

TOMASZ CZAJKOWSKI*

The Influence of the European Union Funds on the Development of the Electronic Business Sector in Poland

Abstract

The article presents the analysis of the results of research concerning the influence of the European Union funds from the Operational Programme Innovative Economy (“PO IG – Program Operacyjny Innowacyjna Gospodarka” in Polish), measure 8.2. supporting B2B in electronic economy and measure 8.1. supporting economic activity in the range of electronic economy (eServices), on the development of the electronic business sector in Poland. Such important aspects as the innovativeness and competitiveness of the surveyed companies and their cooperation with the Implementing Institution – Polish Agency for Entrepreneurship Development (PARP – Polska Agencja Rozwoju Przedsiębiorczości in Polish) are covered. The conclusions from the research and the recommendations concerning the improvements for the future work and cooperation of the Implementing Institution of the financial support with the enterprises are also presented.

1. Introduction

The utilization of the ICT technologies for the economic activities affects the overall outlook of the global economy in a higher and higher way. The

* Ph.D., Technical University of Łódź, Faculty of Material Technologies and Design of Textiles

revolution of the information and communication technologies is being compared to the industrial revolution from the end of the XIX century, and the ICT were qualified by the scientists as the General Purpose Technology (GPT) in the same degree as the systems of energy supply (electricity or steam) or the transportation innovation (railway and cars). A broad utilization of ICT in the economic and social fields shaped what is presently being referred to as the 'New Economy'¹, and the directions of changes in the world economy occurring in recent years show the transition from industrial era economy to knowledge-based economy (Dworak 2010, pp. 6).

The policies of the European Union support the development of the ICT (the information and communication technologies) and the electronic business, which is connected with the ICT, in the highest possible way, due to the fact that these sectors are seen as vital to the EU economy, as a greater use of ICTs in all sectors in the economy helps firms to increase their efficiency² (European Commission. They are also reckoned as one of the sectors that can help the EU to become the most competitive economy in the world (so in other words to fulfill the renewed Lisbon Strategy)³. Moreover it can be assumed that the growing importance of the electronic commerce can decrease in some way the negative influence of the crisis on the global economy (Czajkowski 2011, pp. 76). That is why millions of Euro are spent each year in order to encourage the economic growth in those sectors and the Digital Agenda for Europe (DAE), which is one of the seven flagship initiatives of the Europe 2020 Strategy, was started by the European Commission. It defines the key role of Information and Communication Technologies (ICT) for Europe to succeed in its ambitions for 2020. The objective of this Agenda is to chart a course to maximize the social and economic potential of the ICT, most notably the internet, a vital medium of economic and societal activity: for doing business, working, playing, communicating and expressing ourselves freely⁴.

A similar trend, concerning the development of ICT and e-business, is also observed in Poland. However the Polish realities are still different from those of the more developed countries and the money invested are not always spent in an appropriate way or the results of investments are not as positive as

¹ 'Information Economy Report 2007-2008, Science and technology for development: the new paradigm of ICT', United Nations, New York and Geneva, 2007.

² 'i2010 High Level Group, The economic impact of ICT: evidence and questions', European Commission Report 2006.

³ 'i2010 – A European Information Society for growth and employment', COM(2005) 229 final, Brussels, 1.6.2005.

⁴ 'Competitiveness and Innovation Framework Programme (CIP)', ICT Policy Support Programme, ICT PSP Work Programme 2011.

they should be in some cases. That is why it was decided to perform the research of the influence of the European Union funds on the development of the electronic business sector in Poland, to analyze the results of that research and to verify if the research hypothesis: 'The wide possibilities of applying for financial support within European Union funds can contribute to the development of e-business sector in Poland, which enables entrepreneurs to reach new customers and increase the sales, turnover and profit, at relatively low cost of investments', which was set for the purpose of the research, is true. The survey research was performed by Katarzyna Kopycka as part of her master thesis, which was written under the supervision of PhD Tomasz Czajkowski and PhD Aleksandra Januszkiewicz.

