# Determinants of innovative development and their importance for small and medium-sized enterprises in Poland

Robert Stanisławski

Department of European Integration and International Marketing,
Faculty of Management and Production Engineering,
Lodz University of Technology,
Wólczańska Street 215; 90-924 Lodz, Poland
Email: robert.stanislawski@p.lodz.pl

**Abstract:** Poland is a country poorly developed in terms of its innovativeness. It belongs to the penultimate group of countries according to the innovation level (moderate innovators). Despite its overall innovative development, a sharp decline (retardation) of innovative activity has been noted in the case of small and medium-sized enterprises (SMEs) in the last year. Hence, the need for analysing determinants (factors) of their innovative development. In the framework of this article, three groups of factors were taken into account: SMEs' strategy, resources and willingness to cooperate with the environment (open innovation). The analysis of their significance was made on the basis of the research carried out in 2016 on a group of 819 entities. It covered only those SMEs which had conducted innovative activity in the past three years, had headquarters in one of six voivodships in Poland and primarily conducted manufacturing activities. As part of the study, researchers answered the questions regarding the strength and significance of as well as the reasons for the impact of these determinants on SMEs' innovative development. The main aim of the article is to provide a multi-threaded overview of the issues of innovative development of SMEs and to conduct an analysis of determinants in this field.

**Keywords:** innovative development; innovativeness; innovations; determinants of innovative development; small and medium-sized enterprises; SMEs; open innovation; Poland.

**Reference** to this paper should be made as follows: Stanisławski, R. (2021) 'Determinants of innovative development and their importance for small and medium-sized enterprises in Poland', *Int. J. Innovation and Learning*, Vol. 29, No. 1, pp.67–88.

**Biographical notes:** Robert Stanisławski has been a Professor at the Department of European Integration and International Marketing of Faculty of Management and Production Engineering in the Technical University of Lodz since 2004. His research interests are involved in Eurologistics, European integration, the SME sector in Poland and Europe, and also the innovativeness (open innovation) of this sector in the Polish and European area. His scientific publications include about 120 articles (authorship and co-authorship) at the national and international editions and many monographs which were edited by him in Polish as well as English version.

## 1 Introduction

The recent increase of interest in innovation-related issues is entirely justified. This interest applies to equally important thematic areas including: analysis of internal and external conditions for innovative development, study of dynamic innovation capacity, study of cultural factors of organisations directly and indirectly affecting innovation implementation, or analysis of new trends, concepts and paradigms of impact on innovative development (Elmquist et al., 2009). The role of this development is particularly important for small and medium-sized enterprises (SMEs). It provides them not only with the possibility of gaining a current market advantage but also with a relative stability of functioning in the perspective of the next few years. This is extremely important from the point of view of changes in the environment, referred to as 'turbulent environment', which is extremely variable and unpredictable. Therefore, it is justified to formulate the thesis that innovative development is one of key conditions ensuring conducting business activity in a competitive market. This is extremely important especially for Polish SMEs which are less innovative entities than SMEs in other countries of the European Union (EU) (Breznitz and Ornston, 2017). There are many reasons for this situation. However, in the Polish literature, the most common reasons are: an insufficient level of own tangible and intangible resources, mental factors arising from concerns about own intangible resources, or not enough 'innovative' society (Stanisławski, 2017). These reasons (also known as barriers) will be discussed in many places in the article, constituting a kind of reference point for the analysis carried out in it.

In global terms, the EU is still lagging behind countries such as South Korea, Canada, Australia, or Japan. However, the EU's undoubted success is the improvement of its situation in relation to the US in 2018. The next positions in the ranking of innovative development behind the EU are taken by: China and Russia, of which the highest growth rate concerns the first of these countries. Considering the dynamics of changes in the level of this development, it should be noted that the most innovative Member States are (since 2011): Latvia, Malta, Greece, Great Britain, Estonia, and the Netherlands. However, a decrease was recorded in Romania and Slovenia. Taking into account the division of the EU Member States into four groups (leaders, strong innovators, moderate innovators and weak innovators) made using the summary innovation index (SII), four countries emerged as leaders: Denmark, Finland, the Netherlands, and Sweden. However, Poland was included in the group of moderate innovators – the third of the groups mentioned above (Hollanders et al., 2019). It should be emphasised that this situation has not changed since 2015, when Poland changed the group from the last one to the penultimate one (Hollanders and Es-Sadki, 2015). Nevertheless, the data show that SII (innovative activity) in Poland slightly increased from the level of 53.3 in 2011 to 61.1 in 2018 (+13%) over the past seven years, which allows us to consider this indicator in terms of 'innovative development'. The largest increase in innovative activities undertaken took place between 2017 and 2018, as in this period the SII level increased from 57 to the above-mentioned level of 61.1 (+ 6.7%). In the years 2011–2015, the SII was definitely below the 2011 level (SII = 53), which indicates Poland's 'regression' in terms of innovativeness.

Despite the current slight increase in the overall level of SII (especially in the last year), innovative activity regarding implemented innovations among SMEs has significantly decreased (from the SII level of 29.4 in 2011 to SII of 15.0 in 2019). The

largest decrease in innovative activity is related to marketing and organisational innovations (from the SII level of 27.7 in 2011 to the level of 2.1 in 2018) (13 times). There is a much smaller difference in the case of product and process innovations, where SII decreased from 35.7 in 2011 to 25.5 in 2018 (–40%). Also to a large extent, there was a 'backward' trend observed in SMEs' own innovative activities (from the level of 24.8 in 2011 to 17.2 in 2018) (-44%). All these three elements are definitely below the average SII values in the EU, which are respectively: 35.6; 34.3 and 28.1 (Hollanders et al., 2019). To sum up, in the last seven years there has been a regression in the area of innovativeness of Polish small and medium enterprises. Therefore, there has been no actual innovative development of SMEs to speak of, which is an extremely negative phenomenon from the perspective of the whole economy as well as individual entities. It leads to a weakening of enterprises' competitive position in the European and global market. It is justifiable therefore to confirm the earlier formulated thesis that Polish SMEs are the least-developed enterprises in the EU. Thus, there is the need to analyse determinants directly or indirectly affecting the development of innovative SMEs in Poland.

This innovative development is determined by many factors, the most important of which include: the tendency to cooperate with the environment (the use of open concept), the size of resources held and the possibility of supplementing them in the environment (resources), the ability to adapt ready solutions from the environment, or the tendency to determine long-term goals and intentions (strategy), among which innovation is seen as an important element of improving the current economic situation (Stanisławski, 2017). Therefore, the importance of determinants should be considered in the context of their impact on the propensity to improve the level of innovativeness among SMEs in Poland. Among the above-mentioned factors, attention was focused on the following three: the concept of open innovation, resources and strategy. They became the basis for formulating several research questions enabling answers to many important issues. Firstly, to what extent do these three factors influence the innovative development of enterprises (what is their impact) and should they really be perceived in terms of determinants of SMEs' innovativeness in Poland? Secondly, which of these factors were the most important for the innovative development of these enterprises and how significant was this impact for each of these factors individually? Thirdly, what are the (main) reasons for the significant impact of these three determinants on their innovative development in the subjective assessment of the SMEs surveyed in Poland? However, some interpretative and research limitations should be pointed out. The role of these determinants was examined in 2016, while the data presented above relate to the current period. The reasons for the decrease in SMEs' innovativeness should not be seen in reducing the overall role of these determinants at present, but in changing (generally) the functioning priorities of these enterprises. In the era of 'economic prosperity', their functioning is mainly focused on current activities concentrated on maximising market effects, including sales and profit, and not on current (and continuous) innovative development. However, this does not mean that the significance of 'strategy' as a determining factor has diminished. Enterprises aware of the importance of innovation have 'postponed' the implementation of their innovation intentions, taking them into account in their future plans. Hence, it is assumed that the assessment of the three factors made in 2016 is universal and their further impact depends on the emergence of market conditions forcing the implementation of subsequent stages of the analysed innovative development (an increase of the number of customers focused on 'market novelties').

