# OPEN INNOVATION AS A DETERMINANT OF INNOVATION DEVELOPMENT AMONG SME IN POLAND

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**Abstract**

*Open innovation begins to play an increasingly important role in the innovative development of small and medium-sized enterprises and globalization. This is the effect of significant benefits that they achieve as a result of presenting attitudes, which are open to the environment. Increase of the importance in relation to open innovation results directly from the benefits that these enterprises get from the environment's exploration. Furthermore, innovative development – as emphasized in many researches – would be impossible without the use of open innovation models. Hence, it is reasonable to state that open innovation is one of the main determinants of this development. This is particularly important for small and medium-sized enterprises due to their limited resources. In the majority of situations, the environment acts as a buffer to fill in existing gaps. Therefore, these enterprises are mainly focused on the exploration of the environment. The aim of this article is to show the relation between open innovation and innovative development, as well as perform its overall characterization. The research took place in 2017 among the selected (at the high level of innovation development) small and medium enterprises (SMEs) in the framework of the research project: The concept of "open innovation" in small and medium-sized enterprises - models, trends and determinants of development. The direct interview was the main source of information. The study included those entities which over the last three years conducted innovation activities in business areas.*

**Keywords:** *open innovation, close innovation, small and medium enterprises, internal and external resources*

## 1. INTRODUCTION

Small and medium enterprises in the European economy play an extremely important role. This applies to all European Union countries (including Poland), where the impact of these entities on the generally economic growth and innovative development is very large. The importance of these enterprises can be considered in terms of their number, their GDP or the number of employees. As regards to the **first of these elements**, it should be noted that the overall share of SMEs in the European Union and in Poland is identical - it amounts to 98.8% of all entities operating in the economy. However, the difference concerns the structure, as in European countries there are more small and medium-sized enterprises and fewer micro-enterprises compared to Poland (respectively: 6% in EU countries and 3.4% in Poland and 92.9% in the EU and 95.5% in Poland). It is also worth emphasizing that the differences between Polish small and medium-sized enterprises and EU ones also concern the dynamics of their growth in favor of the last ones. When comparing 2010 and 2015, it should be noted that this growth reached value 8.3% in Poland and 7.3% in the EU countries,. Presenting the **second of these elements** (the amount of GDP generated) it seems necessary to emphasize the significant advantage on the part of EU countries, where the average level of GDP created by the discussed enterprises amounts to 47.3% (in Poland only 43.7%). These differences result mainly from the SME industry's structure. The dominance of micro and small entities and a larger number of entities dealing mainly with commercial and industrial activities (and not with services) have a negative impact on the level of GDP. **The third element** (concerning employment in SMEs) is an advantage on the Polish side. In practice, this means that SMEs give employment to 69% of professionally active people in Poland, where compared to EU countries, this share does not exceed 67%. However, it should be remembered that there are significant differences with respect to particular groups of enterprises. The largest number of employees in Poland is in micro-enterprises (36%), where this share is less than 30% in comparison to EU countries. The opposite situation is in

relation to small entities, because in the European Union 20% of active employees are employed by these enterprises and only 14.5% of them constitute a "source of income" for professionally active Poles. In addition, Poland is characterized by a higher level of self-employed people in the entire working population than on average in European countries. While in the UE countries, the share is 9.9%, the level reaches 13.3% in Poland [Tarnawa, Skowrońska, 2017]. Therefore, it can be concluded with all responsibility that small and medium-sized enterprises are the driving force of European economies. However, due to their low "economic power" resulting from large dispersion and relatively weak own resources and difficult access to external sources, they require special treatment both from the individual member states and the European Union. The manifestation of this type of treatment is the possibility of granting them public support by particular governments (most often in the form of laws and legal regulations) and assistance provided under the structural funds devoted to the (innovation) development of these enterprises.

When assessing the level of innovativeness of the analyzed SMEs in EU countries in relation to the last three years, it should be noted that there has been a significant decrease in this level. This applies to most countries of the European Union, except for such countries as: Belgium, Ireland, Great Britain, Austria or France. A negative example is Poland, in which in 2012 there were 23% of innovation enterprises. Two years later (2014), this share decreased by 2 pp (to 21%). Therefore, it should be noted that in terms of innovation development, Polish SMEs "have been two steps back" in the recent period, which demonstrates much lower environmental pressure in the creation of innovation solutions and at the same time there was less interest in entrepreneurs by continuous and systematic implementation of new products in four main areas, i.e. product, process, organizational or marketing. The source of innovation solutions may be running own R & D activity, which requires large expenditures (mainly financial) and "notorious" improvement of intangible resources, which is knowledge (refined as a result of this activity) or implementation of ready-made solutions from outside. However, the last source is related to creating an open attitude to the environment and promoting business solutions among SMEs, under which these enterprises will be willing to share their achievements (on a commercial basis) with other entities. It should also be remembered that the other side of this "medal" - these entities wanting to acquire ready solutions must have developed absorption and assimilation skills that ensure the possibility of effective implementation of existing ready-made solutions. This type of attitude means willingness to cooperate with the broadly understood environment (including research units, business environment institutions, universities, etc.) determined as open innovations (OI) in the literature. In management sciences, they are described as a concept (or paradigm) aimed at improving and developing innovation economic organizations that are not closed to the environment. In practical terms, this means a tendency to establish relationships between various entities and the flow of knowledge both horizontally (at the same level of cooperation) and vertical (referring to different types of entities).

