EFFECTS OF INNOVATION AND THEIR MEASUREMENT IN SMALL AND MEDIUM-SIZED ENTERPRISES

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Abstract

Background. The authors raise the issues of identification, evaluation and measurement of the effects brought by innovations particularly in small and medium-sized companies. This article reviews some of the world's studies, particularly on the impact of innovation on widely understood business performance.

Research aims. The study allowed to verify the relationship between the number of innovations and performance at an organizational level.

Method. In order to verify the hypothesis a direct interview was conducted with use of a questionnaire. In the second half of 2011, extensive research was carried out on innovation as its broadly understood, on a sample of 250 small and medium-sized enterprises, where only part of it involved issues related to the impact of innovation on business performance. The original research tool consisted of 35 more or less complex questions (both open and closed), and this article presents only a fraction of the obtained results. The respondents in the study were mostly directors, owners or managers at lower-levels of companies.

Key findings. Organization's key decision-makers are likely to overassess the importance of innovation and its benefits, when the relation between a large number of innovations and organization performance is, in fact, weak or even non-existent.

Keywords: Innovativeness, Innovativeness Measurement, Small and medium-sized enterprises

INTRODUCTION AND BACKGROUND

Despite a growing number of researches on innovativeness of small and medium-sized enterprises, knowledge on this subject still seems to be limited. Previous research on innovativeness of SMEs in Poland, carried out on a company level (others are conducted from a region or national economy perspective) usually refer to the same level of innovativeness, barriers, or wider, the determinants of innovative activity. Relatively little research published relates to the measurement of these entities innovativeness, in particular the impact of innovation on business performance. Focusing on SMEs as a category of entities, which were the subject of the study, makes sense based on the unquestioned role small and medium-sized enterprises play in the economies of the EU.

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These reasons justify conducting research on innovativeness of SMEs in Poland, with particular emphasis on innovativeness connection and the results achieved by these entities, which is both the object and purpose of this paper. These studies also appear to have other reasons, namely:

1. The results of studies on the impact of innovation on business performance, conducted in the world, are not always clear;
2. Research on selected aspects of the SMEs behaviour confirm significant differences in relation to the entities in this category in other countries, this is indicated by e.g. recently published results of research on low capability to cooperate of Polish small companies, lower than in other countries (Strzyżewska, 2011, pp. 211–227).

Concept of Innovation and Innovativeness

Innovation is an ambiguous term (Penc, 1999, pp. 141–143). Literature studies confirm that in the modern approach to innovation, rather broad definitions dominate. From the entrepreneur's perspective, innovation is treated as a process that allows transforming entrepreneurial occasions into attractive ideas (Kuratko & Hodgetts, 2000, p.120). Broad understanding of innovation is reflected in the definition of innovation which goes beyond product and technology innovation (although the literature gives more attention to them than to other types), also taking into account organizational innovation, which simply means – related to a field of "organization and management" and interactions with environment (Brzeziński, 2001, p. 28).

It can be assumed that innovation is commonly understood as the introduction of significant changes that improve products/services of the organization, its processes, procedures and business model, thereby providing a new value to stakeholders (Timmerman, 2009, p.6). Extension of the concept of innovation is also confirmed in numerous typologies of innovation, e.g. the one proposed by Francis and Bessant. They distinguish the following types of innovation in a firm (tying them with the innovation capability): (a) introduction of a new product or its improvement, (b) introduction of a new process or its improvement, (c) definition or redefinition of the company or product's position, and (d) definition or redefinition of the company's dominant paradigm (Mayle, 2006, p. 202).

For the purposes of research and comparative analysis, it is recommended to use a definition (and classification at the same time) of innovation proposed by the OECD experts, contained in the so-called *Oslo Manual*, which was adopted by the authors of this study for further consideration and empirical research. It defines innovation as an implementation of a new or significantly improved product (goods or service) or process, a new marketing method or a new organizational method in business practice, workplace organization or relations with an environment (*Oslo*

Manual, 2005, pp. 47–52). The Oslo Manual distinguishes four types of innovation, covering a wide range of changes in business operations (product, process, organizational and marketing innovations).

