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INNOVATIVE ACTIVITY OF SMALL AND MEDIUM-SIZED ENTERPRISES IN POLAND AND SELECTED EU COUNTRIES

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Abstract: Investments in intangible assets have become an important factor in the growth and competitiveness of small and medium-sized enterprises. The aim of the article is to diagnose qualitative and quantitative aspects of investment of small and medium-sized enterprises in intangible assets in selected European Union countries. In order to achieve the research objective, a method of scientific description based on the analysis of the literature on the subject in the field of innovation and investment in intangible assets, was used. The authors have reviewed numerous reports prepared by the European Commission, the Polish Agency for Enterprise Development, OECD, Eurostat, ACCE, IFAC, and Edinburgh Group regarding the SME sector. The article presents a comparison of selected regulations regarding intangible assets contained in the Polish Accounting Act and the International Accounting Standard No. 38 "Intangible assets".

Keywords: SME sector, intangible assets, innovation, innovation management.

1. Introduction

The SME sector is of key importance to economic development, conducive to the elimination of social exclusion and the creation of new jobs in the region. Investments in intangible assets in the SME sector ensure development of this sector of economy. In 2016, there were 2.01 million active enterprises in Poland, while in 2009, there were 1.67 million of them. Micro-enterprises are characterised by the highest growth dynamics, their number in 2016 was higher by 21% compared to 2009. The largest increase in the number of micro-enterprises took place in 2014 – 2016. In 2015, this number grew by 4.2% compared to 2014, and in 2016 by 5.4% compared to 2015 (PARP, 2018). In recent years, the share of the SME sector in the creation of GDP has also increased – by 49.9% in 2015.

In the face of strong information asymmetries, SMEs have the opportunity to use innovations in order to implement the growth strategy. Investments in intangible assets offer SMEs new opportunities to participate in global economy, innovations and development. Between 2010 and 2016, the expenditure of the enterprise sector on R&D in relation to GDP increased more than threefold - from 0.19% in 2010 to 0.63% in 2016, and in absolute terms – by 9 billion PLN (PARP, 2018). In 2017, compared to 2016, capital expenditure in the SME sector increased. The largest increase was recorded in micro companies: from PLN 15,600 to PLN 17,100, followed by small ones: from PLN 293,000 to PLN 319,000and medium ones: from PLN 2.31 million to PLN 2.51 million (PARP, 2019). Between 2014 and 2016, 30.7% of enterprises innovatively and actively undertook cooperation with other entities. A favourable business environment is essential to encourage entrepreneurs to take risks, experiment and support the potential for economic growth. The competences in the fields such us entrepreneurship, management, ability to motivate employees, modern technologies and innovation, as well us networking or stable legal regulations, play a key role in the functioning of SMEs.

2. Innovation management in small and medium-sized enterprises

Innovation, together with investments in intangible and legal assets, is an important element of building a competitive advantage of small and medium-sized enterprises (Sahut, and Peris-Ortiz, 2014). Small, medium-sized enterprises are characterised by certain qualitative features, including: their management systems, autonomy, employees, organisational structures, marketing and sales, market relations, production systems, specialisation, the variety of tasks carried out, research and development activities as well as financial possibilities (Matejun, 2017). Due to their specificity, SMEs effectively build their competitive advantage, which is based on strategic flexibility, high adaptability to changes, business virtualisation and collaboration between organisations, as well as natural dynamics and the ability to take advantage of the occurring opportunity (McKeown, 2017). Innovation is understood as the ability of a company from the SME sector to introduce important strategic, commercial and economic changes, as well as novelties (de Medeiros, et al., 2014). Innovations contribute to the growth of the company's value and building its lasting, effective competitive advantage by improving its quality, efficiency, economic and financial results, the increase of customer loyalty, internationalisation of its activity and the improvement of processes and management methods (Lachiewicz, and Matejun, 2016). Innovation, as defined by J.A. Schumpeter, is directly related to the entrepreneurship, which is the basis for building a competitive advantage. Attention to the mutual dependence between innovation and entrepreneurship was drawn by P.F. Drucker (Drucker, 2004). Entrepreneurship is perceived as a new – original

configuration of production factors, the implementation of a new production method, opening a new market, acquiring a new source of supply or a change of the organisational structure, management methods that significantly affect the market position of enterprises in the SME sector. Entrepreneurs seeking innovation, investing in intangible assets contribute to socio-economic, demographic and cultural changes affecting the development of the region.