The research questions presented above constitute the basis for formulating the main aim of the article, which is to provide a broad and multi-threaded overview of the issues related to innovative development of SMEs and to conduct an analysis of determinants in this field. This was done in both theoretical and empirical ways. In the first of these approaches, attention was focused on the conceptualisation of the term of 'innovative development' and reference was made to the characteristics of development determinants described most often in the literature. The empirical approach was used to draw conclusions and formulate specific theses regarding the significance and impact of these determinants on the discussed innovative development. SMEs which are specific and require special attention in the field of the discussed subject, became the subject of inquiry. Their specificity relates to differences in: management, organisation, procurement, sales, production or research (Krupski, 2009). The need to focus attention on these enterprises is the effect of their weak economic position, on the one hand, and the huge role they play in the global economy, on the other hand.

## 2 Innovative development and determinants of this development - theoretical background

One of the key issues that need to be clarified in this article is the concept of innovative development of enterprises. Innovative development is not a widely used concept at present. Usually, different authors when writing about innovation and its effects use the word 'innovativeness.' These concepts are not the same, although it is not a mistake to use them interchangeably. Innovativeness can be understood as a feature that means the ability to create, implement or absorb innovative solutions. In addition, it is focused on acquiring the necessary resources and skills to participate in innovative processes (Niedzielski, 2005). Innovativeness can also be understood as a state that describes in a static manner the level of implementations made in an enterprise. Usually, their large number means a high level of innovation of the described entity (Ruvio et al., 2014). In view of the above, one important difference can be noted regarding innovative development and innovation. The concept of 'development' includes the emotional charge of making changes, and in the case of 'innovative development' these changes are the result of innovative activity (innovative interventions undertaken in this respect). Therefore, it is necessary to clarify the difference between innovation, innovativeness and innovative development.

The first of these concepts consists in endowing products with features of novelty, while the range of meaning of the second one is definitely wider. Innovativeness is a constant tendency to search for new solutions aimed (as mentioned above) at improving the current state. Therefore, innovativeness is a feature consisting in the constant pursuit of making innovative changes both inside and outside the organisation (in its immediate environment) (Stanisławski, 2017). The broadest concept is innovative development, in which additionally aside from improving the state (transition from a lower level of development to a higher level), all intermediate stages related to conducting specific innovative activities are taken into account. They can be exemplified by conducting research, intensifying the use of own resources or exploring the environment (open innovation), and the implementation of achieved results. To sum up, innovativeness perceived in the context of the state has a greater static character in contrast to innovation development which is concentrated on comparing the achieved levels of innovativeness.

According to the latest discussions in this area, the concept of innovative development is perceived in the context of organisational development and in process terms (Stanisławski, 2017). The first of them treats the organisation as a 'collection of changes' aimed at improving the current situation in many selected areas (Burke and Bradford, 2005). These changes occur both inside and outside the organisation. Internal changes mainly concern such elements as: beliefs, attitudes, value system, company structure or absorption capacity related to the adaptation of new technologies (ideas, knowledge from the environment) (Bennis, 1969). In turn, external changes are the result of the functioning of entities in an open system, in which the enterprise affects the environment and vice versa: the environment affects the enterprise. As a result of this relation, a new quality is created, which is different from the existing ones, and thus the entity achieves a better – higher level of its development (Barnett, 1953). Hence, the development of the organisation can have an internal and external dimension, which results in acquiring the needed resources (knowledge) from the environment that contribute to improving the efficiency of the enterprise.

Another issue is the answer to the question: when and how the organisation plans to make changes leading to its development. The answer to its first part is quite simple: in the case of such needs existing. These needs include the necessity of introducing changes in the scope of: management strategy, organisational climate, organisational structure, employee remuneration and motivation system, planning process, creating networks enabling the increase of innovative capacity or expanding competences, expanding knowledge and human resources (McLean, 2009; Beckhard, 1969). The above-presented division of needs takes into account two basic dimensions: human aimed at ensuring the best working conditions, and thus good workplace atmosphere and employee satisfaction, as well as organisational resulting from economic conditions taking into account the ability to cooperate in a turbulent environment or actions (interventions) undertaken to improve competitiveness in both domestic and foreign markets (e.g., through the implementation of innovations). The focus of enterprises only on the first of the above-mentioned needs is criticised in the literature due to its narrow and normative nature (Ramstad, 2008).

Answering the second part of the posed research question, it should be stated that changes are introduced through actions also referred to as interventions. If they are undertaken by means of innovations (through innovations) or/and they result in market innovations, these interventions are called innovative activities (interventions). In the literature, their classification is quite diverse. Due to the assumed goal, there are the following interventions: repair (corrective), developmental and compensatory, which is correlated with the degree of their intensity. Corrective interventions are usually radical in contrast to compensatory or developmental ones, which are usually characterised by a mild (evolutionary) degree of change (Ackerman, 1997). An inherent feature of these activities (interventions) is the impact on the organisation in its individual areas such as: human, technical and technological, strategic, structural, organisational (regarding management methods and styles) (McNamara, 2009). These areas are often presented as subsystems of a particular enterprise creating a unified and integrated organisational system. If the changes made as a result of actions (interventions) lead to the development of the organisation and have features of novelty improving the effectiveness of its functioning, they are referred to as innovative development (Stanisławski, 2017). Therefore, innovative development is the organisational development carried out by means of interventions of an innovative nature (by innovations), in which innovation is

both the final purpose of this development and at the same time a tool to achieve the assumed goal. It is used to improve the innovative level of enterprise. The first approach to innovative development is discussed here.

As indicated above, another way to conceptualise the concept of 'innovative development' is a process approach. It covers a number of different types of activities, methods or operations to create 'new values' which also constitute added value (Boulton et al., 2001; Platonoff, 2009). It is undoubtedly the creation of "new or improved products or services and their delivery to the market for success" (Gumusluoglu and Ilsev, 2009). Thus, in this approach, innovative development is an innovative process whose results include the creation, development as well as implementation and dissemination of 'new products (or services) or organisational changes'. Its effect is the improvement of the current quality status of the company, which means a more dynamically developing organisation open to the environment, able to compete in domestic and foreign markets and willing to cooperate within the created networks of partner connections. The process approach includes a number of elements forming a comprehensive mechanism for managing innovative development (Stanisławski, 2017). It consists of partial elements mechanisms of the following nature: economic (regarding the creation of plans for the functioning and development of innovative organisations), organisational (related to the formulation of the enterprise structure), motivational (determining the mechanism encouraging employees to search for new solutions), financial (presenting financing ways of new solutions) and strategic (defining ways to achieve the goal of innovative development). Therefore, it should be emphasised that the process approach (as well as the approach to organisational development) consists of a number of sub-processes constituting a uniform and coherent whole. Based on the above-described considerations, it can be stated that the process approach to innovative development describes this phenomenon as a process (having its beginning and end) consisting in the implementation of innovative solutions, as a result of which the level of organisation's innovativeness changes from lower to higher (developmental character). Unlike the previous approach (organisational development), this approach focuses attention on individual stages of the process, i.e., the emergence, maturation and dissemination of innovation.