2. Methodology of the research

The verification of the hypothesis was done on the basis of the research conducted on the sample of Polish enterprises from the electronic business sector. The sample's selection was based on the database of companies, which applied for the financial support from the **OP IE (Operational Programme Innovative Economy)** priority axis VIII. This priority axis of the OP IE is connected with the information society and increasing innovativeness of the Polish economy. Its main goal is to stimulate the development of the digital economy through supporting the creation of new, innovative eServices, innovative electronic solutions for businesses and the reduction of technologic, economic and mental barriers for using eServices in the society. Under this priority axis the following measures can be distinguished:

- 8.1. Support for economic activity in the range of electronic economy – eServices;
- 8.2. Support for implementation of electronic business – B2B;
- 8.3. Counteracting Digital exclusion – eInclusion;
- 8.4. Ensuring Internet access at the 'last mile' level⁵.

The companies selected for the research received the financial support from the measures: 8.1. and 8.2., and their data were taken from the database of the Polish Agency for the Enterprise Development (in Polish: PARP- Polska Agencja Rozwoju Przedsiębiorczości)⁶.

⁵ <http://www.parp.gov.pl>, information obtained in August 2010

⁶ <http://www.web.gov.pl/bazy-wiedzy/>, data obtained in August 2010

The allocation for the VIII priority axis of Operational Program Innovative Economy amounts in total to almost 1,416 billion Euro, which is equal to 15% of all the funds devoted for the whole OP IE. In terms of the size of funds it is the second biggest priority axis. According to the data from the detailed description of the programme, almost one third of these resources (32%) is designated for measure 8.2. supporting B2B in electronic economy, and 28% for measure 8.1. supporting eServices. Therefore, from the point of view of importance for the e-business sector development, these are the most crucial measures of the priority axis VIII, that allocate 60% of all financial resources. The total amount devoted for them is equal to 851 million euro. That was one of the reasons why it was chosen to analyze the companies that received the support from these measures, the second reason being the fact that the measures 8.1 and 8.2 have the greatest direct influence on the activities of the companies and also on the Polish economy as a whole⁷.

The research was based on the questionnaire prepared on the basis of a thorough analysis of the reports of the European Commission and of the literature sources, among others the world's leading books concerning the electronic business – Laudon, et. al. 'E-commerce. Business. Technology. Society. Third edition' 2007 and Turban, et. al. 'Electronic Commerce 2006, a managerial perspective', and which was sent to the respondents in the electronic form. The questionnaire was divided into two parts. The first part contained questions about entrepreneurs' aims and difficulties in obtaining funds from the European Union, while the second one examined results of the utilization of the EU funds. The goal of the survey was to gather the essential information for analysis of the EU funds' impact on the development of e-business sector in Poland.

The database, from which the companies' data were taken, contained information about companies from different branches of electronic business that received the financial support⁸. Although, it accounted for almost 1200 companies, only just half of them included the data containing e-mail address or a website. Thereby, the total amount of companies, to which the questionnaires were delivered, was equal to 554. The e-mail with the questionnaire contained also an attached cover letter, which included the basic information about the goal of the carried out survey. In order to increase the number of companies willing to fulfill the survey, the cover letter ensured the confidentiality of data provided by the companies and informed the respondents that the obtained information would be used only for the scientific purposes.