The key factors contributing to the growth of productivity of small and medium-sized enterprises include (ACCA, 2019):

- access to financing,
- management practices,
- imitating new technologies,
- resourcefulness of the owner/manager,
- R&D and innovations,
- networks and external involvement.

The development of small and medium enterprises can take place at every stage of their life cycle. The owner/manager is required to think strategically about his/her decisions that can make this possible. The role and the significance of the entrepreneur in the development of SME innovativeness was emphasised by E. Maravelakis et al. (Maravelakis et al., 2006), as well as R. Mbizi et al. (Mbizi et al., 2013). According to the authors, the innovativeness potential of small and medium-sized enterprises is based on the entrepreneur's/manager's resourcefulness related to pro-innovative thinking and a bold market orientation based on strategic search for market niches and exploiting opportunities. According to the report presented by ACCE (Association of Chartered Certified Accountants) in January 2019 "Scale-up success: What do SMEs need to supercharge their growth?", an entrepreneur can achieve a competitive advantage in the market by implementing an innovative strategy and paying attention to the following elements of the management process:

1. Defining a way of thinking about development – when employees share the vision and strategy of the organisation, they are more inclined to perceive the future of the organisation as their own. The attitude towards growth can be further supported by developing a strategy, vision and goals that will allow company employees to perceive the future of the organisation as their own.
2. The goal and vision should support the growth strategy – the potential growth of many small and medium-sized enterprises is hampered by the lack of a long-term strategy. Defining long-term goals ensures organisational flexibility and resistance to changes occurring in the external environment of SMEs.
3. Establishing a governance framework to help build resilience – growth prospects can be supported if SMEs build a management structure from the very beginning of the company's operation. This can be used to support the strategic direction of the organisation and to ensure its greater flexibility and resilience as it grows.

4. Decentralisation of the management process along with the development of a small, medium enterprise, building management teams that have skills and experience gained with the development of SMEs.
5. The financial function of SMEs – it should support innovative activities and the growth strategy. Information from the financial and accounting system should support strategic decisions of management teams.
6. While implementing the innovation strategy, small and medium-sized enterprises should use external resources and develop relationships, for example with consulting companies or those offering financial, accounting and legal outsourcing services.
7. Using external advice to help the development – with limited resources, each SME faces operational challenges during growth periods. However, SMEs can improve their resilience by developing relationships with relevant sources of external advice.
8. Creating an external financing network – investing in intangible assets and innovations, small and medium enterprises look for sources of financing their investments, through brand building and trust in local markets and profiling their activities.

The relations between entrepreneurship, innovativeness and taking advantage of market opportunities are becoming the key pillars building the competitiveness of SMEs in the modern market, positively affecting the development of the region at the same time.

3. Intangible assets as defined in the Accounting Act and IAS 38

Intangible assets, i.e. licenses, patents, trademarks and utility, not having a physical form, may decide about the competitive advantage of a small, medium-sized enterprise on the market. There are some discrepancies between the Accounting Act and the International Accounting Standard No. 38 in the aspect of the intangible assets recognition, even on the basis of their definitions. In the Accounting Act, the legislator uses the nomenclature "intangible assets". In the case of applying IFRS (International Financial Reporting Standards)[1] and IAS 38, the name "intangible assets" is used. Although in the name used in the standard, the words "and legal" are missing with respect to the standard, intangible assets include property rights and those resulting from legal rights and contracts. The economic usefulness of intangible assets does not result from their physical characteristics, although they are recorded quite often in technical documentation or on data carriers.

[1] International Financial Reporting Standards (International Financial Reporting Standards (IFRS) – standards and their interpretations approved by the International Accounting Standards Board – (IASB)). International Accounting Standards (IAS) – were published between 1973 and 2001 by the International Accounting Standards Committee (IASC). From 1 April 2001, IASB took over responsibility from the IASC for establishing IAS. The new Council adopted the existing IAS and interpretations of the Standing Interpretation Committee (SIC). IASB continues to create standards referred to as the new IFRS standards.

Pursuant to the Accounting Act (Article 3, paragraph 1, item 14), intangible assets and legal ones include:

a) proprietary copyrights, related rights, licenses, concessions,
b) rights to inventions, patents, trademarks, utility models and decorative designs,
c) the know-how.

