

FINANCIAL CONDITIONING AS A BAROMETER OF INNOVATIVE ACTIVITIES OF ENTERPRISES IN POLAND IN 2008-2015

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Abstract: Innovations have an impact on the competitiveness of enterprises and constitute the basis for social and economic development. Enterprises are increasingly undertaking innovative activities and are allocating a specific amount of outlays for this purpose. In the herein paper, there is a concentration on the identification of factors determining the innovativeness of enterprises with particular mention of the group of financial conditioning. The premise for undertaking such an area of research was firstly the desire to verify the thesis of the precursor of the theory of innovation, namely J.A. Schumpeter (1960, p. 160), who opined that “an entrepreneur – innovator does not need to have his own financial resources, (...) He must make a positive impression on the financier and convince him to finance the innovative undertaking (...), the innovator becomes a debtor in order to be able to produce (...)”, which creates the possibility of availing of monetary funds, while on the other hand, referring to the financial conditioning of conducting innovative activities in enterprises in Poland.

Keywords: innovativeness of enterprises, source of financing innovative activities, innovative maturity.

FINANSOWE UWARUNKOWANIA JAKO BAROMETR DZIAŁALNOŚCI INNOWACYJNEJ PRZEDSIĘBIORSTW W POLSCE W LATACH 2008-2015

Streszczenie: Innowacje wpływają na konkurencyjność przedsiębiorstw oraz stanowią podstawę rozwoju społecznego i gospodarczego. Przedsiębiorstwa coraz częściej podejmują tę działalność innowacyjną, przeznaczając na ten cel określoną ilość nakładów. W artykule skoncentrowano się na identyfikacji czynników determinujących innowacyjność przedsiębiorstw ze szczególnym wskazaniem na grupę uwarunkowań finansowych. Przesłanką podjęcia takiego nurtu badań, była po pierwsze chęć weryfikacji tezy prekursora teorii innowacji, czyli J.A. Schumpetera (1960, p. 160), który uważał, że przedsiębiorca – innowator nie musi posiadać własnych środków finansowych, (...) musi wywrzeć na finansującym pozytywne wrażenie i przekonać go do finansowania innowacyjnego przedsięwzięcia (...), innowator, zostaje dłużnikiem, aby móc produkować (...), co stwarza

możliwości wykorzystania środków pieniężnych, a po drugie odniesienie się do finansowych uwarunkowań prowadzenia działalności innowacyjnej przedsiębiorstw w Polsce.

Słowa kluczowe: innowacyjność przedsiębiorstw, źródła finansowania działalności innowacyjnej, dojrzałość innowacyjna.

1. Introduction

Managing a contemporary enterprise requires a pro-market approach to a client and his needs which are undergoing dynamic change. The management of an enterprise in an intricate, changeable environment that is difficult to anticipate requires, in the opinion of J. Lichtarski, the application of varied concepts and methods of management that ensure the constant functioning of the enterprises at hand, as well as those that shall support the implementation of change (Lichtarski, 2005, p. 16). The activity that arises from the scale and multi-faceted approach to the theoretical deliberations in the sphere of the concepts and methods of the management of enterprises, as well as the particular interest in them shown by management staff have led to the need to define the relations between the concepts and methods of management. The nature of these ties may be defined as the following: complementarity, contradiction, substitutability and incomparability (Bieńkowska, and Zgrzywna-Ziemak, pp. 20-21).

One of the key sources enabling enterprises to ensure the appropriate competitive advantage is that of innovations. Their potential, scope of impact, types, while particularly the economic effects gained as a result of implementing innovations creates innovativeness as a particular category that should be subject to analysis from a multi-faceted perspective. The afore-mentioned aspect ensures the perception of innovations not only with reference to their substantive content, but first and foremost in the context of the possibilities of dynamic development. A significant condition of the innovativeness of enterprises is to take account of the necessity to incur costs with regard to innovative activity. For a multitude of enterprises, the search for an increase in financial capital constitutes the prevalent strategic aim, which in turn causes the clients' needs and employee satisfaction to be pushed aside. Such a hierarchy of values has an impact on the restriction of innovative activity, which are capital-intensive, risky and bring benefits at a later stage (Borowiecki, and Dziura, 2016, p. 13). It is necessary to underline the fact that innovativeness constitutes the principal creative power of the contemporary organization, which, if it becomes a regular element in the strategic management leads to the acquisition of competitive advantage. The problematic issues of innovativeness in conditions of the global economy and the growing competitiveness is subject to multi-dimensional identification and quantification (Romanowska, 2014, p. 106) due to the complexity of the conditioning of the implementation of the new solutions in