Many researchers and practitioners identify the concept of innovativeness with the concept of innovation, because these terms are closely associated (Cho & Pucik, 2005, p. 556). It seems, however, that the prevailing views on this term are those in which innovativeness is clearly regarded as a certain attribute of a company, its ability to implement innovation that can be measured and assessed. Faiz Hilami, Ramayah, Mustapha and Pawanchik (2010, p. 557) explain that it is an ability to create something new or an introduction of significant changes, acting in a way that takes advantage of this ability.

On the basis of the literature analysis, it can be stated that there are numerous attempts to operationalize this concept, which are used in empirical research, especially on new products. Operationalization of product innovativeness is done by e.g. Garcia and Calantone (2002, pp. 110–132), starting from the analysis of an innovation typology. According to them, product innovativeness brings novelty for a customer, industry/sector and the company itself, whereas the novelty for an industry is defined as a market or technological novelty. Novelty for a company is associated with creating market or technological know-how that would distinguish the company from the competition. This operationalization of innovativeness leads to interesting and original proposals related to its market measures at the macro and micro scale in the field of marketing and technology.

A slightly different approach to operationalization of the innovativeness concept and isolation of its dimensions that take into account their impact on the selection of a project to implement and its final results, are suggested by Danneels and Kleinschmidt (2000, pp. 1–39). They claim that the natural dimensions of innovativeness, which should be analysed are: novelty from the perspective of the customer and the company. Novelty from the customer's perspective includes selected attributes of innovation, the risk of non-acceptance and a change of customer behaviour. Novelty from the organization's perspective includes: relations with existing products, and perceived novelty of the organizational solution in relation to market solutions (familiarity), adjusting to technological capabilities related to organizational constraints (fit), marketing dimension understood as a degree to which a product can be based on the company's competence of customer service (marketing competence), and a technological dimension in which an organization can support the implementation/ development of a product, using the company's expertise in terms of technology. The authors state that innovativeness can be perceived through the prism of market and technology novelty, and market and technology adjustment. Innovativeness understood in such a way, is supposed to have an impact

on decisions to implement a solution/product launch, and on the effective-ness of a solution/product (Danneels & Kleinschmidt, 2000, pp. 1–39).

In Polish literature we find similar diversity of approaches to innova-tiveness: some authors use the terms of innovation and innovativeness interchangeably, while others treat innovativeness as a tendency and abil-ity of the company to implement innovation (Nowacki, 2010, pp. 30). De-spite this ambiguity in defining the two key concepts, they are in fact in-separable. Innovation is a result of the innovativeness of a company – without this tendency and ability of a company to implement innovation, new solutions will not be implemented. In further discussion we will con-sider innovation (and innovativeness) and its impact in the field of broadly defined performance of the company.

It is worth noting that innovativeness can also be seen as a personal trait, important for the study of customer acceptance of new products being prepared for the market (Girardi, Soutar & Ward, 2005, p. 471).

Effects of Innovation and Methods of their Measurement

An importance of the role that is nowadays attributed to the issue of inno-vation, also in the context of building a competitive advantage, is con-firmed by numerous scientific studies, which generally indicate a positive relation between innovativeness and a broadly understood company's performance. The literature on this topic is relatively rich, and the studies have lasted for a long time now. Going back to the past, there are studies which confirm a positive impact of innovativeness on the results achieved by a company (Hall & Mairesse, 1995, p. 263–293; Adams & Jaffe, 1996, pp. 700–721). At the same time, other results were published, giving rise to different conclusions: despite a substantial increase in knowledge, ac-knowledging that a company's results do not improve (Link, 1981; Sassen-ou, 1988).

Similar discrepancies are indicated by the authors of the latest re-search on this topic – Lin and Chen point out that the research on the relations between innovations and the results achieved by organizations brought different results: some confirmed positive relations, some negative, and some even showed no such relations (Faiz Hilami, Ramayah, Mus-tapha & Pawanchik, 2010, p. 558).

Literature studies conducted by the authors of this article, from the last decade in particular, is fully supported by the results of that variety as well as the adopted theoretical models and research methodology.