⁷ <http://www.parp.gov.pl>, information obtained in August 2010

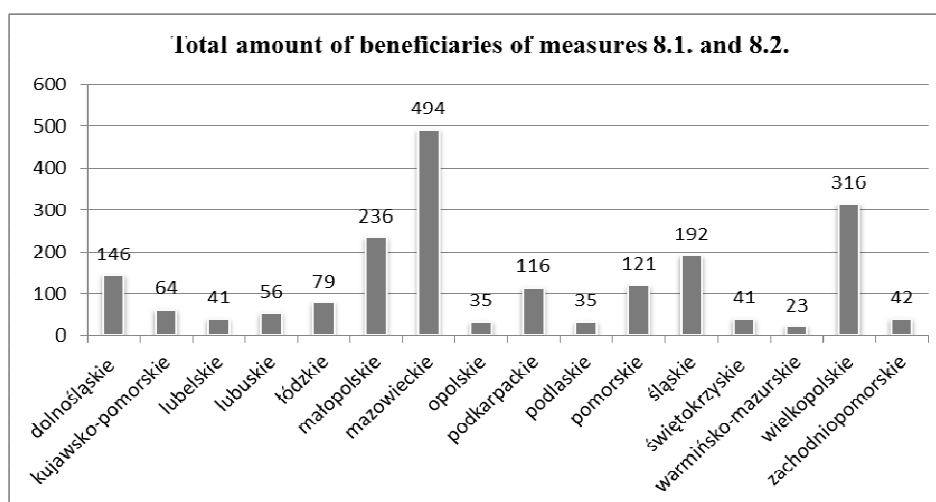
⁸ <http://www.web.gov.pl/bazy-wiedzy/>, data obtained in August 2010

Table 1. Realization of the survey research

Correctly fulfilled surveys	Percentage calculated in relation to the amount of all sent surveys (N=554)
44	7,94%

Source: Own calculations based on the analysis of the survey.

The questionnaires were sent to the respondents in August 2010. The total amount of correctly filled surveys received from the respondents was equal to 44, which gave 7,94% of the survey realization index, as it can be seen from Table 1. Such result is acceptable when taking into account the research performed with the help of the electronic mail. The regional division of the beneficiaries who received the financial support in the years 2008 and 2009 can be seen in Figure 1.

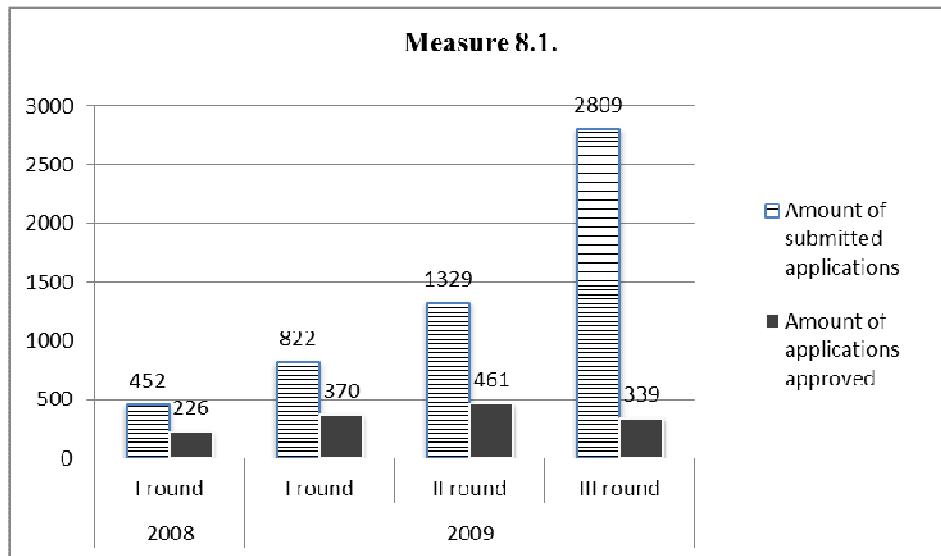
Figure 1. Beneficiaries of the measures 8.1 and 8.2 of the OP IE with respect to the region of Poland

Source: Own work based on the information from PARP.