Another issue to be interpreted in this article is the discussion on determinants of innovative development. According to the first approach presented above (organisational development), determinants of innovative development (ID) are factors relating to various subsystems. Between them there are internal relations and connections within the organisation as a whole, creating a coherent system. This system is as strong as its weakest element (Wojnicka-Sycz et al., 2018). Hence, determinants may result from the needs of individual subsystems and relate to organisational culture, including management methods (organisational factor), interpersonal communication systems (human factor), tangible and intangible resources (knowledge management factor – technological development). In the case of considering the organisation as a whole, such determinates may include the need for: market expansion and increasing sales, commercialisation of innovative achievements or intensification of internal innovative activity (Zalewski and Skawińska, 2014).

However, the most commonly accepted classification regarding determinants of innovative development is the division into internal and external ones. Among the former determinants, the following are indicated: company characteristics (size, type of business, age – market experience of the company, area of the market in which the company

operates) (Avermaete et al., 2010), size of owned resources (Wan et al., 2005), including material ones (financial and workforce) (Laforet, 2011) and intangible ones (knowledge), or business management methods, including the role of models focused on cooperation with the environment (open innovation), i.e., the use of not only internal sources of knowledge but also external ones (Damanpour et al., 2009). In addition to them, strategy is also indicated as a determinant that allows for building proper innovation potential in the long term (Wojnicka-Sycz et al., 2018). Among the latter determinants, the following factors can be identified: the location of the enterprise in regions with high R&D potential (Andersson and Ejermo, 2005), the volume of public R&D support (Zemplinerová and Hromádková, 2012), consumer environment and preferences (Bayarçelika et al., 2014) and many others. The above-presented factors do not exhaust the proposals for specifying determinants of innovative development. In practice, their division also includes classification from the point of view of large as well as SMEs. These factors are fundamentally different in these two groups of companies. In this article, the focus is only on those determinants that directly affect SMEs.

## 3 Determinants of SMEs' innovative development in Poland – results and discussion

### *3.1 Methodology and characteristics of the research sample*

The analysis of determinants of innovative development is based on the results of research conducted in 2016 on a sample of 819 SMEs in Poland. According to the definition adopted in the EU Member States (including Poland), small and medium-sized entities are those that employ no more than 249 people and whose annual net turnover does not exceed 50 million EUR. In the group of these enterprises, there have been distinguished three basic subgroups: micro (up to nine people), small (up to 49 people) and medium-sized enterprises (up to 249 people). In addition to the quantitative criterion, this definition includes a qualitative criterion (the size of shares in other economic entities). This definition came into force on 1 January 2005 (Commission Recommendation, 2003).

The research was carried out using a two-stage sample selection. The first stage was purposeful and consisted in selecting those enterprises that were involved in innovative activities. The necessity of purposeful selection resulted from a lack of sampling frame (a lack of the database of innovative enterprises). The research included four basic assumptions for purposeful selection of the research sample. Firstly (as mentioned above), enterprises needed to conduct innovative activities (i.e., introduce at least one innovative solution within the last three years). Secondly, they were classified as SMEs. Thirdly, they conducted activities in one of six designated voivodships with different levels of innovation. Fourthly, it was assumed that at least 60% of the entities surveyed should conduct manufacturing activities (this was to focus research on 'hard' effects in the form of a finished product or technology needed to produce it). The second stage, during which 819 enterprises constituting the general population were drawn from the group of 2,189 entities, had a random character. The randomness of the sample ensured its representativeness, which allowed us to generalise the conclusions drawn in relation to the general population of innovative SMEs in Poland. It seems obvious in this case that these generalisations cannot be applied to all small and medium-sized entities in Poland.

Representativeness occurs when: the sample is sufficiently large, selected at random and similar to the general population which (as indicated above) comprises innovative SMEs (Starzyńska and Michalski, 1996).

The research was carried out using computer-assisted telephone interviewing (CATI) and computer-assisted web interview (CAWI) techniques. The first technique was the main way of conducting the research (over 70% of entities), while the other was the support and supplementation of the first technique. Combining these techniques was intentional. It was supposed to increase efficiency and shorten the time of conducting the research, which was also achieved. The research lasted about one month and was completed in the second half of 2016.

The characteristics of the research sample include several elements. The first of these is the sample structure. The sample includes three groups of entities: micro (34.3% of the general population studied), small (40.2% of the general population) and medium (25.5% of the general population). The second element characterising the examined sample is the age of companies. Mature enterprises, operating on the market for over 12 years (80% of the population) constituted the vast majority. The least numerous were entities with very short market experience (less than three years) which in total amounted to only 2.8% of the surveyed population. The next (third) element is the type of business. Most of the studied enterprises were active in production (67.1% of the general population). Service and trade activities constituted a definite minority (17.8% and 15% of the general population respectively).

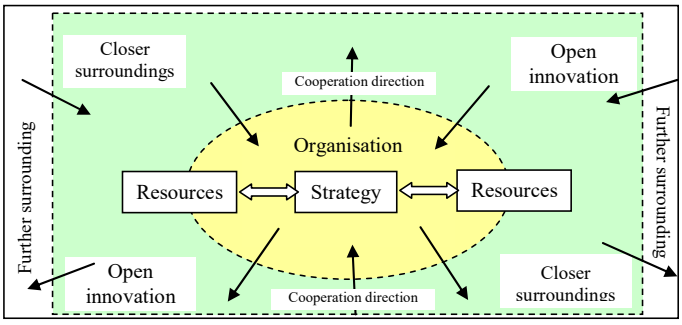
### *3.2 Determinants and SMEs' innovative development*

While discussing the impact of selected determinants on the innovative development of SMEs in Poland, attention was focused on three basic factors: resources (both tangible and intangible), strategy (understood as the direction of using available resources both inside and outside the organisation) and cooperation with the environment (open innovation). The choice of these three factors was not accidental. It resulted from the need to combine into a single entity both internal and external determinants. The existence of mutual dependencies between them is presented in the Figure 1.

A typical example of the internal determinant is the 'strategy', which includes plans, assumptions and goals focused on development in which innovation plays a key role (Stanisławski, 2017). In turn, resources are an example of both internal and external factors affecting development. On the one hand, having resources allows the enterprise to exploit its own knowledge, on the other hand, they mean exploration of the environment in search for knowledge and obtaining it for the enterprise's own needs. Exploration of the environment requires from entities establishing mutual relations with each other, which in principle can be treated as a manifestation of cooperation. It is the basic and essential element of the paradigm referred to in the literature as 'open innovation'. It should be emphasised that between these three factors there are no clear boundaries which can be drawn, because they are interrelated and interpenetrate. The analysis of these three factors will take place in many stages and will require several research questions. The first is the following: to what extent do these three factors affect the innovative development of SMEs in Poland (what is their impact) and should they really be seen in terms of determinants? In order to answer this question, four variables were specified: the measure of innovative development (I) (dependent variable), the strategy measure – strategy (P) (explanatory variable), the relationship measure (open innovation)

(R) (explanatory variable), resource measure (explanatory variable) (Z). To build these measures, a number of detailed research questions were used – about the degree of novelty of the changes introduced, the share of turnover generated by the introduced novelties, the importance of relationships with external entities, the degree and importance of individual resources for innovative development, and many others. These questions related directly to the examined factor and were asked separately for each factor, taking into account its specificity. Considering these measures (P, Z, R), a correlation between them and innovative development (I) was determined. The obtained results are presented in Table 1.