In the case of intangible assets put to use under a rent, tenancy or leasing agreements, intangible assets are included in noncurrent assets of one of the parties, in accordance with the conditions specified in Paragraph 4. Intangible assets also include purchased goodwill and costs of completed development works (Accounting Act of 24 September 1994). The definition contained in IAS 38 §8 defines intangible assets as "an identifiable non-monetary asset without physical form". A property component is classified as intangible assets in accordance with IAS 38 if it meets all of the following conditions:

a) the ability to identify – the condition is fulfilled if the component was created as a result of the contract rights or other legal titles, it is possible to further transfer the right from this component, e.g.: sale,
b) control – an entity should exercise control over it, an entity possessing intangible assets has the right to obtain future economic benefits from this component, exercising control does not have to result from having a legal title to the asset,
c) future economic benefits – revenues generated, for example, from the sale of a component, but also from a reduction in costs resulting from the development work.

Table 1 presents the comparison of the provisions of IAS 38 and the Accounting Act regarding the recognition of intangible assets.

Table 1.
Comparison of IFRS/IAS with the Accounting Act of 29 September 1994

The issues of difference	IFRS/IAS 38	Accounting Act
Research and development	IFRS require the division of activities into the research and development part. Costs incurred at the stage of development work may be subject to capitalisation under specific conditions.	There are no regulations regarding the separation of research and development works. Accounting Act specifies the conditions that enable the inclusion of intangible assets on this account, but does not specify the principles of recognising expenditures during research activities.
Valuation of intangible assets at fair value	Allowed after meeting certain conditions.	Illegal.
Period of use, verification, depreciation methods and final value	Annual verification.	Required periodically, without the frequency of verification being defined.
The period of making amortisation charges for development costs	By period of use.	Development works are written off over the period of economic usefulness of the results of development works. If, in exceptional cases, it is not possible to reliably estimate the period of economic usefulness of the results of completed

		development works, the period of making write-offs may not exceed 5 years.
The useful life of intangible assets	It may be definite or indefinite.	It can be specified, however, in some cases, determining the residual value may lead to no need to make depreciation write-offs.
Recognising the cost of SKI - 32 websites	It gives you the capitalisation of some of the initial costs of building infrastructure and graphic design incurred in connection with the creation of a website.	Lack of detailed regulations in this area in the Accounting Act. The differences may concern the range of capitalisation costs.

Source: Deloitte, 2018. Aspire with assurance. A practical guide to IFRS.

The significant differences between the Accounting Act and IAS 38 relate to goodwill. According to IAS 38, goodwill generated on its own is not classified as intangible assets. However, if the goodwill arises from the acquisition, it is an intangible asset, however, it is not redeemable due to an unidentified end of use. An impairment test is performed instead. According to the Accounting Act, Article 44 b, paragraph 10, goodwill should be depreciated over its useful life. If it is impossible to determine the period, we assume 5 years. The permitted method of linear depreciation is charged to other operating expenses.

IAS 38 does not specify the minimum useful life of an intangible asset. The Accounting Act does not contain the conditions for identification of intangible assets. In both regulations, the common points include: exercising control and deriving economic benefits from the use of a given intangible asset.

3. Investments in intangible assets of small and medium-sized enterprises

The concept of innovation was introduced at the beginning of the 20th century by the Austrian economist Joseph Schumpeter. The term "innovation" comes from the Latin word "innovatio" or "innovare", which means "new". J. Schumpeter based the definition of innovation on the following pillars (Schumpeter, 1960, p.104):

- introduction of new goods that consumers have not known yet, or a new product,
- introduction of a new production method that has not yet been practically tested in a given industry,
- the opening of a new market, i.e. a market where a particular industry type has been introduced before,
- obtaining a new source of raw materials or semi-finished products, regardless of whether the source already existed or had to be created,
- creation of a new industry organisation.

In the first years of functioning, the term "innovation" was perceived from the macro-economic point of view. With time, innovations in micro-economic categories begun to be perceived and, consequently, technological development has gained the greatest importance.

The analysis of the definition of the term "innovation" among selected authors in foreign and Polish literature is presented in Table 2.

Table 2.
Definitions of the term "innovation" by selected authors

Author	Definition of the term innovation
J. Schumpeter	novelty, product, commodity, imitation
Oslo Mannual	novelty, improvement, product, process
P. Kotler	novelty, good, service, idea, product
R.W. Griffin	development, novelty, product, service, use
S. Jobs	idea, lack of innovation system creation
P. R. Whitfield	workflow, problem resolution, novelty
R. Johnston	product improvement
W. Grudzewski, I. Hejduk	novelty, product, service, distinction from existing forms
Z. Madej	novelty, improvement, failure
Z. Pietrasiński	positive changes in products, services; progress

Source: Brożek, 2017.