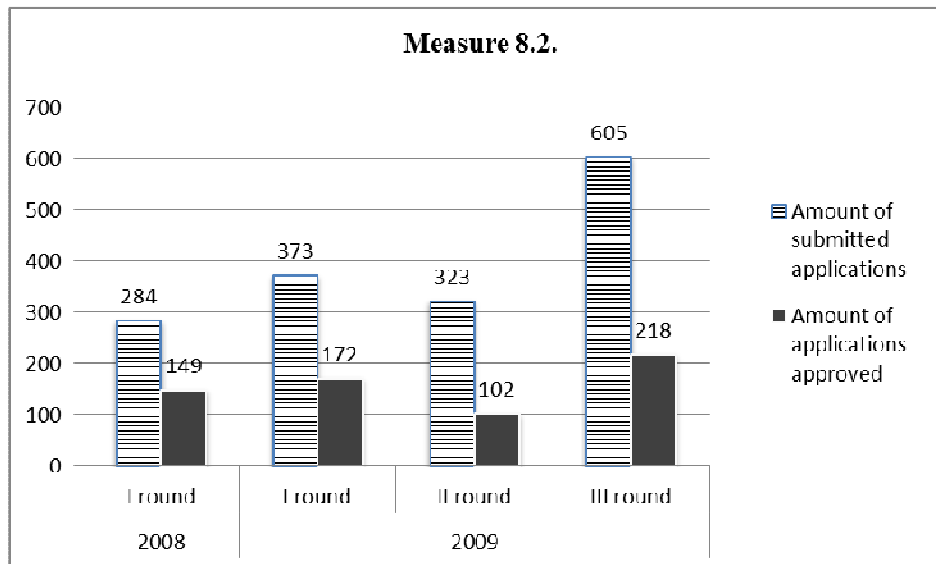
3. Results of the survey research

The research concerned the selection of companies that received the financial support within the priority axis VIII of the Operational Program Innovative Economy, and that was announced and completed in 2008 and in 2009. Therefore, the data only from these two years are taken into consideration in the article. The amount of project selections announced within particular years is different. In 2008 only one selection of applications was organized, while in 2009 3 selections were organized. Figures 2 and 3 present the amount of applications within the particular measures. In both cases, the amount of submitted applications had an increasing trend. Despite the fact that measures 8.1. and 8.2. demonstrated a huge interest among the potential beneficiaries, the amount of the approved applications did not increase at the same pace. It resulted from the limited financial resources designated for the projects within those measures and also from the quality of the submitted applications.

Figure 2. Submitted and approved applications within measure 8.1 of the OP IE



Source: Own work based on the information from PARP.

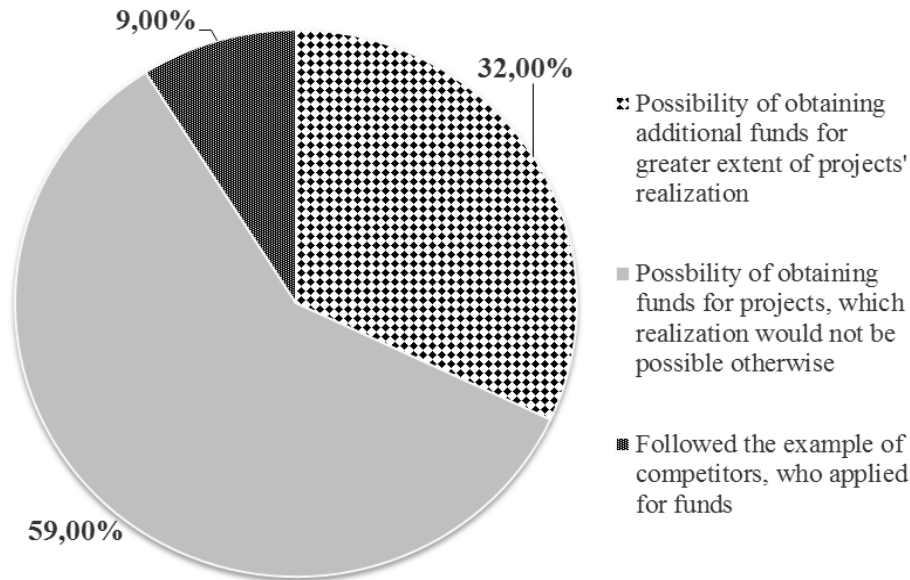
Figure 3. Submitted and approved applications within measure 8.2 of the OP IE

Source: Own work based on the information from PARP.

In terms of size, the great majority of the surveyed enterprises (92,86%) belonged to the group of micro companies, which employ up to 10 people. Only 7% of the respondents represented small enterprises, and there was none that represented medium or big companies.