**Figure 1** Elements shaping the innovative development of SMEs (see online version for colours)




*Source:* Stanisławski (2017)

**Table 1** Correlation between I, R, P, Z measures (see online version for colours)

| *Variables* | *(I)* | *(R)* | *(P)* | *(Z)* |
|---|---|---|---|---|
| (I) | 1 | | | |
| (R) | **0.152007** | 1 | | |
| (P) | **0.326012** | 0.12578 | 1 | |
| (Z) | **0.306915** | 0.048197 | 0.065021 | 1 |

*Source:* Own elaboration based on Stanisławski R. (2017), Open innovation a rozwój innowacyjny mikro, małych i średnich przedsiębiorstw, Politechnika Łódzka, Monografie, Łódź..

Table 1 allows for drawing several conclusions. *Firstly*, the level of correlation varies greatly. The greatest correlation exists between strategy (planning) and innovative development (0.32 – moderately strong relationship) and the weakest between relations and innovative development (0.152 – weak relationship). However, the existence of the influence of explanatory variables on the explanatory variable (innovative development) shows that *they are determinants of this development*. However, their impact strength as mentioned above is varied. *Secondly*, taking into account the positive value of correlation coefficients, it can be stated that they have a positive impact on innovative development. *Thirdly*, the low values of these coefficients relative to the explanatory variables prove that the correlation between them is not statistically significant. To sum up, the answer to the research question posed is as follows: *the level of influence of individual factors varies (the highest level in relation to 'strategy', medium in the case of 'resources' and the lowest one in the case of 'open innovation'). However, all three factors are*

*determinants influencing the innovative development of these enterprises*. This is confirmed by the estimation results which are presented in Table 2.

**Table 2** Received estimation results (see online version for colours)

| *Estimation results* | *t-statistics* | *Significance level (p)* |
|---|---|---|
| Intersection | 2.7727 | 0.005795 |
| (R) | 4.2361 | 0.0000277 |
| (P) | 7.7636 | 5.86E-14 |
| (Z) | 6.5410 | 1.7E-10 |

*Source:* own Elaboration based on Stanisławsk (2017)

The analysis of significance tests [student's t-test and significance levels (p)] indicates that all three explanatory variables (factors) significantly affect innovative development, which once again proves that they are factors determining the innovative development of SMEs in Poland.

### *3.3 Evaluation of the impact of determinants on the innovative development of SMEs*

The assessment of the significance of these three determinants was made by the surveyed entities. The research question asked was: which of these factors were the most important for the innovative development of these enterprises and how large was this impact for each of these factors individually? In order to make this subjective assessment, structure indexes developed on the basis of the obtained test results were used Table 3.

**Table 3** Structure indicators for the subjective assessment of the impact of determinants on the innovative development of enterprises

| *Source* | *e* | | *Small* | | *Medium* | | *Together* | |
|---|---|---|---|---|---|---|---|---|
| | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* |
| Relations – open innovation | 91 | 32.4 | 126 | 38.3 | 84 | 40.2 | 301 | 36.8 |
| Planning –strategy | 114 | 40.6 | 167 | 50.8 | 116 | 55.5 | 397 | 48.5 |
| Resources | 93 | 33.1 | 118 | 35.9 | 75 | 35.9 | 286 | 34.9 |
| Total | 281 | | 329 | | 209 | | 819 | |

Note: Ne – number of entities; % – percentage.

*Source:* Own elaboration

Table 3 shows that the strategy has the most indications among the three determinants (over 48% of respondents indicated the impact of this factor on the innovative development of their enterprise). The second place in this ranking is occupied by 'open innovation' (over 36% of surveyed enterprises) and the third place is given to 'resources' (almost 35% of surveyed entities). Here, one can confirm the existence of certain regularity: along with the increase in the size of the enterprise, the share of entities declaring a significant impact of individual factors on the innovative development of their enterprises also increases. Therefore, larger enterprises appreciate more the role of these three factors in the considered development. This may be due to their greater awareness of importance of the said factors in this process. This is logical, as larger entities are more

determined by these three factors individually. The strategy is used in the context of long-term planning in which these entities take into account the need for long-term innovative development, i.e., a kind of development in which innovation plays the role of a tool and is also the ultimate goal for the enterprise. Larger entities (as noted in many studies) are also more open to the environment, i.e., they use assumptions about implementing the 'open innovation' paradigm. In addition, they have greater own resources and have easier access to external resources. Thus, the results obtained in this study are consistent with the actual state and confirm the existing trend.

Another task undertaken in this article is connected with the need to obtain the answer to the second part of the research question – related to the assessment of the separate level of significance of these determinants. Considering only the indications of 'very large' and 'large' impact on innovative development, the most important is 'strategy' (58% of indications), which coincides with both the results regarding the strength of the impact (the largest related to the strategy) and the number of indications showing the impact of this factor on innovative development. The second place in this respect is occupied by the concept of 'open innovation' (cooperation with entities in the environment), which was very often indicated by a total of 53.8% of surveyed entities. The third factor in this ranking is the resource factor – in total 56.7% of SMEs rated it highly. In the case of the latter two determinants, the situation with respect to impact strength is the opposite: it was greater in the case of 'resources' than 'open innovation'. This proves the fact that despite the greater importance of 'open innovation' in the process of innovative development of these SMEs, its impact is smaller than in the case of resources. A summary of the significance of these three factors in the subjective assessment of the surveyed enterprises is presented in Table 4.

In division into groups, it is worth noting that the significance in the 'large' category increases with the size of the studied entities (the exception is only 'resources'). This means that both 'strategy' and 'open innovation' are the most important for larger entities: for SMEs more than for smaller entities: micro and small ones. The reasons for this state of affairs should probably be sought in the great awareness as to the significance of these factors in their innovative development among larger entities. In other words, larger entities have experienced the significance of these factors in an empirical manner – they have become convinced in practice of their impact on this development. On the other hand, smaller entities, mainly due to their internal conditions (e.g., resistance to the environment, expressed by a reluctance to exchange experiences and a tendency to plan their development in a short-time perspective, and a lack of a strategic approach) underestimate these factors as key in this process. In the case of resources, differences in the assessment of individual factors are so small that it can be stated that their assessment for individual groups is similar (in the category 'significant importance'), although with somewhat greater importance in relation to larger entities. On the other hand, when considering the 'very important' category, small enterprises have the largest share in all three determinants. This means that this group strongly indicates their large role – most indications (17.7%) relate directly to resources. This is probably due to the fact that, on the one hand, this factor is most often used by this group of entities, and on the other hand, there is the largest 'deficit' of resources among these enterprises (they are in the process of further development, hence the greater demand for resources).

