ACTA SCIENTIARUM POLONORUM *Oeconomia 7 (1) 2008, 5–14*

# THE LEVEL OF INNOVATIVENESS IN POLAND ON THE EXAMPLE OF ENTERPRISES FROM THE WARMIŃSKO-MAZURSKIE VOIVODSHIP

Agnieszka Biernat-Jarka, Ewa Grzymska
Warsaw University of Life Sciences – SGGW, Poland

**Abstract.** The main aim of the conducted research, which results are presented in this article, was to show the state of innovativeness among SME's entrepreneurs from the warmińsko-mazurskie voivodship. In the article there are also presented the entrepreneurs' opinions concerning implemented innovations, the plans of implementing the further innovations and on the other side the barriers of implementing innovative solutions and the lack of the entrepreneurs' knowledge about the form of public support in increasing the level of innovativeness.

**Key words:** SME's sector, innovativeness, innovations

## INTRODUCTION

The sector of small and medium-size enterprises is the basic sector of the developed economies. This is the sector, which is developing the fastest and, concerning its attributes, conforms the fastest to the changing conditions which occur in economy. Those firms are establishing the most work places and are the motor of economy increase. After the Polish access to the European Union, entrepreneurs from SME's sector have had the opportunities to benefit from various programmes and projects, which target is to increase their competitiveness. Nowadays the usage of innovative solutions by the entrepreneurs is becoming more and more important. The increase of innovativeness and advanced technologies meaning as the factors which determine the economic process is the main attribute, characteristic for contemporary economy. The state of enterprises innovativeness is mostly determined by the ways of economic development. Implementation of processing, technological and organizational innovations is an opportunity to decrease productions costs and increase products quality. However, the innovative activity needs creating an

Corresponding author – Adres do korespondencji: Agnieszka Biernat-Jarka, Warsaw University of Life Sciences, Departament of Agrarian Policy and Marketing, Nowoursynowska 166, 02-787 Warsaw, Poland, e-mail: biernat-jarka.agnieszka@wp.pl

effective and appropriate national support system. It has already existed and developed and that is why there is a need to inform entrepreneurs and encourage them to benefit from the EU funds.

## RESEARCH METHOD AND MATERIAL SOURCES

The research was carried out in November 2007 on the sample of 61 entrepreneurs from the warmińsko-mazurskie voivodship, with the usage of a questionnaire form. The findings give the base to infer in quantitative and qualitative character and most information was analyzed in relation to firm's time existence, employment, sales, legal form of activity, the place of activity and activity range.

The questionnaire form included three thematic elements:

- opportunities of innovating,
- the extent of benefiting from public funds,
- the reasons why the innovations were not implemented.

On the base of the research results there were attempts to answer the following questions:

- How did the entrepreneurs assess the level of innovativeness in their firms?
- Did they implement innovations, are they going to implement them in the future?
- What are the costs of implementing innovations, do the entrepreneurs use public funds to achieve that purpose?
- What are the barriers of innovating?

The respondents chosen to the research were conducting business activity in SMEs sector in the warmińsko-mazurskie voivodship. The respondents were the clients of the Consulting Points from the warmińsko-mazurskie voivodship. So the selected sample was chosen to the research.

The Consulting Points (PK) function as first contact institutions for small and medium-size entrepreneurs. There are almost 200 PK's in the whole country. The information, which small and medium-size entrepreneurs can gain, concerns the basic issues about business activity and enterprise management and also the accessible support instruments for entrepreneurs.

## THE CHARACTERISTIC OF THE RESPONDENTS

The research, concerning the level of innovativeness, had been carried out on the sample of 61 enterprises from the warmińsko-mazurskie voivodship, with the usage of the questionnaire form. In the selected sample there were 36.1% microenterprises – employing up to 9 employees, 27.9% small enterprises – with employment from 10 to 49 persons and 36.1% medium-size, with from 50 to 249 workers. The big enterprises were not taking part in the research.