4. Influence of the funds on the companies

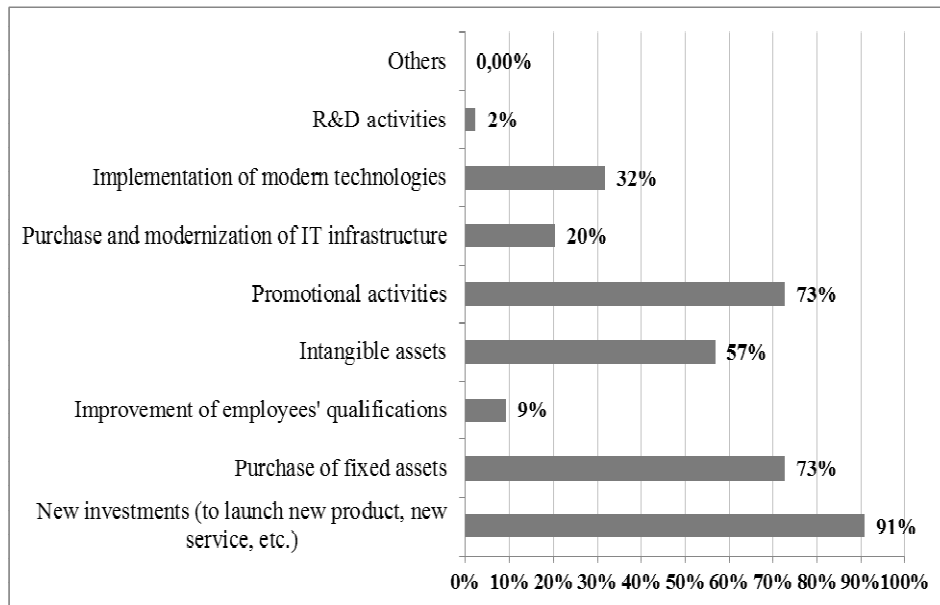
Among the companies, which benefited from the support, the main purpose to apply for these funds was the possibility to carry out projects, which could not be realized from their own resources (59% - see Figure 4). Another reason, which motivated the entrepreneurs to reach the EU funds, was the opportunity to implement their projects on a larger scale. This reason was indicated by 32% of respondents. Only 9% entrepreneurs answered, that they followed their competitors' example, who received financial resources from the EU. None of the respondents mentioned other reasons, although there was such a possibility.

Figure 4. Reasons for using the EU funds by the surveyed companies

Source: Own calculations based on the survey results.

Majority of the respondents (91%) answered that the primary objective, to which the received EU funds would be allocated, was the new investments connected with launching new products or services, 73% of the surveyed companies intended financial resources for promotional activities or fixed assets. More than half of them (57%) wanted to spend the money on intangible assets, 32% on implementation of modern technologies and 20% on the purchases and modernization of IT infrastructure. Only 2% of the respondents wanted to spend the obtained financial support on the R&D activities. The detailed data can be seen in Figure 5.

Figure 5. Aims at which the financial support obtained from the OP IE would be/where spent by the surveyed companies



Source: Own calculations based on the survey results.

As a result of implementation of the projects co-financed from the EU funds, in 77% of the surveyed enterprises new workplaces were created. In most of them (68%) there were created from 1 up to 5 new positions for employees, while 9% of the surveyed companies created 6 to 10 new workplaces. Only in the case of every fifth enterprise the EU funds did not cause any workplace's creation and 9% of the respondents did not reply to this question. None of the surveyed companies reduced their employment, so as a conclusion one can state that the EU funds from the OP IE encouraged the enterprises to create new workplaces in most cases, and increased the level of the overall employment in the Polish e-business sector.