The main goal of this article is to assess the significance of the discussed concept of OI among SMEs, which the use by the analyzed enterprises is treated in terms of determinants of the innovation development among the discussed enterprises. This article deals with the results of research obtained during the implementation of a scientific project (financed by the Polish government in 2013-2018) entitled: The concept of open innovation in small and medium-sized enterprises - models, trends and determinants of development. The research was carried out in 2017 on a sample of 500 innovative small and medium enterprises in Poland. As part of this article, an attempt was made to answer the question about the SME approach in Poland to the discussed concept and to perceive it in terms of a factor positively influencing innovation, and thus the development of these enterprises.

Within the main objective set, the specific objective was defined, which is the presentation of the results obtained and drawing important conclusions on their basis. The scope of the application concerns only a small part of the research devoted to issues related to the role of open innovations and their impact on the development of small and medium-sized enterprises.

## 2. THEORETICAL BASICS

The scope of this article implies the need to clarify two basic concepts. The first one is related to **open innovations** and the last one to innovation development. The concept of open innovations (OI) was introduced for the first time to the literature of the subject by H. Chesbrough in 2003. He described OI as a "paradigm assuming the use of external and internal ideas and ways of entering the market, taking into account primarily advanced technologies" [Chesbrough, 2003]. In 2006, he made some modification of OI, claiming that OI is the use of two streams of knowledge, i.e. internal (outflow - sharing knowledge outside) and external (inflow - acquiring knowledge from outside), the aim of which is to accelerate the development of the enterprise, enabling its entry with new products on the market. This approach takes into account the dual nature of OI, describing the operation of the enterprise and the exploration of the environment. In practice, this means that an economic organization in addition of its own resources may use various external sources of knowledge, the number of which is in correlation with the greater tendency of entities to search for new solutions (knowledge) in the environment. So, if there are more such available sources in this environment, the tendency to seek is greater [Larsen, Salter, 2004].

The above dualistic character of OI is related to the perception of this paradigm (concept) in the context of the flow of knowledge, i.e. from the company to the environment (inside - out process) and from the environment to the enterprise (out - inside process). However, in practical terms, it is rare for entities using a two-way exchange of information (or knowledge) at the same time. Most often, OI involve a unilateral flow of knowledge, i.e. a transfer from the environment to an enterprise, which is particularly evident in relation to small and medium-sized entities [Enkel, Gassman, Chesbrough, 2009]. Such an approach, which takes into account only one-sided flow of knowledge, through the exploration of the environment, which final effect is to commercialize ideas - it is also reflected in the definition proposed by Teter and Tajar [Tether, Tajar, 2008].

The basic element of OI is the creation of relations between entities in the environment. This is characteristic of the open approach, which is the opposite of the closed approach. The feature of the first one was the idea that only having internal R & D departments is a strategic resource of the enterprise, enabling its development. Therefore, it was thought that only large economic entities with huge financial resources are able to make significant changes and compete on the global market. This view has become obsolete in recent years because, as experience in many countries around the world has shown, the leaders are those that do not have their own R & D department and they are innovatively developed to a large extent. Their development results from cooperation with various entities that they are able to offer innovation solutions. Acquiring novelty in the environment depends, on the one hand, on the dynamically developing environment and the tendency to pass it on to knowledge, and on the other hand on the absorption and assimilation capacity of enterprises that want to acquire knowledge. In the case of SMEs, the situation is so good that these enterprises are characterized by a much greater market flexibility than large entities. This is undoubtedly the effect of a little complicated structure and simple internal relations [Christensen, Olesen, Kjær, 2005].

The closed approach, from which enterprises are currently leaving for open attitudes, is characterized by exercising control over the entire innovation process. This usually applies to all stages, starting from the construction of the prototype and ending with market implementations. Each of these stages is subjected to strict control and burdened with a huge mystery, compliance with which is a prerequisite for success on the market. Therefore, cooperation with other entities in the environment is almost forbidden. In open innovation, which is based on cooperation, access to knowledge and information about the technologies used and external solutions as well as sharing on the principles of commercial innovation achievements plays an important role. Open innovations are characterized by the abolition of internal and external boundaries of the enterprise, which allows for a freer flow of resources (tangible and intangible) necessary for the development of innovation economic organizations. Therefore, they are more effective than closed innovations [Simic, 2013].

In this article, based on the above considerations, it is assumed that **open innovations involve cooperation of SMEs with various entities in the environment**. It can be vertical (horizontal) or

horizontal (horizontal). **The effect of this cooperation is to be obtained (or shared) innovative solutions of enterprises**. According to this definition, OI can be understood as a one-sided or two-sided flow of knowledge leading to innovation development. Therefore, OI are identified with cooperation for innovation implementations.

Another concept subject to short characteristics is the **innovation development**. In general terms, it means introducing changes in one of the company's areas (systems) by means of innovation. The effect of these changes is to get a better final state than it was at the beginning. In this sense, innovation plays a **tooling role** leading to achieving the intended goal in the form of more efficient functioning of an economic organization [Fitz-Enz, Davison, 2002]. In another sense, this development contributes to a measurable market benefit resulting from the commercialization of a new solution (product, process, etc.). This confirms, the definition of L. Gumusluoglu, A. Ilsev, who noted that OI is "... the tendency of an organization to develop new or improved products or services and deliver them to the market for success" [Gumusluoglu, A. Ilsev, 2009].