Literature on the subject presents different directions of research on the effects of innovation, innovation's (or innovativeness) connection with the results achieved by companies. The research assumes that innovative-ness has a positive impact on company performance, but the research results do not always confirm this. Cho and Pucik (2005) indicate three

main research approaches, in which these problems are tackled. The first one concerns the relations between organizational innovation and the results achieved by a company (due to their positive relation between these variables). The second one focuses on the study of the relations between the products innovativeness (new product development area) and the obtained results (measured by e.g. return on investment), and usually these studies also confirm this positive relation. Finally, the third one concerns the impact of innovation on reducing the costs and increase of the company's value (Value Innovations) (Cho & Pucik, 2005, p. 557). Not all approaches are represented by the same number of studies – it seems that studies in the first two cases dominates (especially those concerning the products innovativeness), using different operationalization of both innovativeness (innovation) and business performance, as evidenced by the following results of literature studies.

For example, in some studies of Danneels and Kleinschmidt and others, on the above issues, successful implementations of new products were compared with those that failed. Part of the study concerned innovative projects that were completed and the product was not introduced to the market, these studies included e.g. impact of novelty dimension on decisions about execution or completion of the project (interruption) (Danneels & Kleinschmidt, 2000, pp. 8–9).

It is worth paying attention to a further study of Danneels and Kleinschmidt (2000) on relations between a multi-dimensional concept of product's innovativeness and its results, where the hypotheses of a higher technological and marketing fit of new products resulting in higher results, were confirmed, and the hypotheses of a higher technological and marketing closeness of new products resulting in higher results, were rejected. The described various dimensions of product innovativeness have a different impact on the results (Danneels & Kleinschmidt, 2000, p. 20). Performance measurement in this study was measured using 5 descriptive statements concerning profitability and sales, which respondents evaluated on the Likert scale of 1–10.

Cho and Pucik (2005), searched for confirmation of the hypotheses about a direct relation between innovativeness, quality, and performance of the company (an increase of performance, profitability and market value), these hypotheses were confirmed. At the same time, these authors suggest that innovativeness itself is not enough to improve the company's performance, just as quality itself is not enough to create an increase. Their research shows that the impact of the quality on growth partially takes place due to innovativeness, as well as the impact of innovativeness on profitability is partially influenced by the quality (Cho & Pucik, 2005, p. 573).

Terziovski (2010) presents research on innovation and its impact on the performance of small manufacturing companies. The subject of this

study were relations between such constructs as: innovative strategy, innovative culture, formal structure, relations with customers and suppliers and technological capacity (independent variables), and SMEs performance measured by using nine metrics such as e.g.: (a) the number of product configurations, (b) successful product launch, (c) quickness of getting onto the market, (d) significant product innovations, (e) improved work methods and processes, and (f) higher quality. The research results are interesting, because they show, for example, a not very important, and at the same time negative, correlation of innovative culture and technological capabilities with the company's performance. Innovation strategy, for instance, and formal structure have a positive and significant impact on the companies' performance in this sector. This allows us to include them to key factors of innovation that lead to high performance of SMEs (Terziovski, 2010, p. 897).

Other studies that did not provide conclusive results on the relation between innovativeness and the company's performance are the studies of Faiz Hilami, Ramayah, Mustapha and Pawanchik (2010), conducted in SMEs in Malaysia. In these studies, the authors established a positive relation between product innovativeness and processes innovativeness, and business performance. Product innovation was defined by them as a level of novelty and an importance of a new product introduced to the market, processes innovativeness involves introducing new methods of production, new methods (approaches) of management, new technologies that enhance both production and management (Faiz Hilami et al., 2010, p. 558). To assess both dimensions of innovativeness, descriptive statements were used, which respondents evaluated on the 7-point Likert scale. The 5-point scale was used to assess business performance measurement (seven measurements were used such as: return on investment). The study confirmed only a significant impact of the processes innovativeness on the company's performance (the hypothesis of a positive impact of product innovativeness on the company's performance was not confirmed) – in Malaysian small and medium enterprises (Faiz Hilami et al., 2010, p. 562).