It is an obvious fact that the most important aim of all the companies is to generate higher profits. It is done either by getting new customers or by increasing the sales to the existing ones. Both cases are connected with the increase in their turnover. In the case of the surveyed companies the EU funds helped them to develop their companies, and as a result to gain new clients. In 75% of the surveyed companies the financial support from the OP IE helped them to attract new customers, 15,91% of the respondents did not gain new

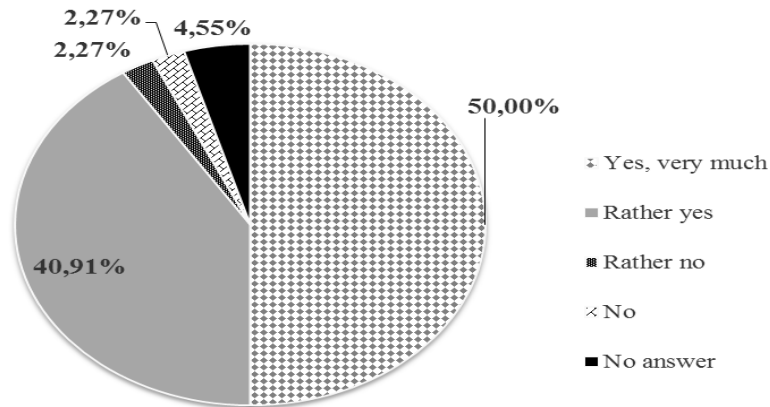
clients, and 9,09% of them did not reply to the question concerning the improvement in the number of their customers.

The companies were also asked about the value of their turnover after implementing the projects for which the support was granted. It appeared that in the case of 65,91% of the respondents, the turnover of their companies increased after they invested in new projects with money received from the EU funds. For some entrepreneurs, the period from the moment of receiving the financial resources up to the day of conducting the survey, was too short to assess, if the funds really changed the turnover of the company and that is why 11,36% of the respondents did not reply to the question about their turnover. However, every fifth of the respondents claimed, that the obtained funds did not influenced their turnover.

All in all, after receiving such results of research, it can be stated that the OP IE financial support in the case of the e-business sector was helpful to the enterprises and allowed to gain another argument for confirmation of the research hypothesis.

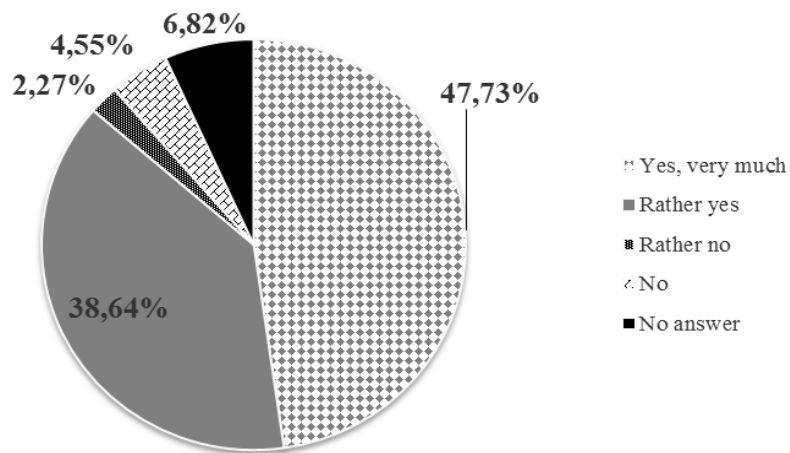
One of the main goals of the EU funds is to encourage the investments, not only connected with the utilization of the granted support, but also own investments of the companies after the financial support from the EU has been utilized. The research showed that more than half of the surveyed beneficiaries, exactly 59%, after realization of the projects financed from the OP IE funds decided on further investments in those projects from their own resources. This shows, that the EU funds created such opportunities for entrepreneurs to develop their businesses that they also chose to spend more money on further development of the projects started with the help of the EU funds, which is very positive.

Another very important issue which was subject to our research was the change of level of innovativeness and competitiveness of the companies which received the financial support from the OP IE. It appeared that by investing in new innovative IT solution, IT infrastructure, R&D activities and new projects, the enterprises gained opportunities to become even more innovative and competitive on the e-business market. According to the opinion of the respondents exactly half of the enterprises became much more innovative as a result of the received support, than it was before, and the next 41% said that it affected their innovativeness in some positive way. Less than 5% of the surveyed companies indicated that the EU funds did not have any influence on their innovativeness. The exact data can be seen in Figure 6.