Innovation development can be considered in a different approach. First, as a process involving changes within an organization that can be treated in a broad and narrow sense. The broad sense concerns various types of changes: technical, organizational or economic. Narrow sense applies only to technological and system changes [Asheim, 2000]. Secondly, this development can be perceived through the prism of the organization's development, whose aim is to increase the level of knowledge and skills of the company, creating new canons of organizational culture, or ensuring stable growth in the longer term [French, 1969]. Regardless of how the development is considered, due to the features it possesses (the tool character and the final effect in the form of an innovation solution), it is often referred to as "**development through innovation**" in the subject literature [Stabryła, 1996].

In this article, innovation development is understood as **a process carried out by means of innovation (through innovation) involving the implementation of new solutions**. This development is a manifestation of organizational development undertaken for (and under the influence of) the environment, manifested by specific types of innovation activities.

## 3. METHODS AND CHARACTERISTICS OF THE RESEARCH

The research result used for the purposes of this article was achieved as a result of research conducted on a sample of 52,596 small and medium enterprises in Poland in 2017. Among them, only 851 entities conducted innovation activities, of which 804 cooperated with other entities in the environment (they are used in their activities open innovations). However, only 500 enterprises were selected as the general population, which were randomly drawn from a sample of 804 enterprises (thus they met both the innovation criterion and the criterion concerning open innovations). Innovation was defined as the implementation of a new solution in accordance with the OECD classification) of a product, process, organizational or marketing nature by a specific entity in the last three years.

From the above it follows that the selection of the test sample was two-layered. This was due to the lack of a sampling operator, which should be innovation enterprises for these studies. Therefore, on the first stage, there was the purposeful identification of sample and it concerned of those entities that met the innovation criterion (they carried out innovation activities). In the second (main) stage, there was selection of 500 enterprises which was chosen to answer questions related to the characteristics of open innovations and OI significance in their development process. The random character of the sample served to ensure the representativeness of the sample. In the literature of the subject, a representative sample is considered a population that meets three basic conditions: it is large enough, randomly selected and reflects the studied structure [Sokołowski, 2014]. In the case of these tests, all these conditions have been met.

These studies were conducted using the diagnostic survey method using two research techniques, ie CATI and CAWI, for which relevant questionnaires were built. The triangulation of the research techniques served essentially two purposes. First of all, it enabled conducting research in parallel, i.e. some respondents answered questions via the Internet, and some responded by phone. It allowed to

shorten the test time to one month. Secondly, it had an impact on increasing the level of maneuverability of completed questionnaires. Both aims were to increase the efficiency of research. Considering research techniques, it should be noted that the basic technique was CATI (69% of respondents) and CAWI was complementary (31% of respondents). On the other hand, considering the second element, it should be noted that the combination of these research techniques brought the expected effects in the form of an average level of maneuverability of 51%, which is a very good result in this type of research (in relation to CATI, this share was 46.6% and in the case of the CAWI, 69.2% supplemented questionnaires) [Stanisławski et al., 2018].

The four basic elements will be taken into account when characterizing the sample under consideration. **The first of these** is the division of this sample due to the size of the entities involved in the study. The majority, around 40% of the respondents were micro enterprises. The second group consisted of small entities (about 35%) and the smallest were medium-sized enterprises, which share in this study was approx. 24%. **The second** element includes the division of the sample due to the business sector. In accordance with the adopted assumption (at least 60% of the surveyed entities should conduct manufacturing activity), the majority of enterprises were enterprises conducting production activity (70.0% of respondents). Other entities dealt with trade (15,5%) and services (14.4%). **The third element** that characterizes the sample is the age of the surveyed enterprises. Extremely important from the point of view of these studies is the participation of mature entities, i.e. those that operate on the market for over 12 years. In the sample, they accounted for 74% of all entities covered by the study. The remaining groups were definitely smaller. In the case of "developing" entities (operating on the market from 4 to 12 years), it was less than 22%, and the "initial" entities did not exceed 4.5% of the total general population. This confirms the thesis about successive and gradual changes taking place among enterprises in Poland, where the most innovative are mature entities, passing successive and metamorphic development adequately to the size and number of functioning of the years on the market. **The last element** of the characteristic is the market range of the analyzed entities. Here, the vast majority pointed to the international (European) range (almost 40% of respondents) and the national coverage (about 30%). Other types remained in the vast minority: global (global) about 11% of respondents and regional less than 12% of respondents. Analyzing here, due to the size of enterprises (divided into groups: micro, small and medium), it can be noticed that the larger the entity - the larger also the market range. However, due to the limited scope of this article, only the numerical data for all SMEs participating in this study, without grouping, i.e. micro, small and medium enterprises, were compared (**Fig. 1**).