Investments in intangible assets have become one of the most important factors in the growth of small and medium-sized enterprises. The growing share of assets held by small and medium-sized enterprises is "non-physical"/+ "immaterial". In the balance sheet of enterprises, they are arranged in accordance with the principle of increasing liquidity, i.e. starting from those relatively difficult to transfer, for example intellectual property rights, and ending with those that are conventional but still important for business success. Investments in intangible assets drive competitive differentiators in the sector of small and medium-sized enterprises, which affects the results of national economies. Many studies have shown that intangible assets are closely related to a high level of economic growth, increase in turnover, profitability and employment in the SME sector[2]. The awareness of managers running enterprises in the SME sector is growing in that, apart from research and development, also new software, databases, copyrights, projects, trademarks, work organisation and distribution networks are of the greatest importance for the company's competitiveness on the market. Intangible assets have become the key element of the production function, service provision, the driving force of innovation and growth. Investments in the R&D (Research & Development) sector in selected European Union countries with regard to small and medium-sized enterprises is presented in Table 3.

[2] The study of the relationship of investments in intangible assets with economic development, investment financing in the SME sector in OECD countries is discussed in more detail in the reports: Demmou, L., Stefanescu, I., Arquie, A., Productivity growth and finance: The role of intangible assets and sector level analysis. OECD Economics Department Working Papers No. 1547. 2019. Brassell, M., Boschmans, K., Fostering the use of intangibles to strengthen SME access to finance. OECD SME and Entrepreneurship Paper. 2018.

Table 3.

Investments of small, medium-sized enterprises in research and development (R&D), in selected European Union countries (BERD[3]) in the years 2010-2016, in million EUR

Micro-enterprises - employing up to 9 employees							
Year / Country	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Germany	-	255	-	303	-	258	-
Netherlands	-	524	515	530b	569	614	589
Belgium	125	150	199	209	-	236	-
Spain	369	386	355	326	316	293	360
France	743	761	898	905	-	-	-
Italy	149	148	179	258	194	319	398
Austria	-	166d	-	159d	-	192	-
Poland	-	31	31	43	83	89	229
United Kingdom	303	297	296	304	383	508	452
Finland	141	150	157	162	158	184	193
Portugal	33	42	45	52	48	43	54
Hungary	60	57	56	81	88	103	32
Small enterprises – employing from 9 to 49 employees							
Year / Country	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Germany	-	1 629	-	1 599	-	1 480	-
Netherlands	542	833b	685b	771	688	870	1 092
Belgium	407	458	566	601	-	871	-
Spain	1 364	1 303	1 249	1 166	1 108	1 081	1 153
France	2 178	2 187	2 365	2 608	-	-	-
Italy	797	853	812	920	1 049	1 061	1 454
Austria	-	496	-	528	-	626	-
Poland	55	84	118	118	150	202	256
United Kingdom	803	902	1 004	956	1 149	1 532	1 342
Finland	325	356	396	418	420	446	467
Portugal	133	140	143	165	192	187	207
Hungary	89	116	130	173	161	210	110
Medium-sized enterprises - employing from 50 to 249 employees							
Year / Country	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Germany	3 375	3 728	5 657	3 288	-	3 515	3 573
Netherlands	1 110	1 766	1 742	1 608	1 699	1 656	1 833
Belgium	1 245	1 271	1 390	1 445	-	1 731	-
Spain	2 032	1 897	1 729	1 719	1 714	1 774	1 778
France	3 504	3 540	3 809	3 996	-	-	-
Italy	1 427	1 523	1 548	1 884	1 971	2 310	2 693
Austria	-	1 131	-	1 213	-	1 350	-
Poland	126	173	288	385	362	431	575
United Kingdom	2 756	3 191	4 490	3 721	4 219	4 564	3 769
Finland	466	496	469	422	437	485	616
Portugal	254	266	259	247	234	254	279
Hungary	113	136	163	199	185	168	182

Source: own study based on https://ec.europa.eu/eurostat/data/database.

[3]Expenses of enterprises for research and development, BERD (business expenditure on research and development), expenditures on research and development works whose capital investors are the organisations conducting business activity.