**Table 4** Collective summary of the subjective assessment of the significance of three factors by company group

| *Significance* | *Micro* | | *Small* | | *Medium* | | *Total* | |
|---|---|---|---|---|---|---|---|---|
| | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* |
| *Impact of 'open innovation' on innovative development* | | | | | | | | |
| Very large | 9 | 9.9 | 15 | 11.9 | 8 | 9.5 | 32 | 10.6 |
| Large | 32 | 35.5 | 54 | 42.9 | 44 | 52.4 | 130 | 43.2 |
| Medium | 35 | 38. | 43 | 34.1 | 30 | 35.7 | 108 | 35.9 |
| Small | 13 | 14. | 12 | 9.5 | 1 | 1.2 | 26 | 8.6 |
| Very small | 2 | 2.2 | 2 | 1.5 | 1 | 1.1 | 5 | 1.6 |
| Number of enterprises that responded | 91 | | 126 | | 84 | | 301 | |
| *Impact of strategy on innovative development* | | | | | | | | |
| Very large | 18 | 15.8 | 28 | 16.8 | 19 | 16.4 | 65 | 16.4 |
| Large | 37 | 32.5 | 66 | 39.5 | 62 | 53.4 | 165 | 41.6 |
| Medium | 49 | 43.0 | 64 | 38.3 | 32 | 27.6 | 145 | 36.5 |
| Small | 8 | 7.0 | 7 | 4.2 | 3 | 2,6 | 18 | 4.5 |
| Very small | 2 | 1.7 | 3 | 1.7 | 0 | 0.0 | 5 | 1.2 |
| Number of enterprises that responded | 114 | | 167 | | 116 | | 397 | |
| *Impact of resources on innovative development* | | | | | | | | |
| Very large | 15 | 16.1 | 21 | 17.8 | 4 | 5.3 | 40 | 14.0 |
| Large | 37 | 39.8 | 53 | 44.9 | 32 | 42.7 | 122 | 42.7 |
| Medium | 31 | 33.3 | 37 | 31.4 | 32 | 42.7 | 100 | 35.0 |
| Small | 8 | 8.6 | 6 | 5.1 | 7 | 9.3 | 21 | 7.3 |
| Very small | 2 | 2.2 | 1 | 0.8 | 0 | 0.0 | 3 | 1.0 |
| Number of enterprises that responded | 93 | | 118 | | 75 | | 286 | |

Note: Ne – number of entities, % – percentage and N = 819.

*Source:* own elaboration

### *3.4 Assessment of causes of influence of determinants on SMEs' innovative development*

The last of the research questions is designed to determine the conditions (internal and/or external) affecting the great importance of these determinants. Therefore, the research question was formulated as follows: what are the (main) reasons for the significant impact of these three determinants on innovative development in the subjective assessment of the SMEs surveyed in Poland? Of course, the reasons will be different for each of these factors.

In the case of 'open innovation', its weight was mainly due to the impact of the 'turbulent environment' on the enterprises. There is a simple principle – if enterprises want to develop innovatively, they have to adapt to changes in the environment. Over

75% of entities indicated the significant importance of this factor. It means the enterprises indicate that changes in the environment are so great that they are not able to detect all such changes, or if these entities are able to do so, they are unable to properly respond to the changes. This proves the enormous dynamics of the environment and changes occurring in it. The following table presents the rate of SMEs' response to changes in the environment (Table 5).

**Table 5** Response rate of SMEs (broken down into groups) to changes in the environment

| *The rate of response to changes* | *Micro* | | *Small* | | *Medium* | | *Together* | |
|---|---|---|---|---|---|---|---|---|
| | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* |
| The company reacted in advance to changes in the environment | 14 | 15.4 | 28 | 22.2 | 20 | 23.8 | 62 | 20.6 |
| The company responded at a pace comparable to changes in the environment | 52 | 57.1 | 81 | 64.3 | 53 | 63.1 | 186 | 61.8 |
| The company reacted late to changes in the environment | 20 | 22.0 | 17 | 13.5 | 10 | 11.9 | 47 | 15.6 |
| The company did not respond to changes taking place in the environment | 5 | 5.5 | 0 | 0.0 | 1 | 1.2 | 6 | 2.0 |
| Number of enterprises that responded | 91 | | 126 | | 84 | | 301 | |

Note: Ne – number of entities, % – percentage and N = 819.

*Source:* own elaboration

The above-presented data show that 98% of surveyed SMEs responded in different ways to environmental changes. This means that the environment (and thus the 'open innovation' factor) is important for them from the point of view of innovative development. A very important reaction for these entities is 'ahead of time' and at a 'comparable' pace (this applies to small and medium-sized entities), which proves the enormous importance of this factor for their development. A regularity can be observed here, i.e., the larger the entity, the greater (quicker) the response to changes in the environment (which confirms the significance of this determinant). It is reasonable to formulate a thesis which states that the importance of 'open innovation' is greater for larger entities, which also results in greater openness to the environment and changes occurring in it. Therefore, one can answer the research question as follows: the identified reason (one of many) of the relatively high level of significance of 'open innovation' as a factor influencing the innovative development of SMEs in Poland is undoubtedly the need for rapid adaptation to changes in the environment and response to these changes.

In turn, in relation to the 'strategy' (the second of the discussed factors) – the most important factor affecting innovative development, it can be stated that its enormous weight is the result of a desire to improve (maintain or further strengthen) this development in the long term. This goal is declared by about 97% of enterprises indicating the 'strategy' factor as an important determinant of their innovative development. This proves a positive attitude of these entities, firstly, to the role of innovative development (and their awareness in this field), and secondly to strategic planning and taking into account the importance of innovation in this process as a key

element improving, e.g., market position. The table below presents the main intentions related to the 'strategy', which indicates their importance in the subjective assessment of the surveyed enterprises (Table 6).

**Table 6** SMEs' intentions in the field of 'strategy' as a factor influencing innovative development

| *The willingness of the company to* | *Micro* | | *Small* | | *Medium* | | *Together* | |
|---|---|---|---|---|---|---|---|---|
| | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* |
| Improving a weak level of innovative development | 18 | 15.8 | 18 | 10.8 | 9 | 7.8 | 45 | 11.3 |
| Maintaining an average level of innovative development | 48 | 42.1 | 60 | 35.9 | 30 | 25.9 | 138 | 34.8 |
| Maintaining a high level of innovative development | 22 | 19.3 | 44 | 26.3 | 34 | 29.3 | 100 | 25.2 |
| Further strengthening the already high level of innovative development | 21 | 18.4 | 37 | 22.2 | 34 | 29.3 | 92 | 23.2 |
| No need to prioritise 'strategy' | 5 | 4.4 | 8 | 4.8 | 9 | 7.8 | 22 | 5.5 |
| Number of enterprises that responded | 114 | | 167 | | 116 | | 397 | |

Note: Ne – number of entities, % – percentage and N = 819.

*Source:* own elaboration

Table 6 indicates the importance of the 'strategy' factor for SMEs in Poland in division by groups. Larger (small and medium) enterprises are inclined to continually improve their level of innovative development. This willingness is determined by external factors that prove the role of innovation in their development. This allows us to formulate another thesis which states that: *larger enterprises are more focused on the 'strategy' factor than smaller ones* (thus it is of great importance to them), *which is expressed in appropriate development plans and taking into account innovation as a key element*. Smaller (micro) enterprises focus much less on maintaining their high level of innovative development (there are few such entities – in practice they want more to maintain or improve their low or medium level of this development). Therefore, the 'strategy' factor is much more appreciated by entities from the group of small and medium-sized entities. They are the most developed innovatively and that is why they see the need for further development – *hence, this need is determined by the size of the enterprise.* Answering the posed research question, it should be stated that the reason why SMEs in Poland treat the 'strategy' as the main factor influencing their innovative development is the desire to expand further and it concerns larger entities among SMEs, i.e., SMEs.