enterprises. Hence, the deliberations presented only relate to the chosen research areas whose conceptualization was accepted in terms of the relation of innovativeness of enterprises and their financial aspects. The thesis proposed by J. A. Schumpeter inspired the undertaking of deliberations in this field, while it was also justifiable to indicate the degree of innovativeness of enterprises in Poland, as well as the possibilities of financing it. In the viewpoint of A. Bieńkowska, these aspects condition the maturity of an organization, which constitutes its flexibility and the skill of adjusting to the emerging changes in the environment gained through experience gained (Bieńkowska, 2016, pp. 27-28). By taking account of the theoretical deliberations conducted in literature, while also the results of empirical research in the sphere of the innovativeness of enterprises in Poland, the question arises as to why so many enterprises do not implement innovations, or implement them in a restricted sense? Another important aim of the herein paper was also to search for the answer to the question of whether financial conditioning constitutes a significant barrier in terms of undertaking innovative activities. Is the prevalent source of financing innovations equity capital or external economic entities?

2. Conditioning of innovativeness of enterprises

The innovativeness of an enterprise is associated with its creativity, while also its ability to prepare projects, absorb innovations, their application and proliferation (Brzóska, and Cierkosz, 2016, p. 13). Innovativeness at the level of an enterprise is the reflection of a specified activity, combined with a multitude of feedback as the consequence of the interactive process of learning, which is the result of the intellectual process of the network, entity and institutional ties evolving over time (Janasz, and Wiśniewska, 2014, pp. 186-187). In the conditions of the global economy, it is therefore necessary to implement innovative solutions that are treated as an economic imperative (Borowiecki, and Jaki, 2015, p. 7).

The aforesaid dependencies are reflected in the evaluation of the innovative activities, in terms of aims and strategies of the development of enterprises. An important aspect in the evaluation of the state of the innovativeness of enterprises is that of the distinction of factors that decide on the level of their innovativeness, namely the ability to create and implement innovations. The source of activation of innovative activities in enterprises is first and foremost, the pressure of competition, the technical environment and the users of the market novelties themselves. Likewise, the recognition of the necessity to undertake activities in the field of innovations by an enterprises is also important. It is necessary to emphasize that the activity and level of innovativeness of enterprises are conditioned by external factors (Sopińska, 2010, pp. 163-164.) (exogenous) and internal factors (endogenic). The groups of

external and internal determinants that have an impact on the level of innovativeness of enterprises have been presented in Fig.1.