The approach related to measuring the effects brought by product innovations, also covered the research focussing on product innovation performance, understood as a two-dimensional construct, i.e., including the dimension of efficacy and efficiency. The former reflects the assessment of the success level, and the latter – the effort (cost and time) taken to achieve this level of success. In these studies, the respondents assessed the metrics of efficacy (e.g.: opening a new national or foreign market, developing an environment-friendly product) and efficiency of product innovations (e.g.: the average cost of an innovative project) on the 5-point Likert scale – compared to competition (Alegre, Lapiedra & Chiva, 2006, p. 345). This research shows that the two adopted dimensions of product innova-

tions are strongly correlated, so – as emphasized by the authors of this study – in order to provide improvement of product innovation performance, both of these dimensions need to be taken care of at the same time (Alegre, Lapiedra & Chiva, 2006, p. 340).

Studies by Darroch have also reached some interesting conclusions, which concerned the impact of effective knowledge management on better performance in the form of innovation, and financial results. One of the hypotheses concerned a positive impact of innovation on the organization performance. We omit here the topic of knowledge management research, focusing exclusively on explaining what measures of innovation and performance were used in these studies. For the identification of innovation, the author used a typology of innovation which enables the extraction of six descriptive categories of innovation (1 / "we introduced products that are new in their class in the world", 2 / "we often introduce a new range of products or services that previously were not offered by the company" etc.). The results were measured by comparative descriptive measures (e.g.: "compared to the average in the sector, our company is more profitable") and internal measures that reflect the company performance (e.g.: "we are more profitable than five years ago"). In these studies, the hypothesis regarding a positive impact of innovation on company performance found no support (Darroch, 2005, pp. 110–111).

The subject of the research is also an impact of innovations related to the sphere of management (management innovations) on the organizational efficiency or performance (Walker, Damanpour & Devece, 2010) – in public sector organizations. These studies did not confirm the relation between the management innovations and the organizational performance, but they confirmed the importance of the relation between these types of innovations and management performance – in English units of local government.

METHOD

Research Hypotheses

On the basis of the literature analysis, the following theoretical model can be adopted – Figure 1, which shows the adopted operationalization of innovativeness (based on one measure of innovativeness – the number of innovations with a division into 4 different types of results of the level of innovativeness assessment).

Such a model has become a prerequisite to form the 2 hypotheses presented below.

H1: There is a relationship between the number of innovations and the measures of organizational performance, in particular:

H1a: The greater the number of innovations, the higher the level of economic performance;

H1b: The greater the number of innovations, the higher the level of financial liquidity;

H1c: The greater the number of innovations, the higher the estimated revenue dynamics.

H2: There is a correlation between the number of innovations and the subjective measures of organizational efficiency, in particular:

H2a: The higher the number of innovations, the greater the tendency of respondents to combine the number of innovations with economic performance;

H2b: The higher the number of innovations, the greater the tendency of respondents to assess the company as innovative;

H2c: The higher the number of innovations, the greater the propensity of respondents to a high assessment of the company's implementation capacity compared to the competition.
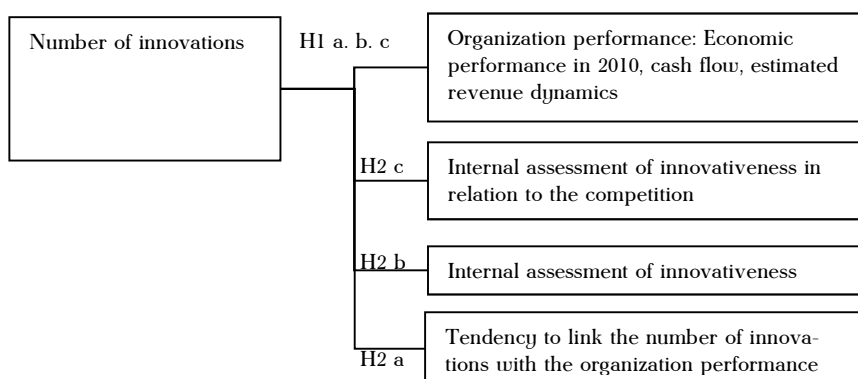

Figure 1. Model of Relation Between the Number of Innovations and the Company's Results

Source: own study.