The majority, because up to 60.7% enterprises taking part in the research, have been conducting business activity for more than 8 years. The smallest group of firm were these, which have been operating on the market for the shortest time, that was less than one

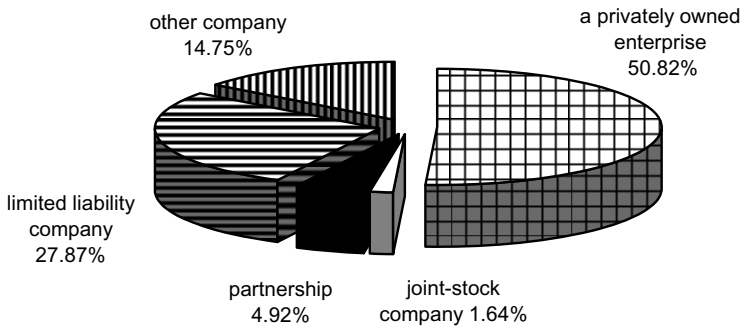


Fig. 1. Respondents structure in relation to legal form of enterprises
Rys. 1. Struktura respondentów ze względu na formę prawną przedsiębiorstwa
Source: Own study based on the research results.
Źródło: Opracowanie własne na podstawie wyników badań.

year – they constituted 1.64%. The entrepreneurs operating more than 5 years constituted almost 87% from all respondents taking part in the research.

Among the researched population the majority constituted the privately owned enterprises. Almost 30% constituted limited liability companies, and almost 15% represented other companies. The smallest group consisted of respondents who represented joint-stock companies.

The most enterprises, which took part in the research, operate on the regional market. Not much less operate on the European area. Only 11.4% of enterprises operate on the local or global market. In case of the company location, respondents the most often pointed out city with more than 50 000 residents.

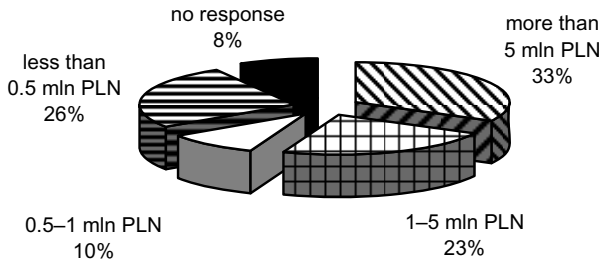


Fig. 2. Respondents structure in relation to achieved sales
Rys. 2. Struktura respondentów ze względu na osiągane obroty
Source: Own study based on the research results.
Źródło: Opracowanie własne na podstawie wyników badań.

It was a difficult question in research to point out sales. Almost 8.5% firm owners did not want to reveal their sales. Sales over 5 million PLN pointed more than 32% respondents. About 26% of them gave the information about sales not exceeding 0.5 million PLN a year, 23% of researched enterprises had the turnover in the 1 to 5 million PLN range, whereas in the 0.5 to 1 million PLN almost 10%. Therefore, it was a very diversified group of respondents, what gives the opportunity to get interesting research results and lets to make a deep analysis.

## THE KIND AND COSTS OF IMPLEMENTED INNOVATIONS IN SME'S

The innovations give to entrepreneurs significant development opportunities. They are reflected in producing new products, using new production methods and also company expanding into new markets and using new sales ways. Growing labour costs, which grow faster than labour productivity, cause that Poland is no more competitive in that scope in relation to other countries. That is why conducting innovative activity is a chance for entrepreneurs as well as economy.

Taking into account the level of modernity and also the fact that the majority of SME's are not able to implement innovations, the European Union supports entrepreneurs' innovativeness. It is very important for entrepreneurs to realize about the necessity of implementing improvements in firms and benefitting from the support.

More than 85% entrepreneurs consider their firms as modern, however only just under 82% researched companies confirmed implementing innovation over the last three years. All respondents representing medium-size firms, that is those which employ from 50 to 249 workers, consider their firm as modern. More sceptical are the representatives of smaller firms, where the opinions are divided almost in half.

Among entrepreneurs considering their firm as modern there are 42.3% of medium-size firms, 25% of small and 32.7% of microfirms. In this group 61.5% of firms has been operating longer than 8 years and 17.3% from 5 to 6 years. Entrepreneurs, who have a different view about the firm modernity, are the respondents operating longer than 8 years – 55.6% and 33.3% from 7 to 8 years.

From among entrepreneurs who over the last three years implemented innovation, 35 implemented product innovation, 34 process innovation, 16 organizational and 6 marketing innovation. Only in 5% of the cases, firms implemented all kinds of innovations. Very often, because in 36% of the cases, product and process innovations were implemented at the same time.