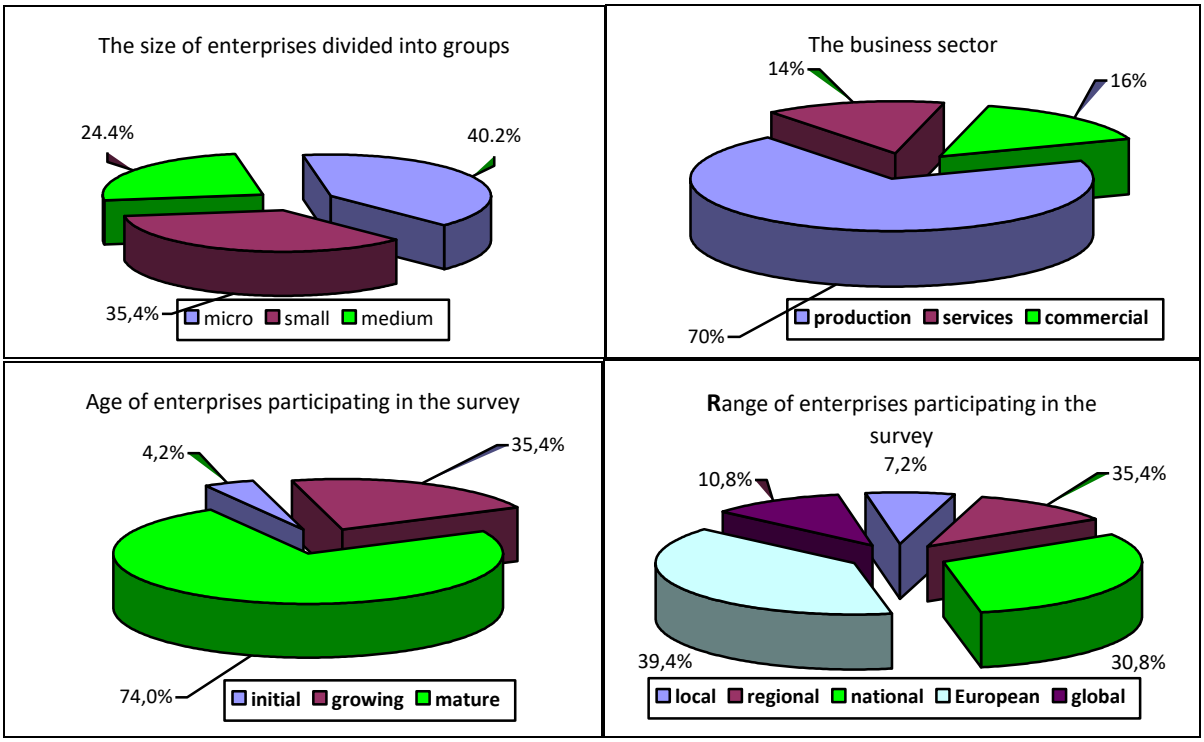


**Fig. 1.** Characteristics of the tested sample from the point of view of four basic elements: size, sector, age and market range

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J.2018, „Open innovation w MSP i podmiotach ich otoczenia w kontekście rozwoju innowacyjnego", Monografia, Wydawnictwo Placet, Warszawa.

It should be noted that the sample structure in terms of the size of enterprises is similar to the structure of Polish SMEs in only a small extent (the advantage on the side of micro enterprises in Poland is definitely higher than in this study). It seems necessary to emphasize that the research concerned only innovation enterprises. However, the majority of sole proprietorships cannot be treated as innovation enterprises, that is why this fact does not disqualify the sample in terms of representativeness, because of the general population to which the research applications relate are innovation SMEs.

## 4. RESULTS

*4.1.* Characteristics of open innovations among Polish SMEs

The manifestation of open innovations is establishing cooperation with various entities (in the environment) in which knowledge exchange takes place. The conducted research indicates that open innovations are used in 36.8% by small and medium enterprises in Poland. This share is measured by the number of indications regarding **cooperation** between SMEs and the environment as a result of it, new solutions can be created and/or implemented. These studies also indicated that there is a relationship between the propensity to use OI by these entities and their size. The highest level of this tendency is characteristic of medium-sized entities (ie the largest among SMEs) and the smallest level to micro-enterprises. This is due to greater confidence and greater resources. Medium enterprises, having more resources, are more inclined to make external relationships with others in the environment [Stanisławski 2017].

Characterizing the discussed OI concept, the first step will be to identify those environment entities to which Polish SMEs most often establish mutual relations. Generally, it should be noted that they best cooperate with each other (with other such enterprises - SME) and large companies (59.6% and 25.2%

respectively). Other entities (business environment intuitions, research units, higher education, public organization) constitute a small part of the cooperation undertaken by SMEs, and thus open innovations used by them (on average, 2.6% - 4.8%) (**Fig.2**).

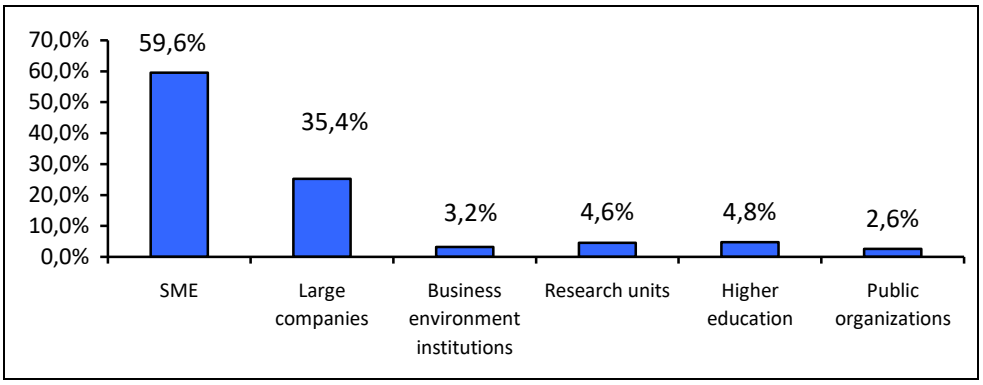


**Fig. 2.** Cooperation of SMEs with various entities in the environment

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J.2018, „Open innovation …", op. cit.