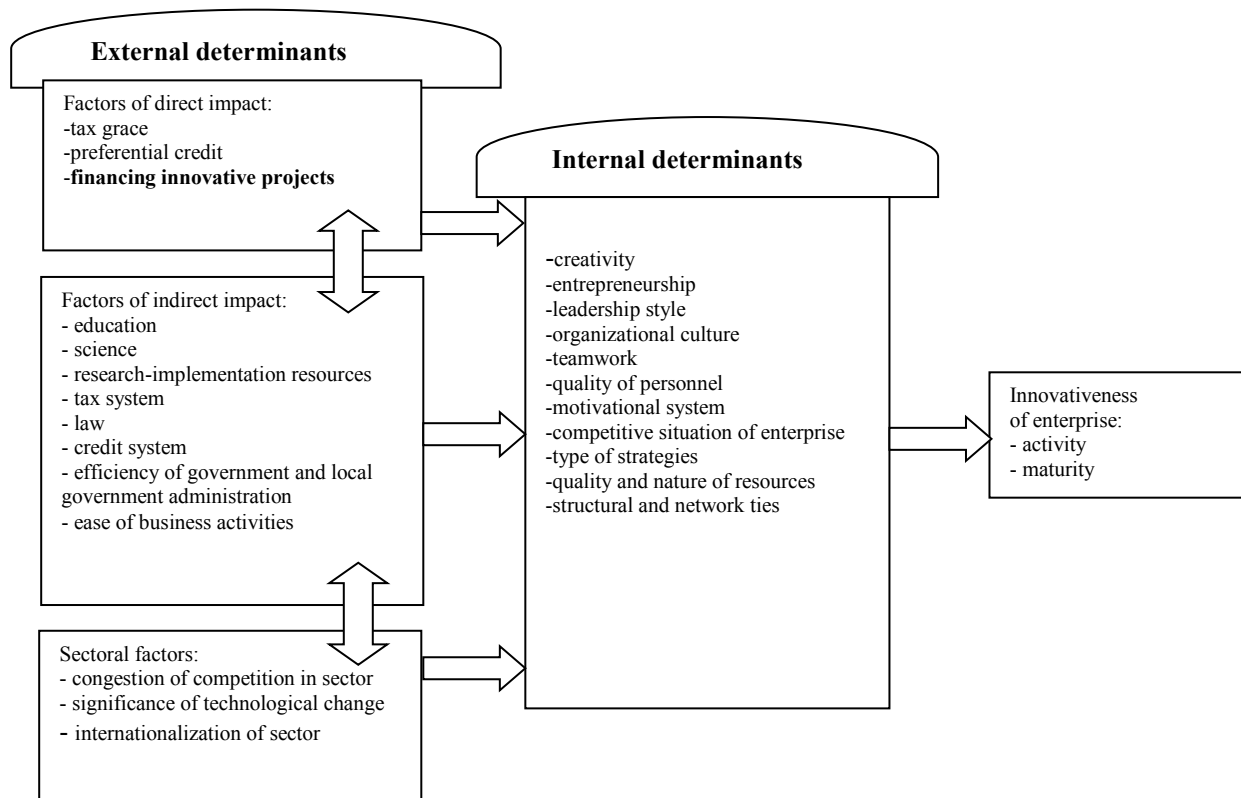


Figure 1. Model determinant of innovativeness of enterprises. Adapted from: (Romanowska, 2016, p. 30).

The comprehensive illustration of the model of the determinant of the innovativeness of enterprises by M. Romanowska specifies an area of further exploration. It is essential to emphasize that the external determinants have an impact on the level of the innovativeness of enterprises by shaping the internal determinants. The distinguished innovative activity of enterprises signifies activities within a narrow scope and rather incidental. However, the innovative maturity of enterprises displays systematic and multi-faceted activities geared towards development, competitiveness and financial success (Romanowska, 2014, p. 30). The model of the determinant gives rise to the importance of the notion of resources with relation to innovativeness, particularly the possibility of creating value. In these deliberations, W. Dyduch and M. Bratnicki quite rightfully claim that an important issue is not only the creation of value as a result of innovative activity, but also seizing those values in order to ensure competitive advantage. The aforesaid relations are genetically registered in the innovative-competitive area (Dyduch, and Bratnicki, 2015, p. 78).

The realization of innovative activities in enterprises is the result of varying conditions that are necessary to take account of in terms of innovative strategies. The preparation of a model of financing innovative activity is essential for growth in the level of

innovativeness of enterprises, particularly in the increased participation of private capital. Likewise, it is also necessary to ensure a higher level of financing innovations from public capital. The main argument arising from the limited efficiency of direct financial aid is associated with its clear and temporary nature, while also restriction on the principles of free trade and competition. Indirect factors have a long-lasting and broad scope of impact on the innovativeness of enterprises, whereby they can create a stable infrastructure of the innovative activities of enterprises. Particular expectations in this sphere refer to the financial conditions created by the state, banks and venture capital (Romanowska, 2014, p. 32).

3. Financial conditioning of conducting innovative activities in Poland in 2008-2015

By conducting an analysis of the data illustrated in Table 1, it is possible to conclude that much greater outlays on innovative activity were made by industrial enterprises in comparison with service firms, in which the value of 24.7bn PLN in 2008 was reduced to a level of 20.8bn PLN in 2011, however, in the years 2012-2015 these outlays oscillated within a range of between 20.9bn PLN and 31.1bn PLN. Service firms made the lowest outlays on innovative activity in 2009 (8.3bn PLN), whereas their highest level in 2012 (15.1bn PLN). Following this period, outlays on innovations oscillated within a range of between 11.9bn PLN and 13bn PLN.