The most (57%) of respondents pointed out, that product innovation had been implemented in their firm. The similar situation is with process innovation. The least number of respondents implemented marketing innovations. It is interesting that all firms,

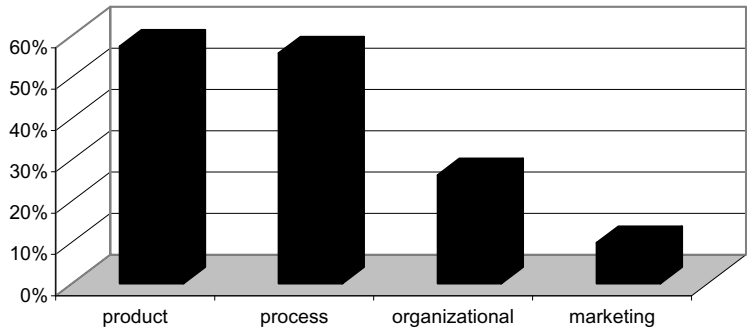


Fig. 3. The proportion of firms, which had implemented innovations
Rys. 3. Udział procentowy firm, które wprowadziły innowacje
Source: Own study based on the research results.
Źródło: Opracowanie własne na podstawie wyników badań.

which implemented marketing innovations at the same time implemented the organizational ones. The answers, which often were repeated, were about implementing product with process innovation – 36% answers. Pointing simultaneously process and organizational innovation considered only 3% of answers. Moreover, three kinds of innovation were pointed out by 18% of subjects, whereas four – by 5%.

The example of process innovation, which was pointed out by the respondent, was the implementation of computer software mHR. One of the firms implemented product innovation which was women's clothes with leather elements and process innovation – new way of preparing pre-productive documentation, technical-technological in clothes production which saves the maximum time, giving ideal repetitiveness (Computer System of Preparing Production).

The next interesting example of implemented innovation was the use of machine for laying a resin and gel coat over yachts production. According to the respondent, the product is a novelty on the market, because it joints the properties of tourist and racing yacht. One of the respondents implemented as much as six innovations, three product (environmental science map, hydrological map, software platform ARA.NET and MAPA. NET) and three process innovation (supporting computer system of production management "SOURCE FORCE", topographic database TPD, navigation system GPS for geodetic measurements).

Unfortunately, 15 respondents (25%), did not give the information about the costs of implemented innovations in firms. The majority of implemented product innovations were connected with spending money. The highest, spent on implementing innovation amount of money, was 9 million PLN, on the other side the smallest was 10 000 PLN. Average amount was 1533 100 PLN. The amount declared most often, because as much as 4 times, was 500 000 PLN. What is interesting, the biggest investments, over 1.5 million PLN, were made by medium-size entrepreneurs with sale over 5 million PLN. It is quite obvious that small firms are not able to spend such amounts on that kind of activity. But it is significant just to take innovative investments.

## USAGE OF PUBLIC FUNDS ON INNOVATIONS

One of the subjects mentioned in the research was the usage or applying for public support, connected with implementing innovations. Only one person among the respondents did not answer the question about financing the innovations from public funds. The public support in the spectrum of innovating was used mostly by medium-size entrepreneurs. They constituted 58% of all using the support and almost 30% of the respondents. The least number of companies using the support was in the group of small entrepreneurs.

Studying years of business activity it should be taken into account that the biggest number of THE entrepreneurs are those who has been operating more than 8 years, so this group is the largest. The research indicates that the entrepreneurs which have been established more than 7 years ago more often used the innovating support. Entrepreneurs, who have been operating the shortest time and those who functioning between 3–4 years, did not benefit from the support. In case of the firms existing from 1 to 2 years and from 5 to 6 years, twice as much as the others did not use the support funds in relation to those who were able to take the advantage of support.