The Applied Research Method – a Research Tool and Characteristics of the Research Sample

In order to verify the relationship between the number of innovations and performance at an organizational level, a survey was used – a direct interview conducted with use of a questionnaire. In the second half of 2011, extensive research was carried out on innovation as its broadly understood, on a sample of 250 small and medium-sized enterprises, where only part of it involved issues related to the impact of innovation on business performance. We used stratified sampling from the Teleadreson database,

organizations located in the Silesian voivodeship were included. Due to numerous missing values and denials of participating in the project, research results cannot be generalized. The original research tool consisted of 35 more or less complex questions (both open and closed), and this article presents only a fraction of the obtained results, relating to the above-ranking hypotheses. The respondents in the study were mostly directors, owners or managers at lower-levels of companies. Completion of a questionnaire by another person was allowed, provided, however, the person had the necessary information about the company in terms of innovativeness. As a result of the study, the rich empirical material was gathered and analysed with the use of some statistical tools. The structure of the research sample is presented in Table 1.

Table 1. Structure of the Sample Based on Selected Criteria

Number of employers	N	Type of activity	N	Financial performance	N	Financial liquidity	N	Revenue dynamics 2010/2009	N
10-49	192	Trade	77	Positive	209	Full	206	Increase	102
50-100	21	Services	74	On the verge of profitability	29	Partial	35	Stability	127
101-249	15	Combined	60	Negative (loss)	12	Problems with liquidity	9	Decrease	21
250+	22	Production	39						

N – number of companies in a sample

Source: own study.

In order to achieve the research objectives, questions on the following issues (variables) were subjected to analysis:

1. The number of innovations in the company (product and process – a total of 17 boxes related to the number of innovations in different areas – in accordance with the Oslo Manual, the study covered a period of 3 years) (Cronbach alpha = 0.89);
2. Financial performance for the year 2010 (measured on a subjective three-point scale, 1 – positive, 2 – on the verge of profitability, 3 – negative);
3. Financial liquidity in 2010 - measured on a three-point scale: 1 – full, 2 – partial, 3 – liquidity problems;
4. Estimated revenue dynamics – measured on a three-point scale: 1 – increase, 2 – stability, 3 – decrease; (estimated revenue dynam-

ics in %, compared to 2009, Cronbach alpha for the last three questions = 0.61);

5. The degree of the innovativeness contribution to the company's profits – measured on a 5-point scale, subjective assessment, (1 – never, 2 – to a small extent, 3 – moderate, 4 – to a great extent, 5 – to a very large extent);

6. Subjective assessment of the company innovativeness level – measured on a 5-point scale, (1 – the company is not at all innovative, 2 – low level, 3 – moderate level, 4 – high level, 5 – very high level);

7. Subjective assessment of a company's ability to innovate compared to other competitors in the market – measured on a 5-point scale, (1 – we are far more innovative than our competitors, 2 – we are a little more innovative than our competitors, 3 – are the same innovative as our competitors, 4 – we are rather less innovative than our competitors, 5 – we are far less innovative than our competitors (Cronbach alpha for the last three questions = 0.82).

Due to strong and significant correlations between the responses on the number of innovations, it was decided to conduct a factor analysis. As a result of the analysis, it was found that the responses are grouped into three dimensions of innovativeness. They were defined as: (a) dimension 1 – a dimension of product innovations and related to the production, (b) dimension 2 – a dimension of organizational and marketing innovations, and (c) dimension 3 – a dimension of innovations associated with the formation of price and product packaging. The correlation coefficient matrix was significantly lower than 0.001, and the Bartlett and KMO test results entitled the use of the results of the factor analysis in the following study procedure. Detailed results are presented in Table 2.

For the purpose of further analysis, it was decided to combine the components indicated in Table 2 types of innovations into the three previously indicated dimensions. The empirical values – observed in the sample – were replaced with one value for each observation ("metavariable"). Metavariable was calculated by averaging the responses to the observed empirical values included in a given dimension.