Table 1.

Expenditures on innovation activities in enterprises in Poland in 2008-2015

		2008	2009	2010	2011	2012	2013	2014	2015
Expenditures on innovation activities in enterprises in billion PLN	Industrial	24,7	22,6	23,8	20,8	21,5	20,9	24,6	31,1
	Services	10,7	8,3	10,8	10,9	15,1	11,9	13,0	12,6

Note: Own elaboration based on the data of the Central Statistical Office of Poland (27.05.2018).

In 2015, the percentage share of sales revenue from new or significantly improved products launched on the market in terms of total revenue in the years of 2013-2015 amounted to 9.5% in industrial enterprises, whereas 3.0% in service firms. In the case of industrial enterprises, if the period of 2009 - 2015 is taken into account, while also the three-year period of 2010-2012, it is possible to conclude that a similar indicator of 9.2% was reached, whereas in the remaining periods analysed this oscillated within a range of between 8.6% and 8.9%. Much lower values were generated in the case of service firms, although it is possible to indicate that this group of entities noted slight change in terms of the analysed period as the indicator ranged from 3.0% to 3.4%, which is reflected by the data shown in Table 2.

Table 2.

Revenues from sale of new or significantly improved products as a share of total revenues from sale in enterprises in Poland in 2008-2015

	Products placed on the market in % of sales revenues					
	Total		New for market		New only for enterprise	
	industrial enterprise	service enterprises	industrial enterprise	service enterprises	industrial enterprise	service enterprises
2008-2010	11,3	4,1	7,1	1,6	4,3	2,5
2009-2011	8,9	3,3	5,2	1,4	3,7	1,9
2010-2012	9,2	3,1	3,8	1,4	5,4	1,8
2011-2013	8,6	3,4	3,8	1,6	4,8	1,8
2012-2014	8,8	3,3	3,7	1,7	5,1	1,6
2013-2015	9,5	3,0	4,0	1,3	5,5	1,7

Note: Own elaboration based on the data of the Central Statistical Office of Poland (27.05.2018)

The innovative activity of enterprises in Poland is restricted by numerous barriers, although it is possible to indicate that economic barriers are of particular importance. In Table 3, the percentage share of enterprises has been presented in terms of their assessment of the significance of the given economic factor, which is high in enterprises in Poland as a whole in the years of 2008-2014.

Table 3.

Economic barriers to innovation by industrial and service enterprises in 2008-2015

Economic barriers to innovation	Share of enterprises, which assessed the significance of a given determinant, as high in total enterprises in Poland in %					
	2008-2010		2010-2012		2012-2014	
	industrial enterprise	service enterprises	industrial enterprise	service enterprises	industrial enterprise	service enterprises
Lack of internal finance for innovation	31,8	24,1	22,8	19,1	28,4	20,4
Lack of external finance for innovation - credit or private equity (including venture capital)	26,9	21,3	-	-	18,4	15,4
Too high innovation costs	34,2	27,4	20,1	18,9	-	-
Difficulties in obtaining public grants or subsidies for innovation)	-	-	-	-	18,4	15,2

Note: Own elaboration based on the data of the Central Statistical Office of Poland (27.05.2018)

The industrial and service activities of enterprises is restricted by obstacles hindering the conducting of innovative activities or having the impact of taking the decision not to conduct them. On the basis of the analysis of the data illustrated in Table 3, it is possible to conclude that in the case of the economic barriers, the implementation of innovations on the market in the period of 2008-2010 was prevalent both in the case of industrial enterprises (34.2%), as well as service firms (27.4%) in terms of the high costs of innovations. The second significant determinant was the lack of the appropriate financial resources, whereas in the years of

2012-2014 there was also an indication of the difficulties of acquiring public grants, or subsidies for innovations. During the period of 2008-2010, as many as 31.8% of industrial enterprises and 2.1% of service firms argued against the innovative barriers, citing the lack of financial possibilities. In the period of 2012-2014, the percentage share of these entities slightly decreased to 28.4% and 20.4% respectively. In the case of the lack of possibilities to finance innovations from external sources, as many as 26.9% of industrial enterprises indicated this factor as a high barrier in the years of 2008-2010, while 21.3% of service firms (in the period of 2012-2014 it was 18.4% and 15.4% respectively).