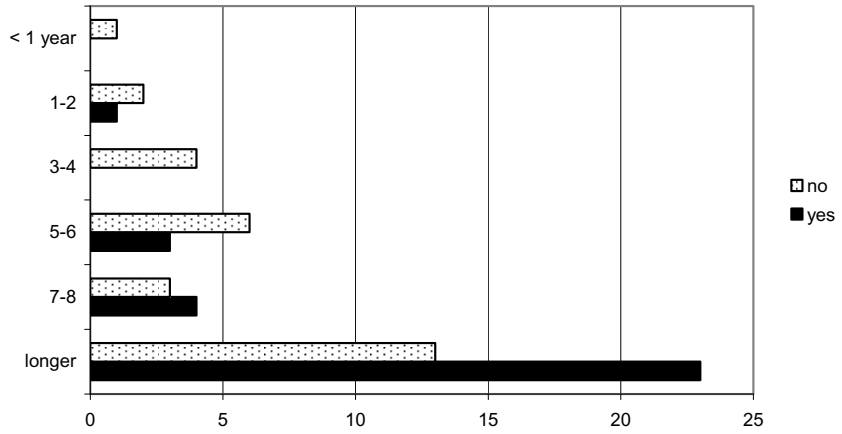


Fig. 4. The number of entrepreneurs using the public support funds in relation to the activity period
Rys. 4. Liczba przedsiębiorców korzystających ze wsparcia ze środków publicznych w zależności od okresu funkcjonowania
Source: Own study based on the research results.
Źródło: Opracowanie własne na podstawie wyników badań.

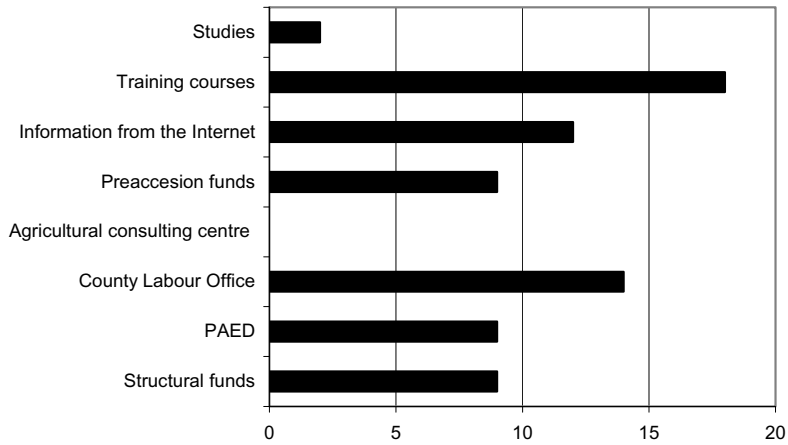


Fig. 5. The forms of support used by the entrepreneurs
Rys. 5. Formy wsparcia, z których korzystali przedsiębiorcy
Source: Own study based on the research results.
Źródło: Opracowanie własne na podstawie wyników badań.

Many of entrepreneurs, who had benefited from the support on the innovation implementing, pointed out different kinds of sources. Frequently the researched firms pointed the aid within the Phare programme, which was the pre-accession programme. Some entrepreneurs also benefited from the Structural Funds – Sectoral Operational Programme Improvement of the Competitiveness of Enterprises, 2.3 and 2.1. Little number of respondents pointed ZPORR 3.4, County Labour Office support and PFRON support.

In a few cases the entrepreneurs used more than one support source. The amount of investment fund was situated between 25 000 to 2.5 million PLN. The highest sum was received from SOP ICE 2.3 (from 350 000 to 2.5 million PLN) and the lowest from Phare (from 60 000 to 100 000 PLN).

One of the entrepreneurs, which innovating cost was 5 million PLN, used a wide public support. He used the grant on ISO audit certificate from Polish Agency for Enterprise Development where the cost refund amounted of 25 550 PLN, Phare 2000, from which he got the grant in the amount of 67 000 PLN on equipment and software purchased to the training room. What is more, from Phare ESC 2003 funds he got the grant in the amount of 63 900 PLN on the project "Increase the competitiveness of X firm on the market by enlargement of product offer" and from SOP ICE 2.3 he used the grant in the amount of 96 000 PLN "Increase the competitiveness of X enterprise by technological innovation".

The entrepreneurs often pointed out more than one support source. In ten cases they said about at least three sources, in 18 cases pointed two. The training courses, which were pointed by almost 30% of entrepreneurs who were put through an examination, were the most popular. An important role was played by the County Labour Offices whose offer was used by 23% out of firms.

## INNOVATING PLANS IN THE SME`S SECTOR FROM WARMIŃSKO--MAZURSKIE VOIVODSHIP

The results of the research show that lots of the entrepreneurs still did not implement innovations. However almost everybody declares that they will implement innovations in the next two years. That declaration was not submitted only by the two of the entrepreneurs, who constituted 3% of the population.

Another point raised in the research was the plans of using innovating support. Only three of entrepreneurs intend to finance the investment on their own, the 95% respondents want to use the chance of benefiting from the outside sources.