It can be presumed that the marginal share of other groups of entities results from their minor importance. In other words, they do not fully fulfill the role to which they were appointed, which may also mean that the assessment of their importance in the eyes of SME is not very positive. Therefore, the tendency to establish relations with them is largely limited. Due to the high importance of these two groups of entities, with which SMEs most often cooperate for further analysis, these entities were mainly used.

An important element of the presentation of the OI concept is also an indication of the nature of the cooperation undertaken (formal and informal). In the first case, this means the tendency of entities to formalize relationships in the form of contracts or agreements in usually the written form. In the second, these relations are based on the "gentleman agreement", friendly contacts and do not take the official form in the written contracts (**Fig. 3**).

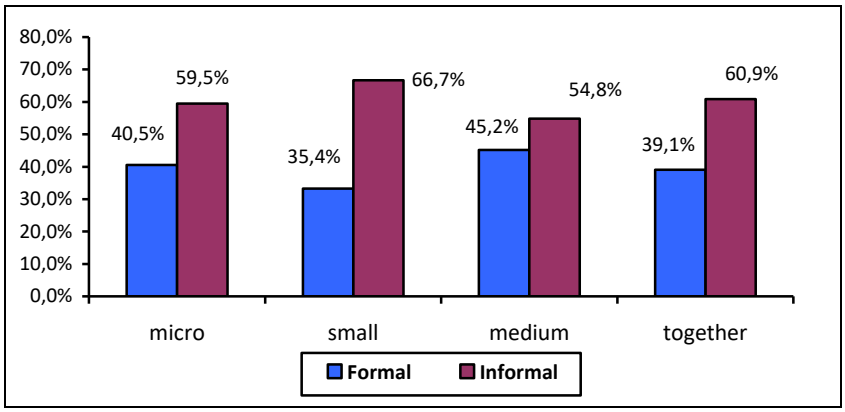


**Fig. 3.** Type of relationship within the OI

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J.2018, „Open innovation …", op. cit.

The above data indicate a general advantage (in all groups of enterprises) of informal relations over formal ones (respectively: 60.9% and 30.1%). Small enterprises (micro and medium enterprises) are characterized by a larger share of informal cooperation (59.5% and 66.7%) than medium-sized enterprises (only 54.8%). This change is probably due to the fact that these entities among SMEs are leaders in innovation solutions, and they just make the greatest transfer of knowledge and new solutions to the environment. Hence, a larger number (and share) of contracts and agreements entered into in a formalized form.

*4.2. Open innovations as a determinant of SME development*

The concept of determinants is related to the "factor affecting something in a fundamental way". It practically boils down to two variables: **an explanatory variable** and **an explanatory variable**. This article assumes that the first one is innovation development and the second is open innovation. In addition, it was assumed that the impact is entirely positive, which, in a narrower sense, can mean perception of open innovations as a stimulus for this development.

The first stage of the analysis is the answer to the question: **do small and medium enterprises realistically assess OI as a determinant (stimulator) of its development**? The following data will answer this question (**Fig. 4**).

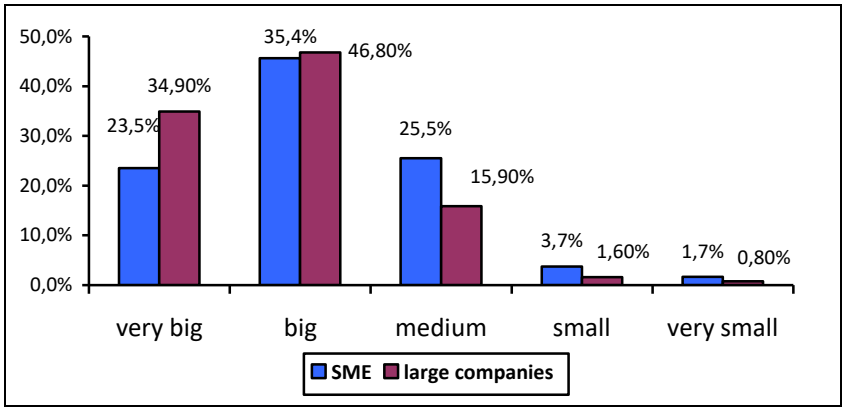


**Fig. 4.** Evaluation of the importance of OI for the surveyed SMEs

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J.2018, „Open innovation …", op. cit.