Enterprises are correct to argue about the difficulties of implementing innovation as a result of the insufficiently appropriate levels of financial resources, particularly equity capital. It is actually this type of financial outlay that dominated in the structure of the source of financing innovations by enterprises in Poland, which is confirmed by the data presented in Table 4.

Table 4.

Expenditures on innovation activities in enterprises by sources of funding in Poland in 2010-2015

		Expenditures on innovation activities in enterprises by sources of funding [in million PLN]			
		own	from state budget	from abroad	Bank credits
2010	industrial enterprise	17874,4	270,6	1879,0	2089,7
	service enterprises	9247,6	52,4	268,9	1129,2
2011	industrial enterprise	15287,2	265,4	1763,1	2153,4
	service enterprises	9115,7	118,8	205,6	1122,7
2012	industrial enterprise	15868,7	418,3	1550,1	1422,8
	service enterprises	10534,3	2139,2	956,7	728,8
2013	industrial enterprise	14897,8	330,5	1897,5	1456,2
	service enterprises	9544,8	234,0	999,2	996,6
2014	industrial enterprise	17032,2	400,8	2477,5	2487,9
	service enterprises	8709,1	283,3	2162,2	1326,8
2015	industrial enterprise	19277,3	626,7	2181,2	3574,1
	service enterprises	9221,6	202,1	2110,5	789,0

Note: Own elaboration based on the data of the Central Statistical Office of Poland (27.05.2018)

By conducting an evaluation of this, it is possible to come to the conclusion that in the years of 2010-2013 equity capital used for innovations by industrial enterprises were characterized by a downward trend, from 17874.4 bn PLN to 17897,8 bn PLN. The greater possibilities of generating equity capital as the principal source of financing innovations by these entities were witnessed in the period of 2014-2015 (17 bn PLN and 19.3 bn PLN respectively). The equity capital of service firms ranged between 8.7 bn PLN and 10.5bn PLN in the years of 2010-2015. The second significant source of financing in the analysed period was that of credit loans. However, it is necessary to draw attention to the fact that industrial enterprises availed of them much more. In fact, a significant source turned out to be external funds whereby in the period of 2010-2013 the greatest proportion of them was availed of by industrial enterprises (which oscillated between approximately 1.5 bn PLN - 1.9 bn PLN,

however service firms 0.2 bn PLN - 1 bn PLN). In the years of 2014-2015, the analysed entities generated similar values of foreign resources utilized with the aim of financing innovation (2.1 bn PLN - 2.5 bn PLN). In turn, the resources acquired from the state budget exceeded 2.1 bn PLN for service firms alone in 2012, while in the remaining years these resources oscillated in the case of industrial enterprises within a range of between 0.2 bn PLN and 0.6 bn PLN, while 0.05 bn PLN - 0.2 bn PLN in the case of service firms.

4. Conclusion

The research results presented in this area confirm the thesis referring to the relatively low level of innovativeness of enterprises in Poland. However, the justification as to why such a multitude of enterprises do not implement innovations or implement them in a restricted manner is important. In search of an answer to this question, it is possible to refer to the research carried out by A. Sopińska and P. Wachowiak, who indicate that the main barrier to innovativeness in enterprises is that of the small financial resources allocated towards research and development (40.4% of responses), wary organizational culture (32.7% of responses), the lack of the appropriate competences of the management staff (30.8 % of responses), while also the lack of their research and development facilities (28.8 % of responses) (Sopińska, and Wachowiak, 2016, p. 22). It is also confirmed by research undertaken in the herein paper that enterprises have argued about the low tendency towards innovations due to their high costs, while also the lack of the appropriate financial resources, particularly equity capital rather than external sources. Their difficulties with regard to the implementation of innovations as a result of the insufficiently appropriate levels of financial resources are mainly due to insufficient levels of equity capital. It is actually this type of financial outlay that is prevalent in the structure of the source of financing innovations in Poland. Unfortunately, in Polish reality conducting innovative activities does not reflect the thesis of J.A. Schumpeter (1960, p.160), who deemed that, “an entrepreneur – innovator does not need to have his own financial resources, (...) He must make a positive impression on the financier and convince him to finance the innovative undertaking”.

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