Table 2. Results of Factor Analysis for the Question on the Number of Innovations

Dimension/component	Organizational and marketing innovations	Product and related to production innovations	Innovations related to the formation of prices and packages
Organizational and marketing innovations	,999		
Marketing innovations	,999		
Organizational innovations	,999		
New ways of sales or distribution channels	,996		
New methods in terms of action	,995		
Methods of supporting processes, IT systems	,979		
New media or promotion techniques	,939		
Significant changes in work organization	,695		,684
Product and process innovations		,994	
New methods of products manufacture		,970	
Product innovations		,952	
Product innovations new to the market		,952	
Process innovations	,458	,849	
Relations with firms and institutions		,776	,591
Methods in the field of logistics and distribution		,625	,595
New methods of pricing of products and services			,951
Significant changes to a form, shape and package			,906

Method of extracting factors – Main components. Rotation method – Varimax with Kaiser normalization.

a. Rotation reached convergence in 5 iterations.

Source: own study.

RESULTS

Innovation and Business Performance

To estimate relationships that exist between the number of innovations and business performance, in the first place, it was decided to use correlation analysis. Due to the nature of the data, in this case, an appropriate solution was to conduct the Spearman's rank correlation analysis, assuming a one-tailed significance at the $p<0.01$ level. The results of the analysis are presented in Table 3.

Table 3. Results of the Spearman Rank Correlation

Correlations				
Spearman's Rho		**Dimension1**	**Dimension2**	**Dimension3**
Innovations contribute to the growth of a company's profit	Coefficient	,208**	,329**	,210**
	Significance	,002	,000	,006
	N	192	211	143
Internal assessment of the company's innovativeness level	Coefficient	,202**	,255**	,204**
	Significance	,002	,000	,007
	N	197	216	148
External assessment of the company's capability to innovate (compared to competitors)	Coefficient	-,027	-,180**	-,049
	Significance	,359	,005	,288
	N	185	201	135
Estimated revenue dynamics	Coefficient	-,071	-,166**	-,137*
	Significance	,155	,006	,044
	N	205	226	155

** Correlation is significant at the 0.01 level,* Correlation is significant at the 0.05 level (1-tailed).

Source: own study.

The results of the correlation analysis presented in Table 3 indicate the moderate positive relationships between the dimensions identified in the factor analysis, and a variable determining the innovativeness level contribution to the company's performance (correlations at the 0.2-0.4 level in the study on the organizational phenomena indicate a relatively strong relation). Also various dimensions of innovativeness correlate positively with a variable – assessment of the level of innovativeness in relation to the competition.

It is worth noting that neither the question of whether innovations contribute to the growth of the company's profit or an assessment of the company innovativeness level (compared to the competition), or even the as-

sessment of a company's ability to innovate, did not correlate significantly with the company performance (economic, financial liquidity and estimated revenue dynamics). The results of the study also suggest that the identified dimensions of innovativeness do not correlate significantly or strongly with economic performance, financial liquidity, and very little with the estimated revenue dynamics. This clearly shows a lack of relation between the studied variables (in the case of relation between the number of innovations – dimension 1 and 3 and the estimated revenue dynamics, this correlation is weak).

Due to high levels of correlation (as for studies conducted in organizations) it was decided to conduct regression analyses and estimation of the curve between the correlated variables. However, low coefficients of r-squared (largely below 0.1) and low significance of the created models (significance coefficients > 0.05), make their quality poor. In this case, an explanation may be non-linearity of the studied relationships, however, other reasons may be found.

On the basis of the correlation analysis carried out, there is no reason to reject hypotheses H1c and H2a, H2b, H2c. The data clearly shows evidence for relationships between the innovativeness dimensions stated in the process of factor analysis, and the assessment of the degree of contribution of innovation to a profit, an internal assessment of innovativeness or an assessment of the company's capability to innovate, in comparison with the competitors. The analysis also shows statistically significant relationships between the dimension of product innovativeness and the estimated revenue dynamics. Although the level of innovativeness is not in relation with the level of economic performance (profit and finance liquidity), the relation with the revenue dynamics (negative index level, due to the encoding, means that the greater the number of product innovations, the higher level of revenue dynamics), enables predicting that if the study was of a longitudinal nature and if it was conducted e.g. annually, then such a relation could be possible to observe.