The majority of the researched entrepreneurs pointed out the barriers to implementing innovations and put them in order from the most to the least important. Analysis of the three most essential barriers shows that, according to entrepreneurs the most important were financial barriers, first of all too high innovation costs. The lack of appropriate financing source was also very important obstacle. According to entrepreneurs the barrier of implementing innovation could be too high economical risk. Another, discernible obstacles were law barriers, tax regulations, the lack of technological information and the lack of qualified staff, which could implement innovations and apply innovative solutions. The least essential for the respondents were the market barriers.

The most often pointed barrier of implementing innovations regardless of the kind of enterprise was too high cost of innovating. In case of micro and small enterprises this obstacle was pointed as the most important by more than 40% of respondents and 35% of small firms. For almost a quarter of the researched micro firms, the most important barrier was the lack of appropriate financing source and for 17.5% of small and 18% of medium--size enterprises the most important barrier was a lack of clarity of law regulations. According to entrepreneurs the innovating obstacle was also too high economical risk,

which could not be taken by them. It should be emphasized that more essential barrier for firms is the lack of technological information than the law regulation.

The researched entrepreneurs pointed out different kinds of barriers in relation to the business activity period. For those firms, which were operating for the shortest time and constituted the smallest group among researched population, the innovating barrier was its too high cost. Whereas for firms operating for the longest time the important barriers were also the lack of financing sources and too high economical risk.

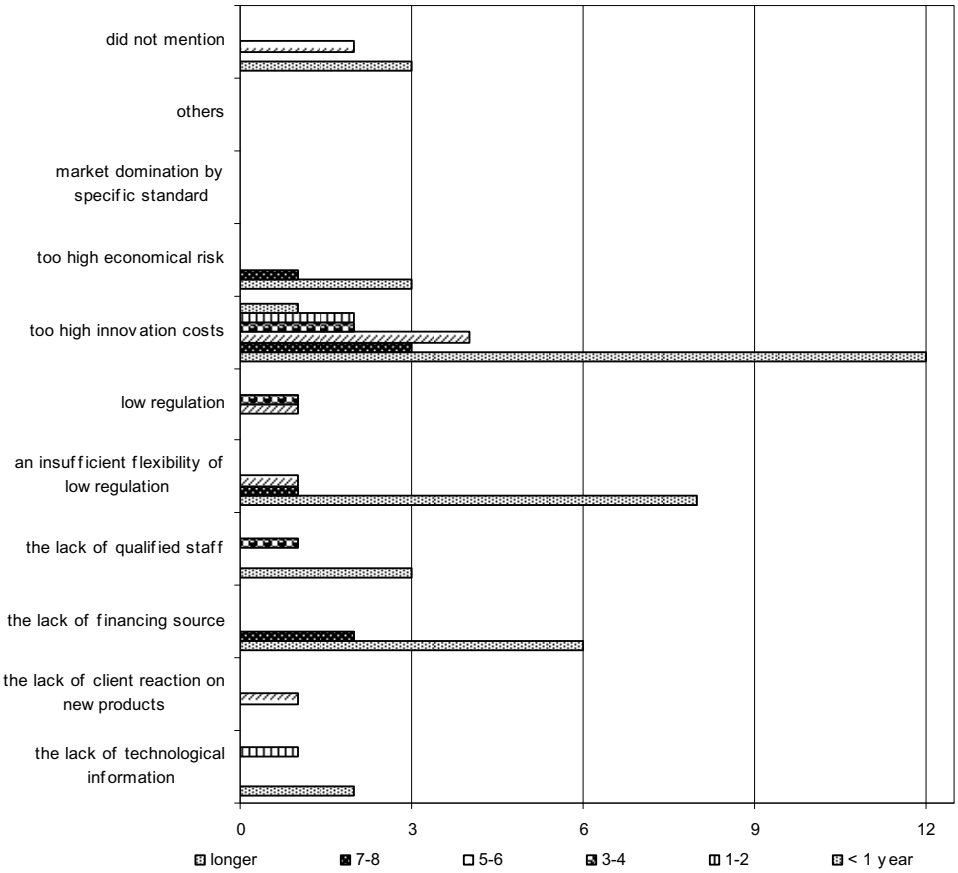


Fig. 6. The barriers of implementing innovations in relation to activity period of the enterprise
Rys. 6. Bariery ograniczające wdrożenie innowacji w zależności od okresu prowadzenia działalności przez firmę
Source: Own study based on the research results.
Źródło: Opracowanie własne na podstawie wyników badań.