In relation to the last of the factors, i.e., 'resources', *it should be noted that their relatively great importance* (smaller compared to the above two) *results* (concerns the subjective assessment of enterprises) *from their too small size* (applies to both: own material and intangible resources) *in relation to existing needs, on the one hand, and limited access to external resources, on the other hand*. In the case of material resources, the largest mismatch (greatest needs) concerns 'finances' (over 52% of surveyed enterprises), while the largest intangible resources category relates to intellectual resources (e.g., knowledge) (approx. 40% of respondents) (Table 7).

**Table 7** The degree of lack of matching of own resources in relation to the needs*

| *Type of resources* | *Micro* | | *Small* | | *Medium* | | *Together* | |
|---|---|---|---|---|---|---|---|---|
| | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* | *Ne* | *%* |
| *Material resources* | | | | | | | | |
| Things | 5 | 12.5 | 8 | 16.3 | 9 | 27.3 | 22 | 18.1 |
| Finance | 23 | 57.5 | 28 | 57.1 | 13 | 39.4 | 64 | 52.4 |
| People | 12 | 30.0 | 13 | 26.6 | 11 | 33.3 | 36 | 29.5 |
| Number of enterprises that responded | 40 | | 49 | | 33 | | 122 | |
| *Intangible resources* | | | | | | | | |
| Things | 3 | 23.0 | 6 | 27.3 | 9 | 50.0 | 18 | 34.0 |
| Finance | 6 | 46.2 | 6 | 27.3 | 2 | 11.1 | 14 | 26.4 |
| People | 4 | 30.8 | 10 | 45.4 | 7 | 38.9 | 21 | 39.6 |
| Number of enterprises that responded | 13 | | 22 | | 18 | | 53 | |

Notes: Ne – number of entities, % – percentage and N = 819. *Despite too small numbers, the shares were calculated due to the need for comparisons.

*Source:* Own elaboration

In the case of the analysis presented in the table above, it can be stated that generally these deficiencies depend on the size of enterprises and the type of considered resources. It is clearly seen that larger (medium) entities are better equipped with material resources (a lack of matching relates to an average of 27 - 33%) than intangible ones – deficiencies in this respect reach an average level of 39 - 50%. The conclusion that can be derived from the above-presented analysis is as follows: the relatively low level of matching of own resources has a 'positive' impact on the relatively high rating of this factor as one of determinants of innovative development. In other words, enterprises conducting innovative activity are aware that without the proper level of their own resources they will not be able to achieve their goals regarding the discussed development. Hence, the high importance of these resources in the subjective assessment of these entities. It can be assumed that higher assessment of the significance of these resources is seen in the case of those entities that lack such resources than in the case of those enterprises that have them 'in abundance'.

In the case of external resources, the assessment of their availability in the environment is quite low. Only 30–40% of surveyed enterprises (indicating the importance of the resource factor) confirmed the level of this availability as very good or good. This means that more than half of the entities are of the opinion that obtaining resources from the environment creates serious problems. Hence, the huge importance of this factor in innovative development. The research shows that the least available are financial resources (approx. 45% of respondents) and the most available are human resources (approx. 57% of respondents). Thus, greater availability of resources may reduce the importance of this factor as one of determinants of innovative development of enterprises. For now, the rarity of both internal and external resources affects the fact of emphasising their important role in the process of intensifying activities aimed at innovative development. This is the answer to the research question posed above.

### 3.5 Discussion

The purpose of this discussion is to confirm the results of the research presented above in relation to the world literature. In most cases, this literature confirms the existence of certain regularities in the area of determinants affecting the innovative development of SMEs. However, the research presented in this article indicates the existence of certain relationships broken down into specific groups of surveyed enterprises, which has not yet been prominently highlighted in the world literature. The attention of foreign researchers is mainly focused on SMEs as a whole. In addition, a definite novelty of the presented research involves taking into account these three determinants, presenting their full characteristics and the role they play in the innovative development of the surveyed enterprises. In the Western literature, they are treated as one of many – hence their analysis is cursory and made against the background of other factors affecting the discussed SME development. Focusing only on these types of determinants in the article resulted from the need to take into account the specificity of Polish enterprises (e.g., a short period of activity of SMEs in Poland). This specificity required taking into consideration internal (strategy) as well as external (open innovation – willingness to cooperate) factors and both internal and external factors (resources), and thus a more holistic view of the discussed issue. In addition, it gave this analysis a more universal and multi-threaded character.

Comparing the research presented in this article with other studies, one can point to some similarities and differences. As the literature on the subject shows, a tendency to create by entities their own development strategies is important among internal determinants. In this respect, the size of the entities analysed is important. It turns out that smaller entities are more inclined to develop their own development strategies (taking into account the improvement of their competitiveness) than large entities (Bamberger et al., 1990). Other authors say quite the opposite: SMEs are more focused on improving existing technologies, they usually work ad hoc and informally in the short term – hence their production cycle is definitely short (Nooteboom, 1994). In addition, they are characterised by a rapid change in technology, rapid adjustment to the client's portfolio and improvement of competitive position (Huang et al., 2002). Therefore, they are more flexible and effective in the process of innovative implementations (Allocca and Kessler, 2006). In the opinion of many authors, developing long-term strategic plans in their case does not make much sense. However, as the research presented above indicates, Polish SMEs see the need for strategic planning. Moreover, they define it as an important determinant of development. There is a definite difference between Western and Polish research in this area.

Another factor which is openness to the environment (open innovation), was also identified in the literature as important. Research published by various authors indicates that its role increases in relation to those innovative SMEs that conduct R&D activity. They work with both clients and research institutions. The tendency to cooperate with external partners is closely correlated with the development of enterprise innovation (Avermaete et al., 2010). In turn, other authors emphasise the importance of internal and external sources of knowledge acquisition. They claim that the diversity of these sources increases the chances of innovation, motivating organisations to search for new knowledge and acquire it from the market and professional external resources (Mol and Birkinshaw, 2009). In addition, they point to a number of reasons for taking advantage of the environment to improve their level of innovation. Among these reasons,

they emphasise the impact of cooperation on eliminating conflicts within enterprises, reducing the level of uncertainty in the process of new innovative implementations, or facilitating the initiation and implementation of new innovative solutions (Damanpour and Schneider, 2006). The results of the research contained in this article also indicate a number of conditions, the most important of which is the need to adapt to the environment and respond to changes in it. The conducted research takes into account the specificity of native SMEs, consisting in the existing differences between enterprises in Poland and other countries, including Western Europe or the world. Therefore, some of the conditions have been adapted to Polish realities. Nevertheless, the importance of the 'open innovation' factor, and cooperation implemented within, is referred to as significant in the literature.