The vast majority of surveyed entities among the discussed SMEs pointed to "big significance" OI for its innovation development (in the case of cooperation with other SMEs, the assessment was over 35%, and in the case of large enterprises over 48%). On the other hand, when comparing 'very big' and 'medium' evaluations, it can be pointed out that in the first situation a significant advantage is on the side of cooperation with large entities (34.9% compared to 23.5%), while in the second case discussed this advantage is in favor of SMEs (25.5% to 15.9%). Based on these data, it should be noted that small and medium-sized enterprises value cooperation with large entities more highly in their assessment of "very big" importance, while the cooperation is more important in the assessment of "medium" with other (similar) entities. This is undoubtedly a consequence of the opportunities offered to them by cooperation with large enterprises in the scope of acquiring external resources, i.e. knowledge. Large entities (if they only want to cooperate to other in the environment) allow SMEs to develop more, because they run their own R & D activity and they can be a rich source of potential knowledge and thus better and bigger development of small and medium-sized enterprises. On the other hand, other SMEs in this respect are a slightly worse (more difficult) partner in the exchange of knowledge, because in many situations these enterprises treat themselves as a threat (rival) with whom it is only necessary to compete (there is no coopetition in their market behavior). Nevertheless, the huge advantage on the side of "positive" assessment: "very big", "big" and "medium", it makes clear

that the answer to the above question is also positive. **Open innovations should be seen as a determinant (stimulator) of innovative development of SMEs in Poland**, although within them there is a diversification regarding the assessment of the importance of the level of cooperation between the various types of entities with which this cooperation is established.

The next stage of the analysis concerning the evaluation of OI for innovative development among the discussed SMEs in Poland, it is the answer to the question about **the functions that these entities most often carry out as part of the cooperation undertaken in the environment**. The first place is the function of "supplier and / or recipient" of materials, technologies or ready-made solutions (68.8% of respondents) related to vertical relations. Subsequent positions occupy functions involving horizontal relations, where entities in the environment play the role of development partner (19.6% of respondents), implementation partner (15.0% of respondents), marketing partner (9.4%) and service partner (20.0%) ), which is related to the provision of certain activities for the client (insourcing or outsourcing of services) (**Fig. 5**).

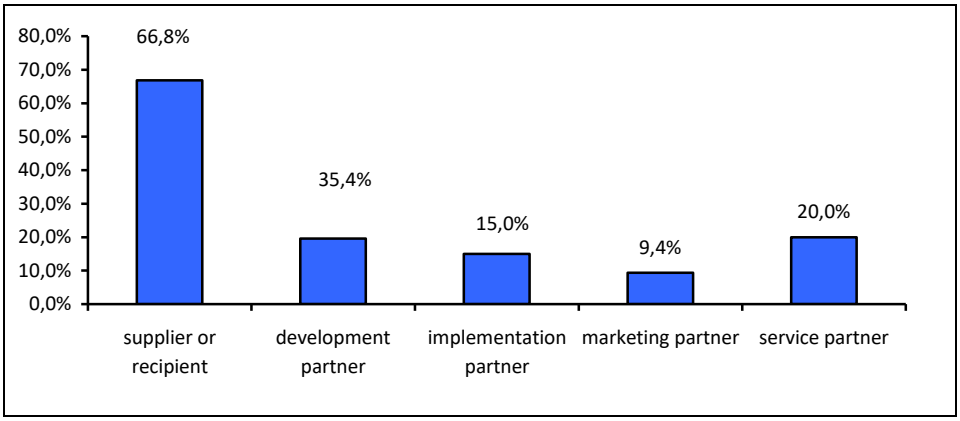


**Fig. 5.** OI functions for the surveyed SMEs

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J.2018, „Open innovation …", op. cit.

Such a large advantage on the side of vertical relations in relation to the others is undoubtedly due to the lack of sufficient internal resources among SMEs. This means that these enterprises are forced to look for ready-made solutions, technologies that will ensure their development in the long-term. On the other hand, practical functions are important among horizontal relations, where the partner is treated as the "potential" of future competitive advantage (development partner, implementation partner) provided that innovations in general are perceived as one of the main factors directly or indirectly related to the improvement of the market situation companies. Therefore, it can be noted that the **functions most often performed by SMEs in the environment within the IO are associated with a practical approach, where the environment is treated as a "reservoir" of necessary resources needed for the development of these enterprises.** That's why, they have a resource character, whose resources are available in the long-term (and often unlimited in the opinion of the entities) and deriving them (although depending on the will of the partners) creates enormous opportunities for enterprises to expand. It allows, to put forward a thesis in the mind of which **OI is treated as an important determinant of the discussed innovative development of SMEs.**

The third stage of the analysis is the presentation of goals that are related to the use of OI among the surveyed SMEs. Therefore, six such objectives were identified: creating a new product, improving the existing product, creating new technology, improving existing technology, introducing marketing changes and introducing organizational changes. The fundamental question that is implied in this point of analysis is related to **obtaining the answer to the significance of the discussed OI concept from the point of view of the discussed innovative development**. In other words, the obtained answers are

used to indicate what the concept in question is used by SMEs in this development. The following data shows the shares (averages) for indications referring to the aforementioned goals, broken down into a five-point scale (from very big to very low significance) (**Fig. 6**).

