness in the academic society. Identification of university strategy in scope of entrepreneurship and innovativeness plays an important role in stimulating their competitiveness and innovativeness in the knowledge-based economy.

The aim of the article was to present and test usefulness of the discussed variants of strategic group maps for analysis of competitiveness of higher education institutions in Poland. The authors concluded that the presented methods may be successfully applied to analyse this sector in scope of entrepreneurship and innovativeness criteria, which are of their main interest.

There is nothing revealing in the statement concerning the study of entrepreneurship and innovativeness; however, the application of 1D, 2D and 3D strategic group maps to analyse competitiveness of higher education institutions in Poland is a novelty. The main assumptions of the classic two-dimensional (2D) strategic group map make one realize that new variants of this method, which are referred to as 1D and 3D strategic group maps in the article, should be taken into account. Moreover, in this article the authors offered a graphic method of synthetic presentation of strategic groups in form a radar chart.

Summing up, it should be noted that the authors did not carry out research with the use of methods presented in the article, but rather focused on their presentation. Another step will be testing and applying the presented methods to analyse competitive environment of higher education institutions in Poland.

## References

- Christensen, C., Eyring, H. (2011). *The Innovative University: Changing the DNA of Higher Education from the Inside Out*. San Francisco: Jossey-Bass. A Wiley Imprint.
- Dawar, N., Bagga, Ch.K. (2015). A Better Way to Map Brand Strategy, *Harvard Business Review*, June: <https://hbr.org/2015/06/a-better-way-to-map-brand-strategy>.
- Entrepreneurship 2020 Action Plan: Reigniting the entrepreneurial spirit in Europe* (2013). European Commission: Brussels, COM (2012) 795 final.
- Entrepreneurship Education: A guide for educators* (2013). European Commission: Brussels.
- Europe 2020: A strategy form smart, Sustainable for inclusive growth* (2010). European Commission, COM (2010) 2020 final, Brussels, 13.

- Europe 2020 Strategy*: [http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/flagship-initiatives/index\\_pl.htm](http://ec.europa.eu/europe2020/europe-2020-in-a-nutshell/flagship-initiatives/index_pl.htm)
- Gierszewska, G., Romanowska, M. (2007, 2009). *Analiza strategiczna przedsiębiorstwa*. Warszawa: PWE.
- <http://stat.gov.pl/WSKAZNIKI-MONITORUJACE>
- <http://www.umultirank.org/#!/home?trackType=home>
- <http://www.perspektywy.pl/RSW2015/ranking-uczelni-akademickich/metodologia-rankingu-akademickich-szkol-wyzszych>.
- Kościk, B., Sławińska, M. (red.) (2010). *Przedsiębiorczość akademicka*. Lublin: Wyd. „Pietrzak”.
- Krasowska M., Luterek M. (2015). Nie każdy musi być Harvardem. *Forum Akademickie*, no 10: <https://forumakademickie.pl/fa/2015/10/nie-kazdy-musi-byc-harvardem/>.
- Leksykon Zarządzania* (2004), Warszawa: Difin, 285.
- Matusiak, K. (2010). *Budowa powiązań nauki z biznesem w gospodarce opartej na wiedzy*. Warszawa: Szkoła Główna Handlowa.
- Multan, E. (2014). Metody analizy otoczenia konkurencyjnego przedsiębiorstwa. W: E. Multan, E. Bombiak, M. Chyłek (red.), *Analiza strategiczna w przedsiębiorstwie. Zagadnienia teoretyczne i studia przypadków*. Siedlce: Wyd. Uniwersytet Przyrodniczo-Humanistyczny, 72–90.
- Mwasalwiba, E.S. (2010). Entrepreneurship Education: a Review of its Objectives, Teaching Methods and Impact Indicators. *Education + Training*, 52 (1), 20–47.
- Najda-Janoszka, M., Wach, K. (2008). Lifelong Learning in the Fields of Tourism in the European Union taking Poland into Special Consideration. W: M. Bednarczyk (Ed.), *Entrepreneurship in Tourism and Sport Business* Kraków: Fundacja dla Uniwersytetu Jagiellońskiego, 45–58.
- OECD (2012). *A Guiding Framework for Entrepreneurial Universities*.
- Podręcznik Oslo, Zasady gromadzenia i interpretacji danych dotyczących innowacji*, Wydanie Trzecie (2008). Komisja Europejska, OECD/European Communities, Ministerstwo Nauki i Szkolnictwa Wyższego, Departament Strategii i Rozwoju Nauki, Warszawa.
- Popławski, W., Markowski, M., Forkiewicz, M. (2013). *Przedsiębiorczość polskich szkół wyższych. Diagnoza, uwarunkowania, perspektywy*, raport z badań w ramach projektu nr NN115427640 Narodowego Centrum Nauki. Toruń, Wyższa Szkoła Bankowa w Toruniu.
- Porter, M.E. (2000). *Strategia konkurencji. Metody analizy sektorów i konkurentów*, Warszawa: PWE.
- Stawasz, E. *Słownik innowacji – Leksykon haseł*, Portal innowacji, PARP: [http://www.pi.gov.pl/parp/chapter\\_96055.asp?soid=37A9377346C548F2B0F5D579D206853E](http://www.pi.gov.pl/parp/chapter_96055.asp?soid=37A9377346C548F2B0F5D579D206853E)
- Toczyńska, J. (2015). Innowacyjność usług edukacyjnych i uczelni. *Zeszyty Naukowe Politechniki Śląskiej, Seria: Organizacja i Zarządzanie*, 78 (1928), 469–471: <http://www.woiz.polsl.pl/znwoiz/z78/Toczy%F1ska.pdf>

- Act of 18 March 2011 – *Prawo o szkolnictwie wyższym, ustawy o stopniach naukowych i tytule naukowym oraz o stopniach i tytule w zakresie sztuki oraz o zmianie niektórych innych ustaw* (Journal of Laws, 2011, no. 84, item 455).
- Wach, K. (2014a). Edukacja dla przedsiębiorczości: pomiędzy przedsiębiorczą pedagogiką a edukacją ekonomiczną i biznesową. *Horyzonty Wychowania*, 13(28), 25–26.
- Wach, K. (2007). Kształtowanie postaw przedsiębiorczych w programach nauczania. Stan obecny i proponowane kierunki zmian. W: P. Wachowiak, M. Dąbrowski, B. Majewski (red.), *Kształtowanie postaw przedsiębiorczych a edukacja ekonomiczna*. Warszawa: Fundacja Promocji i Akredytacji Kierunków Ekonomicznych, 120–127.
- Wach, K. (2013). Edukacja na rzecz przedsiębiorczości wobec współczesnych wyzwań cywilizacyjno-gospodarczych. *Przedsiębiorczość – Edukacja*, 9, 246–257.
- Wach, K. (2014b), Europeanisation of Entrepreneurship Education in Europe – Looking Back and Looking Forward. *Horyzonty Wychowania*, 13(26), 11–31.
- Wójcik-Augustyński, M. (2008). Proces zarządzania strategicznego. W: J.S. Kardas, M. Wójcik-Augustyński (red.). *Zarządzanie w przedsiębiorstwie. Środowisko – procesy – systemy – zasoby*. Warszawa: Difin, 139–159.
- Zioło, Z. (2012). Miejsce przedsiębiorczości w edukacji. *Przedsiębiorczość – Edukacja*, 8, 10–23.

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