The third factor, i.e., resources, has also been characterised in the literature as one of the factors positively influencing innovative development. Resources allow the enterprise to acquire innovations from the environment, to bear the costs of implementing innovations, and to extrapolate new ideas and adapt them to the needs of entities implementing them, on the one hand, and clients, on the other hand. As is rightly pointed out in most studies, resources determine the success or failure of an enterprise in improving its innovativeness. In their absence, the likelihood of innovative development is low, hence the need to create a special (internal) fund for such development (Wan et al., 2005). Internal resources are necessary for the development of unique products and technologies leading to a competitive advantage. The external ones come from cooperation within the network with suppliers, customers and various organisations. The added value of operating in such networks is easier access to specialised knowledge and low transaction costs in the event of its transfer (Laforet, 2011). In the literature, one more regularity was noted, also indicated in this article based on our own research: too low a level of matching own resources to existing needs can 'positively' affect the demand for external resources. It can be noted that enterprises with a high level of internal resources are reluctant to explore the environment, and thus to take advantage of development opportunities resulting from cooperation with other entities (Freel and Harrison, 2007). However, our own conclusions based on the research go a step further: our findings indicate that higher assessment of the significance of these resources is seen in the case of those entities that lack such resources than in the case of those enterprises that have them 'in abundance'.

The presented considerations regarding the three determinants analysed in the article confirm to a greater or lesser extent their importance in the process of innovative development of the surveyed Polish SMEs. Studies described in the world literature recognise the difference in the role that is assigned to these determinants in improving the level of innovation. It often depends on the scope and nature of these studies presented by various authors.

## 4 Conclusions

The considerations contained in this study allow us to draw several important conclusions regarding innovative development and determinants directly or indirectly affecting this development. Firstly, innovative development is a relatively new category in management sciences, where it is often replaced by the concept of innovativeness. There

is a fairly large difference in meaning between these concepts, although the use of them interchangeably is not treated as error.

Secondly, innovative development can be seen in terms of organisational or process development. The former is carried out by the organisation as part of its subsystems through specific innovative activities referred to as interventions. They can have a diverse character due to the purpose and scope of their making. Nevertheless, they are important from the point of view of conceptualising the concept of 'innovative development'. In the organisational concept, the adopted definition is that innovative development is the development of an organisation carried out by innovative interventions (through innovations), in which innovation plays the role of a tool and is also the goal resulting from the conducted innovative activity aimed at introducing its outcome, i.e., a ready-made innovative solution, into the market. On the other hand, in process terms, this development is defined as a process (having its beginning and end) consisting in the implementation of innovative solutions as a result of which the level of a given organisation's innovativeness changes from a lower to a higher state (developmental character). It is worth emphasising that it focuses on stages, ranging from the idea to the implementation and commercialisation of the finished solution.

Thirdly, three basic factors were selected, referred to in the literature as determinants, and their impact on innovative development was confirmed by statistical methods. Their selection was deliberate and resulted from the division of these factors adopted in this study into internal and external ones. As a result of the estimation, it turned out that 'strategy' has the greatest impact, 'resources' come second and 'open innovation' comes third.

Fourthly, as a result of the assessment of the significance of the impact of these individual factors on innovative development (through the analysis of structure indicators), it turned out that the most important is 'strategy', then 'open innovation', and finally 'resources'. In addition, this importance is somewhat dependent on the size of enterprises – with the increase in the size of the enterprise, the share of entities declaring a significant impact of specific factors on their innovative development also increases. In relation to these factors, it can be concluded that both 'strategy' and 'open innovation' are the most important for larger entities: for small and medium enterprises more than for smaller entities: micro and small ones. This allows us to formulate the thesis about varying degrees of impact that these determinants have on the entities in question due to the group (size).

Fifthly, an attempt was made to answer the question about the reasons for the impact of these three factors on innovative development. In the case of 'open innovation', the role of the environment and changes that occur in it was indicated. It turned out that the reason for the high level of significance of 'open innovation' as a factor influencing the innovative development of SMEs in Poland is undoubtedly the need to quickly adapt to changes in the environment and respond to these changes. In addition, this level also depends on the size of the studied entities: larger ones have a quick response to changes (and thus the significance of this determinant is higher). Then in the case of 'strategy' it turns out that the huge significance is the result of the desire to improve (maintain or further strengthen) this development in the long term. In addition, it has been shown that larger enterprises are more focused on the 'strategy' factor than smaller ones, which is expressed in the development of appropriate development plans and incorporating innovation as their key element. The weight of the last of the factors (resources) results from the insufficient amount of own resources in relation to the existing needs, on the one

hand, and from the limited access to external resources, on the other hand. The lack of these resources determines their 'value' as a factor influencing development. The level of this impact depends on the type of resources and the size of enterprises. Larger entities are characterised by better 'endowment' in their own tangible resources than intangible ones. With regard to external resources, the majority of the surveyed entities confirmed their poor availability (at a level of about 40%); access to human resources was the most positively assessed, while the availability of financial resources was seen as the worst. To sum up, the strength of the impact and the significance of these factors in the process of shaping innovative development is considerable. Therefore, SMEs must take them into account if the goal of their activities is innovative development in the long run.

Obtained results of our own research allow us to present some recommendations aimed at improving the current state of affairs. Firstly, it is necessary to change the mentality of some entrepreneurs in the area of evaluation of cooperation (open innovation) with other entities in the environment. This means overcoming psychological barriers that result from concerns about one's own intangible resources (knowledge). Entrepreneurs are afraid of establishing relationships because they think it will threaten their economic interest. Secondly, only the market and clients' 'innovative' attitude can force them to think strategically (develop strategies for innovative development). Despite the fact that SMEs are flexible in terms of adaptation to clients' needs, they must recognise the need for the implementation of innovations in the future perspective. This is a time-consuming process spread over many years into the future. Thirdly, SMEs in Poland (taking into account material resources) should strive to create their own financial reserves for innovative development. On the other hand, when it comes to external material resources, an active state policy, which should allow greater access to such funds on preferential terms, plays a large role in this process. In the case of intangible resources (knowledge), the remedy for the existing situation is a greater willingness of enterprises to cooperate and openness to the environment, which allows the exchange of knowledge. In addition, the intensification of R&D activity among these enterprises may also be such a panacea.

The conclusions presented above do not exhaust the topics related to innovative development and determinants of this development. Further research seems to be necessary regarding the identification and assessment of further factors affecting this development. In addition, it is worth focusing studies on market factors and their role in the innovative development of SMEs in Poland. In this regard, knowledge expansion should follow several basic directions. Firstly, the question to what extent the market determines innovative development should be answered. Secondly, the question whether entrepreneurs in Poland are aware (and to what extent) of the importance of innovation for their long-term development and whether the level of this awareness translates into a greater propensity to make innovative changes in these business entities. And finally, an answer to the question whether SMEs' absorption capacities are sufficient to make new implementations and explore the environment in search of new solutions should be sought. The number of issues and problems related to research into the impact of determinants on innovative development is long, which requires conducting further research in this area. Such studies will undoubtedly help to find answers to issues that interest scientists in the field of innovation and innovativeness of enterprises. Therefore, it should be emphasised that 'innovation' as the basic determinant of SMEs' development has an indisputable character. The lack of innovative development will contribute to the weakening of the competitive position in foreign markets, which will have primarily

economic effects. In the long term, the winners will be those which will be able to offer customers not only cheap but above all new solutions tailored to their needs. In the era of 'prosperity', price will become a secondary factor – an idea and an innovative solution will matter.

## References

Ackerman L. (1997) 'Development, transition or transformation: the question of change in organisations', in Bass, J., Van Eynde, D., Hoy, J. and Van Eynde, D. (Ed.): *Organisation Development Classics*, p.55, Jossey-Bass, San Francisco.

Allocca, M.A. and Kessler, E.H. (2006) 'Innovation speed in small and medium-sized enterprises', *Creativity and Innovation Management*, Vol. 15, No. 3, pp.279–295.