Among micro-entrepreneurs, the majority of funds for research and development is provided by entrepreneurs from Holland, United Kingdom, Italy and Spain. Polish micro-entrepreneurs allocated EUR 229 million for this purpose in 2016, which is an increase of EUR 140 million, compared to 2015. The expenses of Polish micro-enterprises in 2016 allocated to the R&D sector exceeded funds allocated by Finnish, Portuguese or Hungarian companies. Analysing the expenditures allocated to the R&D sector of small enterprises, the largest costs are borne by enterprises from the Netherlands, Germany, Italy, Great Britain or Spain. Finnish small companies allocated approximately EUR 211 million more for research and development in 2016 than small companies from Poland. Looking at Polish small companies since 2010, there has been a large increase in the funds allocated for innovative purposes by approximately EUR 201 million (in 2016 by 26% compared to 2015). In 2016, the expenses of small companies from Poland were around EUR 49 million higher than Portuguese ones and more than twice as large as Hungarian ones.

In the group of medium-sized enterprises, the largest expenditure on research and development was incurred by entrepreneurs from Germany, Great Britain, Italy and the Netherlands. In the years 2010 - 2016, the increase in expenses of Polish medium-sized enterprises increased by approximately EUR 449 million. Expenses of Polish medium-sized enterprises in 2016 were about EUR 41 million lower than the Finnish ones. On the other hand, Polish medium-sized enterprises spent on innovation in the R&D sector about EUR 296 million more than the Portuguese entrepreneurs and about EUR 393 million more than the Hungarian ones.

Table 4.
Investments of small, medium-sized enterprises in research and development (R&D), in selected European Union countries (BERD) in the years 2015-2016, in EUR per capita

Country	Micro-enterprises		Small enterprises		Medium-sized enterprises	
	2015	2016	2015	2016	2015	2016
Denmark	34.6	10.2p	121.6	155.8p	90	13.8p
Spain	6.3	7.8	38.2	38.3	23.3	24.8
Italy	5.3	6.6	38	44.4	17.5	24
Hungary	10.5	3.3	17.1	18.5	21.3	11.2
Netherlands	36.4	34.7	98	108	51.5	64.3
Poland	2.3	6.1	11.3	15.2	5.3	6.7
Portugal	4.2	5.2	24.6	27.1	18	20
Slovenia	17.3	15.3	60.1	49.1	56.6	47.4
Finland	33.7	35.3	88.7	112.4	81.5	85.1
Germany	3.2	-	43.3	43.5	18,2	-
United Kingdom	7.8	6.9	70.4	57.6	23.6	20.5

Source: own study based on https://ec.europa.eu/eurostat/data/database, p - predicted data.

When assessing expenditures of the SME sector on research and development in selected EU countries in the years 2015 - 2016 in EUR conversion per capita, the largest funds are allocated by entrepreneurs from Denmark, the Netherlands and Finland. Polish micro-entrepreneurs in 2016 spent EUR 6.10 per capita, compared to 2015 there was an increase of

about EUR 3.8 per capita. Polish micro-enterprises allocate funds for research and development in the comparable amount to Italian or British ones, far more than Hungarian ones by EUR 2.8 per capita. In the small business sector, the situation of Polish companies is much less favourable. The largest amounts of funds per capita in 2016 were provided by companies in the following countries: Denmark EUR 155.8, the Netherlands EUR 108, Finland EUR 112.4. Polish small entrepreneurs allocated EUR 15.2, the amount being EUR 3.3 less than Hungarian enterprises. Comparing the results in 2016 and 2015, there was an increase of EUR 3.9. Despite that, it is still the lowest result among the analysed countries. Among medium-sized enterprises, the largest expenditures in EUR per capita in 2016 were borne by: Finnish (EUR85.1), Dutch (EUR 64.3), and Spanish (EUR 24.8) entrepreneurs. Noteworthy are the very good results of medium-sized Slovene enterprises, namely EUR 47.4 per capita. Polish medium-sized entrepreneurs with the result of EUR 6.7 per capita in 2016 deviate significantly from the level of expenditures of entrepreneurs from better developed countries.