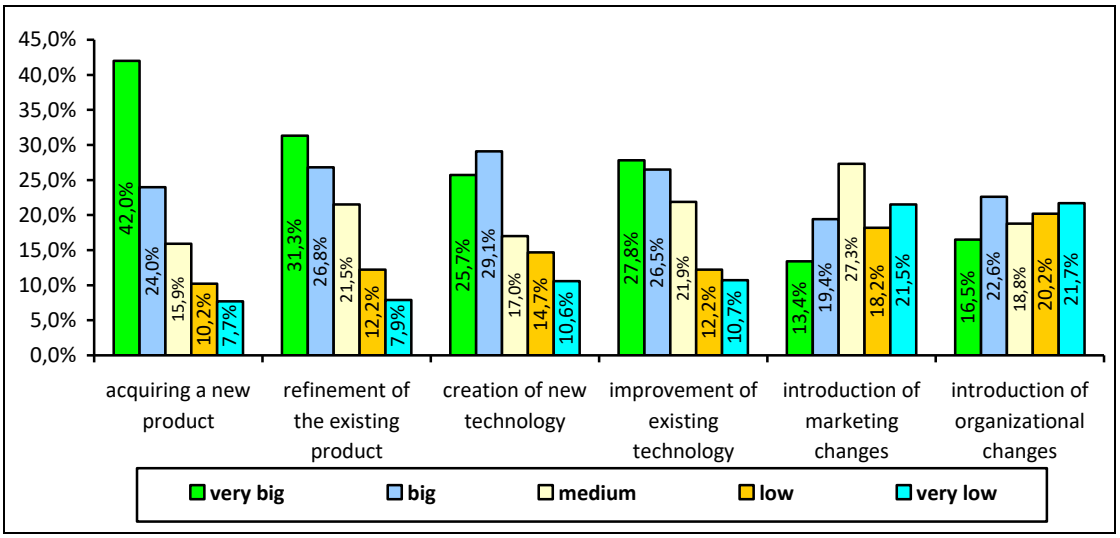


**Fig. 6.** The importance of the goals of using OI by SMEs in Poland

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J 2018, „Open innovation …", op. cit.

The above data allows to draw some important conclusions. First of all, open innovations determine to the greatest extent (affecting positively) of the innovative development through the implementation of two types of goals indicated above. One of them concerns products, both in relation to the novelties created in this scope (assessments of the meaning "very big" and "big" respectively at the level of 42% and 24%), as well as their improvement (evaluation of the meaning "very big" and " big "31% and 26% respectively of respondents' responses). The advantage on the side of "new products" indicates that enterprises are more focused on acquiring from the environment and implementing ready-made solutions than incurring expenditure on their improvement. In turn, the second conclusion, which arises, concerns the next element, ie technology. However, in this case it seems to be slightly more important to make changes by improving existing solutions, because more of the surveyed entities indicated the "very big" significance (the difference is about 2 percentage points). This is also confirmed by the cumulative statement of positive responses (very big, big and medium), where the share of this "advanced technology" total is 76.2% of the response. In the case of "new technologies", it is slightly smaller and amounts to 71.8% of responses. In conclusion, it should first be noted that in the case of products, in principle, SMEs focus their attention on the implementation of new products, while in the second - on the improvement of existing technologies. Secondly, when comparing "product" and "process" objectives, it can be emphasized that there is an advantage on the product solutions side of the process (taking into account the answers: very big and big). Therefore, considering the above two conclusions, it can be argued that **SMEs making decisions in the field of innovative implementations and their development are guided by time and thus willingness to achieve benefits as soon as possible at the expense of lower expenditures and implementations characterized by lower risk of market failure (advantage of ready solutions)**. In addition, this confirms the lower tendency to adapt process solutions, the specificity of which is the need to wait for results in the long run and in many cases to carry out their own R & D activity, which is commonly known as time-consuming and labor-intensive.

The final stage is to analyze OI as a determinant of the development of innovative SMEs from the point of view of motivating factors. The **basic question that can be asked here concerns the**

**importance of motivating factors for the use of OI**, which, in the opinion of the respondents, determine the discussed innovation development to the greatest or the least degree. They were divided into two main groups. The first of them are internal motifs, the second one is external motifs. Numerical data showing both the first and the second group are presented below (**Fig. 7**).