Andersson, M. and Ejermo, O. (2005) 'How does accessibility to knowledge sources affect the innovativeness of corporations? Evidence from Sweden', *The Annals of Regional Science*, Vol. 39, No. 4, pp.741–765.

Avermaete, T., Viaene, J., Morgan, E.J., Crawford, N. and Mahon, D. (2010) 'Determinants of product and process innovation in small food manufacturing firms', *Trends in Food Science and Technology*, Vol. 15, No. 10, pp.474–483.

Bamberger, I., Donckels, R., Fröhlich, E., Gabele, E., Haahti, A., Haake, K., Koning, K., Lehtimäki, A., Pichler, H., Pleitner, H., van der Wilde, J. and Weir, A. (1990) *Strategic Orientation of Small European Businesses*, STRATOS Group. Avebury.

Barnett, H.G. (1953) *Innovation: The Basis of Cultural Change*, p.462, McGraw-Hill Book Company Inc., New York.

Bayarçelika, E.B., Taşelb, F. and Apakc, S. (2014) 'A research on determining innovation factors for SMEs', *10th International Strategic Management Conference*, *Procedia – Social and Behavioral Sciences*, No. 150, pp.202–211.

Beckhard, R. (1969) *Organizational Development: Strategies and Models*, pp.10–12, Addison-Wesley, Massachusetts.

Bennis, W.G. (1969) *Organization Development: Its Nature, Origins, and Prospects*, p.2, Addison-Wesley Pub. Co., Massachusetts.

Boulton, R., Libert, B. and Samek, S. (2001) *Odczytując Kod Wartości*, p.96, WIG Press, Warszawa.

Breznitz, D. and Ornston, D. (2017) *EU Financing and Innovation in Poland*, European Bank for Reconstruction and Development, Working Paper No. 198.

Burke W.W. and Bradford, D.L. (2005) 'The crisis in OD', Bradford, D.L. and Burke, W.W. (Eds.): *Reinventing Organization Development: New Approaches to Change in Organizations*, p.12, Pfeiffer, Wiley & Sons, Inc., San Francisco.

Commission Recommendation (2003) '2003/361/EC of 6 May 2003 concerning the definition of small and medium-sized enterprises', *Official Journal of the European Union*, 20 May, Vol. 124, No. 20, p.36.

Damanpour, F. and Schneider, M. (2006) 'Phases of the adoption of innovation in organizations: effects of environment, organization and top managers', *British Journal of Management*, Vol. 17, pp.215–236.

Damanpour, F., Chiu, H.H. and Wischnevsky, J.D. (2009) 'Organizational complexity, resources and the adoption of management innovations: the influence of adoption process', *European Academy of Management Conference*, Liverpool.

Elmquist, M., Fredberg and Ollila, S. (2009) 'Exploring the field of open innovation', *European Journal of Innovation Management*, Vol. 12, No. 3, pp.326–345.

Freel, M. and Harrison, R. (2007) *The Community Innovation Survey 4: Profiling Scotland's Innovation Performance*, Final Project Report, Scottish Executive [online] http://www.scotland.gov.uk/publications/2007 (accessed 12 July 2007).

Gumusluoglu, L. and Ilsev, A. (2009) 'Transformational leadership, creativity, and organizational innovation', *Journal of Business Research*, No. 62, pp.461–473.

Hollanders, H. and Es-Sadki, N. (2015) *Innovation Union Scoreboard 2019: Enterprise and Industry*, Report, Maastricht Economic and Social Research Institute on Innovation and Technology, European Commission, Luxemburg, pp.82–105.

Hollanders, H., Es-Sadki, N. and Merkelbach, I. (2019) *European Union Scoreboard 2019: Enterprise and Industry*, Report, Maastricht Economic and Social Research Institute on Innovation and Technology, European Commission, Luxemburg, pp.62–95.

Huang, X., Soutar, G.N. and Brown, A. (2002) 'New product development processes in small and medium-sized enterprises: some Australian evidence', *Journal of Small Business Management*, Vol. 40, No. 1, pp.27–42.

Krupski R. (2009) 'Strategia a elastyczność organizacji', in Lachiewicz, S., Zakrzewska-Bielawska A. (Ed.s): *Zarządzanie Organizacjami w Warunkach Konkurencyjnej Gospodarki*, pp.9–15, Wydawnictwo Politechniki Łódzkiej, Łódź.

Laforet, S. (2011) 'A framework of organisational innovation and outcomes in SME's', *International Journal of Entrepreneurial Behaviour and Research*, Vol. 17, No. 4, pp.380–408.

McLean, G.N. (2009) *Organization Development: Principles, Processes, Performance*, p.27, Berrett-Koehler Publishers, San Francisco.

McNamara C. (2009) *Organizational change and development, Authenticity Consulting*, Free Management Library LLC [online] http://managementhelp.org/organizationalchange/ #anchor317286 (accessed 20 April 2011).

Mol, M.J. and Birkinshaw, J. (2009) 'The sources of management innovation: when firms introduce new management practices', *Journal of Business Research*, Vol. 62, No. 12, pp.1269–1280.

Niedzielski, P. (2005) 'Rodzaje innowacji', in Matusiak, K.B. (Ed.): *Innowacje i transfer technologii – Słownik Pojęć*, p.74, PARP, Warszawa.

Nooteboom, B. (1994) 'Innovation and diffusion in small firms: theory and evidence', *Small Business Economics*, Vol. 6, No. 5, pp.327–347.

Platonoff A.L. (2009) *Zarządzanie Dynamiczne. Nowe Podejście do Zaradzania Przedsiębiorstwem*', p.45, Difin, Warszawa.

Ramstad E. (2008) *Innovation Generating Model – Simultaneous Development of Work Organization and Knowledge Infrastructure, Experimenting in the Field of Organizational development*, Dissertation for the degree of Doctor of Science in Technology, University of Technology, Helsinki, p.40.

Ruvio, A.A., Shoham, A., Vigoda-Gadot, E. and Schwabsky, N. (2014) 'Organizational innovativeness: construct development and cross-cultural validation', *Journal Production Innovation Management*, Vol. 3, No. 5, pp.1004–1022.

Stanisławski, R. (2017) *Open Innovation a Rozwój Innowacyjny Mikro, Małych i Średnich Przedsiębiorstw*, pp.122–135, Wydawnictwo Półtechniki Łódzkiej, Łódź.

Starzyńska, W. and Michalski, T. (1996) *Metody Statystyczne w Biznesie*, Absolwent, Łódź.

Wan, D., Hautong, C. and Lee, F. (2005) 'Determinants of firm innovation in Singapore', *Technovation*, Vol. 25, No. 3, pp.61–268.

Wojnicka-Sycz, E., Sycz, P., Walentynowicz, P. and Waśniewski, J. (2018) 'Internal determinants of firms' innovativeness', *Operations Research and Decisions*, No. 4, pp.83–97.

Zalewski, R.I. and Skawińska, E. (2014) 'Innovative activity of enterprises in Wielkopolska region', in Stachowicz, J., Nowicka-Skowron, M. and Voronina, L.A. (Eds.): *Development of an Organization and a Region as a Challenge for Economics and Management*, Towarzystwo Naukowe Organizacji i Kierownictwa, Toruń.

Zemplinerová, A. and Hromádková, E. (2012) 'Determinants of firm's innovation', *Prague Economic Papers*, No. 4, pp.487–503.