Table 5.
Number of trademarks registered in selected EU countries in 2010-2016 (EUTM[4])

Year / Country	2010	2011	2012	2013	2014	2015	2016p
Denmark	1 270	1335	1377	1 430	1 529	1 742	1 560
Germany	18 319	19 887	20 010	19 926	18 661	20 400	16 557
Netherlands	3 791	3 910	3 951	3 864	3 977	4 532	3 787
Belgium	1 888	1 825	1 751	1 936	2 061	2 239	1 829
Spain	7 789	7 975	8 032	8 484	8 768	9 405	8 042
France	6 979	7 414	7 326	7 399	7 475	7 899	6 433
Italy	7 987	8 095	8 089	8 756	9 246	9 930	9 758
Austria	2 534	2 631	2 873	2 935	2 897	2,966	2 531
Poland	1 767	1 944	2 152	2 735	3 223	3 663	2 953
United Kingdom	8 789	9 547	10 236	10 854	11 787	12 526	9 646
Finland	963	989	1 056	1 081	1 037	1 372	1 331
Portugal	888	1,006	993	1 096	1 279	1 331	1 227
Hungary	382	353	348	470	532	565	475

Source: own study based on https://ec.europa.eu/eurostat/data /database, , p – forecasted data for 2016.

The number of trademarks registered in selected EU countries between 2010 and 2016 is presented in Table 5. The number of trademarks submitted by Polish entrepreneurs increased by 67%. In 2016, the largest number of trademarks were registered by: German, Italian, French and British entrepreneurs. The number of registered patents between 2010 and 2017 in selected EU countries is presented in Table 6.

[4] EUTM – EU trademark. It is a trademark that is waiting for registration or registered in the European Union. Registration in the EU trademark system provides protection in all EU Member States.

Table 6.
Number of patents registered in selected EU countries in 2010 - 2017 (EPO[5])

Year / Country	2010	2011	2012	2013	2014	2015	2016	2017e
Denmark	1 289	1 466	1 318	1 356	1 379	1 362	1 372	1 417
Germany	23 443	22 963	21 930	21 427	20 754	21 030	20 138	18 881
Netherlands	3 059	3 449	3 389	3 367	3 470	3 500	3 452	3 477
Belgium	1 515	1 516	1 506	1 536	1 543	1 569	1 589	1 655
Spain	1 511	1 480	1 517	1 512	1 513	1 628	1 641	1 654
France	8 489	8 923	8 895	8 972	9 133	9 601	9 555	9 502
Italy	4 500	4 414	4 333	4 301	4 234	4 369	4 242	4 148
Austria	1 770	1 800	1 862	1 913	1 961	2 001	2 025	2 029
Poland	361	384	483	547	609	578	627	686
United Kingdom	5 353	5 434	5 388	5 369	5 374	5 692	5 543	5 437
Finland	1 392	1 347	1 637	1 745	1 862	1 384	1 314	1 296
Portugal	95	121	112	118	126	137	139	142
Hungary	195	221	207	2015	222	205	2017	195

Source: own study based on https://ec.europa.eu/eurostat/data/database, e – forecasted data for 2017.

The number of registered patents in 2017 in relation to 2010 increased in Poland by 90%. The largest number of patents in 2017 was registered in Germany, Great Britain, France and the Netherlands. The number of patents registered in 2017 per million inhabitants is shown in Figure 1.

Per million inhabitants, the largest number of patents in 2017 was reported by Sweden (283), Denmark (246), Finland (235), Germany (228), Austria (231), and the Netherlands (203). In 2017, Poland obtained 17 patent applications per million inhabitants, four entries more than Portugal, but two submissions fewer than Hungary and 15 fewer than the Czech Republic. Bulgaria and Romania reported the smallest number of patents per million inhabitants, four and five, respectively.