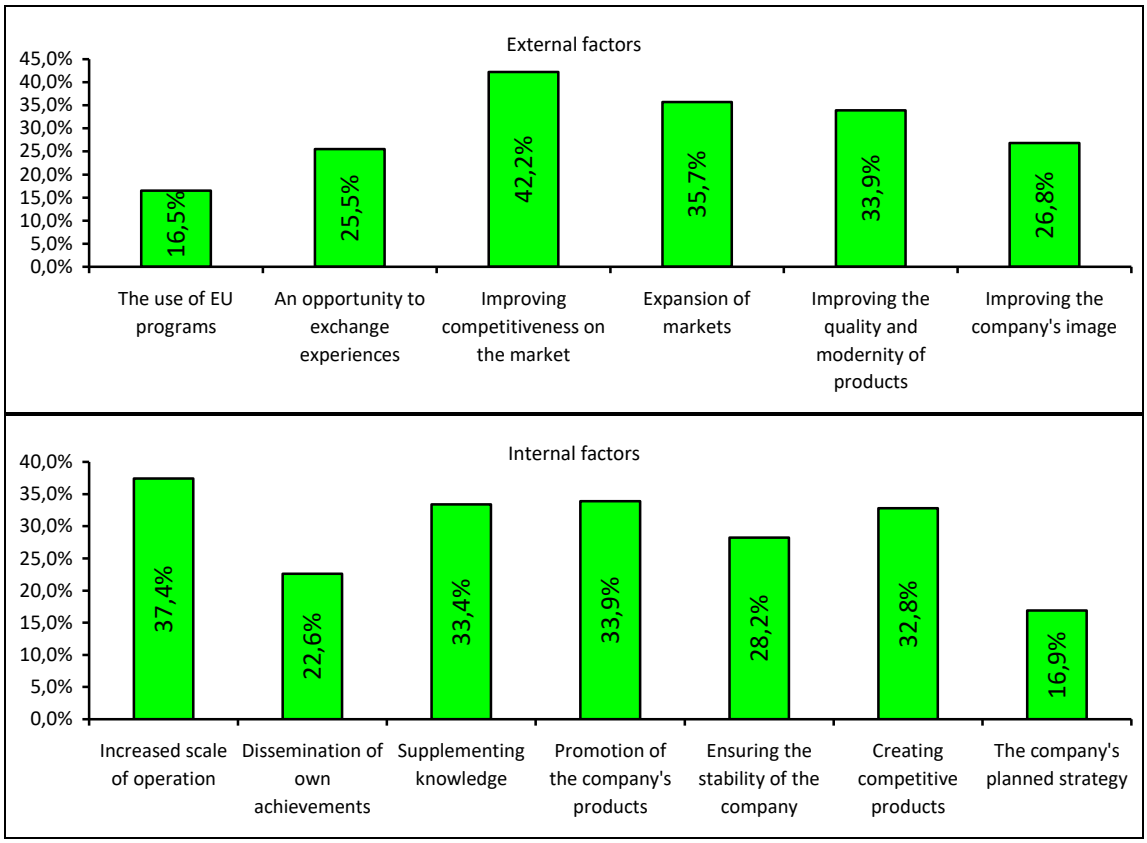


**Fig. 7.** Factors motivating the use of OI among SMEs

Source: own elaboration on the bases of: Stanisławski R, Szymański G, Trębska, J 2018, „Open innovation …", op. cit.

Analyzing the above data in the scope of motivating factors for the use of IO as determinants of innovative development, it should be noted that in the first case (internal factors) there is no essential advantage on one of them. This means that all of them are equally important for the surveyed enterprises. Nevertheless, it can be pointed out that among the internal factors for the surveyed entities the "increase in the scale of operations" (37.4%) and "promotion of enterprise products" (33.9%) were the most important and the smallest "planned company strategy" (16.9%). In turn, in relation to the second group of (external) factors, diversification is much more visible. The first place is occupied by two factors, ie "improvement of competitiveness on the market" (42.2%) and "expansion of markets" (35.7%). The last place (the least important from the point of view of entrepreneurs) concerns the use of EU programs (16.5%), which means that currently the role of aid funds coming from the EU budget has fallen and that they are not treated by SMEs as the main source of financial resources serving the implementation of innovative solutions (for various reasons). Therefore, **it should be noted (considering two groups) that market stimulators are the most important and they have to improve the current (or future) situation of SMEs prevail in general terms.** Unfortunately, however, factors of a nature directly related to the development of innovation (eg dissemination of own achievements) do not have the most important meaning. This leads to the conclusion that innovation is not an end in itself for these enterprises. They treat it as a tool in a short term. If they see

the possibility of quick profit and return of expenditures, then their goals change and they focus more on innovative changes. This confirms the earlier thesis regarding the tendency of "quick effects" resulting from implemented implementations. This is worrying because it means that there is no strategic approach, which in the long-term perspective may bring negative effects for the discussed entities. It means a decline in competitiveness, and thus a market advantage of the analyzed group of enterprises (SMEs).

## 5. CONCLUSIONS

The analysis of OI as a determinant positively affecting the innovative development among the surveyed small and medium-sized enterprises allowed for the submission of several important conclusions. **First of all**, SMEs use the OI with two groups of enterprises to the greatest extent: other small and medium and large enterprises. They are, in SME;s opinion, the most valuable partners in cooperation. **Secondly**, in contacts with these groups, entities most often use informal relations - however, a certain exception there are medium enterprises, which as a result of the intensification of innovation activities in the environment prefer the formal nature of contacts. **Thirdly**, it can be noted on the basis of numerical data that SMEs will positively assess OI in the process of developing innovation enterprises in Poland. Therefore, it can be concluded that this concept can be seen as a determinant (stimulator) of this development. F**ourth**, MSP most often use OI for vertical contacts, where the environment plays the role of a supplier or recipient of innovation solutions. Much less often between entities there are horizontal relations among ones, contacts are the most important related to acquiring the necessary resources in the environment (resource intake) and related to the implementation of existing ready solutions in the environment (practical approach). **Fifth**, in practice SME most often use OI to acquire product and process solutions in the environment. The dominance of these two groups results from the pragmatic approach of willing to implement quick implementations, i.e. those that are characterized by large profits in the short term and low expenditures. Hence, the advantage on the side of "new product solutions" at the expense of process solutions. In addition, these companies prefer "new products" and "modernized technologies", which is proof of the lack of interest in incurring too much expenditure on innovation on the one hand, and on the other hand, having too small financial resources, especially by micro and small enterprises. **Sixth**, among the factors motivating to use the concept of OI in practice, there is no clear diversification in the general sense, especially in relation to internal factors. In the case of external factors, the diversity is slightly larger. However, taking into account both the first and the second one, it can be concluded that market factors prevail which are not directly related to the innovation development. This confirms the thesis that companies treat innovativeness as a tools. They use innovations when they have the prospect of profit (most often) in the short term. This approach is legitimate on the one hand, and on the other proves the lack of a strategic approach to its development. It is common knowledge that innovation is one of the main elements of raising its competitiveness on the market. This approach over time may result in Polish SMEs becoming less competitive on the world stage.

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