The large firms have a bigger capital or are more creditworthy. That is why it is easier for them to implement innovative solutions, which are cost-effective and now constitute the most essential factor in increasing the competitiveness of enterprises. The representatives of small firms knowing that, are not able to finance the costs of innovations. That is

why the national and EU's politics are so important part in overcoming financial barriers, especially these which are consider as fundamental. The Structural Funds are a chance for firms from SME's sector and information on them should be systematically provided for those companies.

## SUMMARY

The small and medium-size entrepreneurs in Poland had been given a chance of the significant development after the economic transformation. Almost twenty years after this event it can be seen how significant is this sector in the Polish economy. There is lots of evidence in support of this thesis, starting from participation of these entrepreneurs in the total number of firms in Poland, through the employment in this sector, to the participation in gross domestic product.

So far, SME's sector in Poland was competitive on the global markets with low work costs. Nowadays the crucial role in firms and economy is being played by the innovativeness. However, the mechanisms which encourage innovative activity are poorly developed in Poland. Statistics data shows, that the level of economical innovativeness in Poland is lower than in the other EU countries.

Conducted research shows that entrepreneurs are willing to implement the innovations and they are thinking of using public funds. Unfortunately they do not have enough knowledge about opportunities of getting support, what provides the imperfection of information and promotion politics. Entrepreneurs should be contributed in the complicated process of implementing the innovative solutions and be assisted in overcoming all the obstacles. The support used from the 2.1.1 SOP ICE shows that companies are interested in benefitting from the structural funds for the innovative investments, predicted for the years 2006–2008. The goal of these investments was to create permanent competitive advantages on the global market, increase the products quality, introduce new products or use new production processes. In the new financial perspective for years 2007–2013 the supporting instruments for the innovative business activity have the greatest share among all.

Researches reveals that the products and processes innovations were mostly implemented and the half of the respondents used public support to finance innovations. Most of the respondents declared the willing of implementing innovations in the two years period among with the usage of the public funds for support. In the same time, entrepreneurs pointed out financial barriers as the main obstacles, meaning too high costs of innovations and lack of appropriate innovation financing. This shows that the utilization of support from the structural funds is the greatest chance for developing innovativeness in the SME's sector.

## REFERENCES

Baruk J., 1992: Innowacje czynnikiem efektywnego rozwoju przedsiębiorstwa (aspekty ekonomiczno-organizacyjne), Wyd. Uniwersytetu Marii Curie-Skłodowskiej, Lublin.

Encyklopedia Biznesu, 1995. Fundacja Innowacja, Warszawa.

Matusiak K. (red.), 2005: Innowacje i transfer technologii. Słownik pojęć, Polska Agencja Rozwoju Przedsiębiorczości, Warszawa.
Pangsy-Kania S.: Poziom innowacyjności polskiej gospodarki w kontekście narodowego systemu innowacji, http://ekonom.univ.gda.pl/mikro/konferencja/pdf/Pangsy-Kania%20Sylwia1.pdf
Pomykalski A., 2001: Innowacje, Wyd. Politechniki Łódzkiej, Łódź.
Raport Nauka i Technika w 2005 r., 2006. Główny Urząd Statystyczny, Warszawa.
Sosnowska A., Łobejko S., 2006: Małe i średnie przedsiębiorstwa w Polsce w warunkach konkurencji [w:] Pozytywy i trudności w rozwoju, Polska Agencja Rozwoju Przedsiębiorczości, Warszawa.
Stawasz E., 1999: Innowacje a mała firma, Wyd. Uniwersytetu Łódzkiego, Łódź.

## POZIOM INNOWACYJNOŚCI W POLSCE NA PRZYKŁADZIE PRZEDSIĘBIORSTW Z WOJEWÓDZTWA WARMIŃSKO-MAZURSKIEGO

**Streszczenie.** Głównym celem przeprowadzonych badań, których wyniki przedstawiono w niniejszym artykule, było pokazanie stanu innowacyjności firm z sektora MSP, działających na obszarze województwa warmińsko-mazurskiego. Zaprezentowano także opinie przedsiębiorców, dotyczących wdrażanych przez nich innowacji, planów wdrożenia kolejnych, a z drugiej strony barier wprowadzania innowacyjnych rozwiązań i niewiedzy przedsiębiorców na temat form wsparcia w zakresie wzrostu innowacyjności.

**Słowa kluczowe:** sektor MSP, innowacyjność, innowacje

Accepted for print – Zaakceptowano do druku 30.03.2008