DISCUSSION AND CONCLUSIONS

The studies conducted are part of the current research on innovativeness, especially of small enterprises, in particular its impact on performance of the surveyed companies in Poland. The studies included a broad understanding of innovativeness, thus also organizational and marketing innovation. The obtained results, in contrast to others carried out in different countries, do not confirm a strong positive relation between innovativeness and businesses performance measured with the use of economic results (profit), financial liquidity or estimated revenue dynamics. There was a weak relationship between the level of innovativeness and the esti-

mated revenue dynamics, but it was not confirmed in the regression analysis (curve estimation). The strongest relations exist between the number of innovations (particularly the product and its relation to production innovations) and the respondents' statements that innovations contribute to the company growth, and the subjective internal assessment of the level of the company's innovativeness. This shows that managers (organization's key decision-makers) are likely to overassess the importance of innovation and its benefits, when the relation between a large number of innovations and organization performance is, in fact, weak or even non-existent. This phenomenon can be described as overestimating the importance of the number and nature of innovations compared to the organizational performance.

On the other hand, it should be noted that respondents realistically assess the level of innovativeness in a company. If the observed number of innovations is relatively high, the respondents (probably without the knowledge of the level of innovativeness of the competition), tend to consider their own company innovative.

A relatively weak correlation was identified between the number of innovations related to production (or service provision), and an assessment of innovativeness in relation to competitors. This result indicates that the higher the number of product innovations, the higher assessment of innovativeness to market innovation.

The results shed a different light on previously conducted research. Although there is no reason to reject 4 of the 6 hypotheses, the level at which they have been confirmed leaves more questions than answers. The most questions, however, are raised about a lack of confirmation of the correlation between the number of innovations and the economic results (profit) and liquidity.

The above considerations raise at least two questions: firstly, what types of innovations contribute to efficiency improvement the most? Secondly, what, apart from the number of innovations, makes managers tend to assess the company as more or less innovative than their competitors?

The use of proprietary tools (which statistically we were fully entitled to use) which were confirmed by the Cronbach alpha reliability analysis, resulted in an objective disadvantage – because of the questionnaire used, it is difficult to directly relate the research results to the results of other studies carried out e.g. abroad.

Furthermore, possibilities of comparison are significantly reduced in this case. The factor analysis carried out indicated that for future studies it will be necessary to rebuild a research tool and further improve it, including – enrichment of elements present in the tools presented by alternative studies conducted in other countries. In relation to the conducted research, it appears that increasing the sample, which is typically the basic weak-

ness of the research, is not critical in this case and it would not lead to a significant improvement in the quality of the results. However, this cannot be stated with certainty.

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Abstrakt

Tło badań. Autorzy podjęli problem identyfikacji, ewaluacji i pomiaru efektów innowacji w małych i średnich przedsiębiorstwach. W artykule przywołano niektóre wyniki badań prowadzonych w innych krajach, poświęcone w szczególności wpływowi innowacji na szeroko rozumianą efektywność biznesową.

Cele badań. Badanie pozwoliło zweryfikować relacje między liczbą innowacji a wynikami przedsiębiorstw na poziomie organizacyjnym.

Metodyka. W celu weryfikacji hipotez przeprowadzono wywiad bezpośredni, oparty na kwestionariuszu. W drugiej połowie 2011 r. przeprowadzono obszerne badanie dotyczące szeroko rozumianych innowacji na próbie 250 małych i średnich przedsiębiorstw. Tylko część pytań dotyczyła wpływu innowacji na efektywność. Cały kwestionariusz obejmował 35 pytań (otwartych i zamkniętych), a w niniejszej pracy zaprezentowano tylko część wyników. Respondentami byli głównie dyrektorzy, właściciele lub menedżerowie niższych szczebli.

Kluczowe wnioski. Osoby podejmujące główne decyzje w organizacjach często przeceniają znaczenie innowacji i ich rezultatów, w szczególności kiedy rzeczywista relacja między dużą liczbą innowacji a efektywnością organizacji jest słaba lub nie występuje.

Słowa kluczowe: innowacyjność, pomiar innowacyjności, małe i średnie przedsiębiorstwa