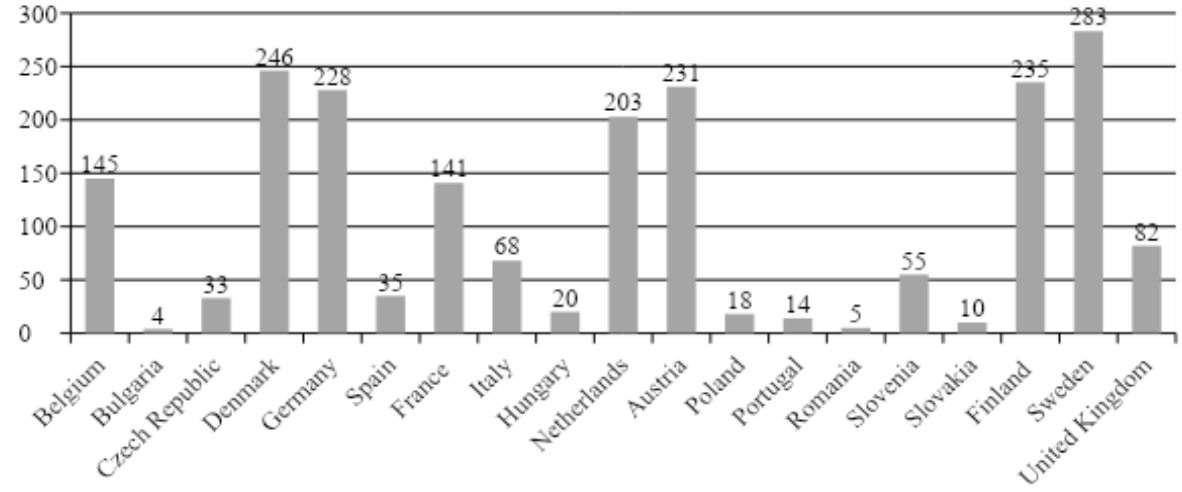

Figure 1. The number of patents registered in selected EU countries in 2017, per million inhabitants
Source: own study based on https://ec.europa.eu/ eurostat/data/database.

[5] EPO – European Patent Organisation based in Munich. Organisation granting European patents and associating countries recognising the protection of inventions within their territory.

5. Summary

Small and medium-sized enterprises face many challenges in today's fast-changing economy. Investments in research and development, patents and software that have been perceived for a long time as key intangible assets, other types of assets, such as databases, copyrights, projects, trademarks, organisations, distribution networks have become the key issues for the growth of small and medium-sized enterprises and their development in the region.

Among the analysed EU countries, the largest expenditure on research and development in the SME sector is allocated by entrepreneurs from Germany, Great Britain, the Netherlands, Italy and Spain. In Poland, the expenditure of the SME sector on innovation is steadily rising. In the micro-enterprise sector, in 2016 compared to 2015, it increased from approximately EUR 140 million, among small enterprises by approx. EUR 54 million, and among medium-sized enterprises by approximately EUR 144 million. The funds allocated by Polish entrepreneurs are similar to those from Hungary or Portugal. Considering the investments of small and medium enterprises in the R&D sector in EUR per capita, in 2016 the largest funds were allocated by small entrepreneurs from: Denmark (EUR 155.8), the Netherlands (EUR 108) and Finland (EUR 112.4). The funds allocated by small entrepreneurs from Poland (EUR 15.2) are lower by EUR 3.3 than those from Hungary and the lowest among the analysed countries. In the micro business sector, the results of Polish entrepreneurs being EUR 6.1 per capita are comparable to the Portuguese (EUR 5.2), the Italian (EUR 6.6) and the British (EUR 6.9). Among selected EU countries, the expenditure of medium-sized enterprises from Poland on R&D in 2016 was the lowest and amounted to only EUR 6.7, compared to the expenditure from Finland (EUR 85.1), and the Netherlands (EUR 64.3). Between 2010 and 2016, the number of trademarks registered by Polish entrepreneurs increased by 67%. Compared to entrepreneurs from France, Germany, Spain, Italy or Great Britain, expenditures of entrepreneurs from Poland are 3-4 times lower. In the same years, the number of patents filed from Poland also increased. Analysing the number of patents per million inhabitants in 2017, the Scandinavian countries dominate: Sweden (283), Finland (235), Denmark (246). Poland, with the result of 18 patents, overtook Portugal by 4, but it is still one of the last places.

Among selected EU countries, the largest expenditure on modern investments in the SME sector was allocated by entrepreneurs from Germany, France, the Netherlands, Italy, Denmark, Sweden and Finland. Polish entrepreneurs systematically increase funds on the R&D sector, they are comparable to those allocated by entrepreneurs from Central and Eastern Europe. However, these amounts are incomparably low in relation to those allocated by entrepreneurs from strong, highly developed countries of Western Europe and Scandinavia. Entrepreneurs in Poland should strive to further increase the funds for investments in intangible assets because they are one of the main factors determining their competitiveness, also on the local market.

Intangible assets affect the development in a complementary way, e.g. the impact of investment in research and development depends on the company's ability to invest in other intangible assets, such as managerial skills, network building or improving organisational skills. In conducting a small- and medium-sized business, the proper recognition and valuation of intangible assets are important in accordance with the applicable regulations – the Accounting Act and IAS 38 "Intangible Assets".

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