Figure 6. Increase of innovativeness according to the surveyed companies

Source: Own calculations based on the survey results.

As regards the competitiveness, more than 86% of the surveyed companies assessed the influence of the EU funds on their competitiveness as positive, while almost 48% of them claimed that they definitely improved their competitiveness to a large extent. Only, 2% answered that the financial support from the OP IE did not improve the level competitiveness of their businesses.

Figure 7. Increase of competitiveness according to the surveyed companies

Source: Own calculations based on the survey results.

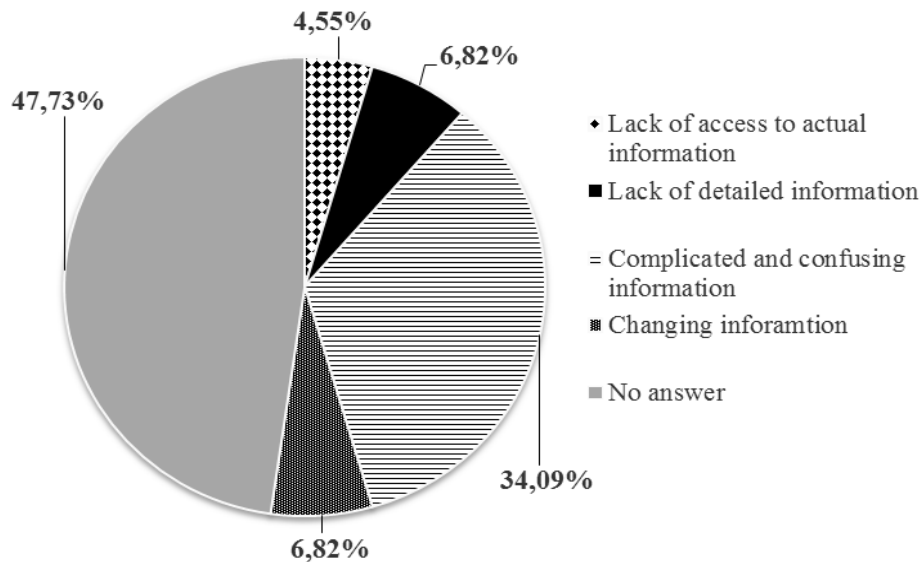
As a conclusion from the research presented above it may be stated that the general influence of the funds from the OP IE on the companies from the Polish e-business sector is highly positive and the research hypothesis is confirmed. However, the research covered also the aspects of the support of the Implementing Institution (PARP) for the companies that applied for the EU support, the level of cooperation with that institution and the level of the information available for the companies during the application process. The results of that research are presented in the paragraph below.

5. The information, application process and the cooperation with the Implementing Institution

It is very important that the cooperation of the companies with the Implementing Institution is at a good level due to the fact that it may result in proper utilization of the support granted for the companies and increase the range to which the funds that are granted for the country are being utilized, which in the case of Poland is currently still at an unsatisfactory level, as it is known even from the everyday newspapers. The conducted research showed that one of the reasons for such disappointing state in the case of the e-business sector in Poland can be the unsatisfactory cooperation level, support in the application process and the level of information available for the companies.

More than half of the respondents estimated the information availability as positive, 45% of the entrepreneurs considered, that the access to the essential information concerning the measures' realization is good, but only 2% that it is very good. More than one third (36%) of respondents was dissatisfied with the access to information, and 16% still claimed that it was not good enough and should be improved. The main reasons of the dissatisfaction were too complicated and confusing information. For more than 52% of the respondents it was difficult to clearly understand information given by the Implementing Institution (PARP). Complicated and confusing information was a problem for more than 34% of them. Lack of the detailed information and many changes introduced to the measures' regulations were arduous for 13,5% of respondents. Only 4,55% of the respondents complained about lack of the actual information. The rest of them did not even want to reply to the question concerning the information, which could have been caused by the fact that they did not think that their opinion would change anything. The detailed data can be seen in Figure 8.

Figure 8. Reasons for which the surveyed companies reckoned the access to the information as bad

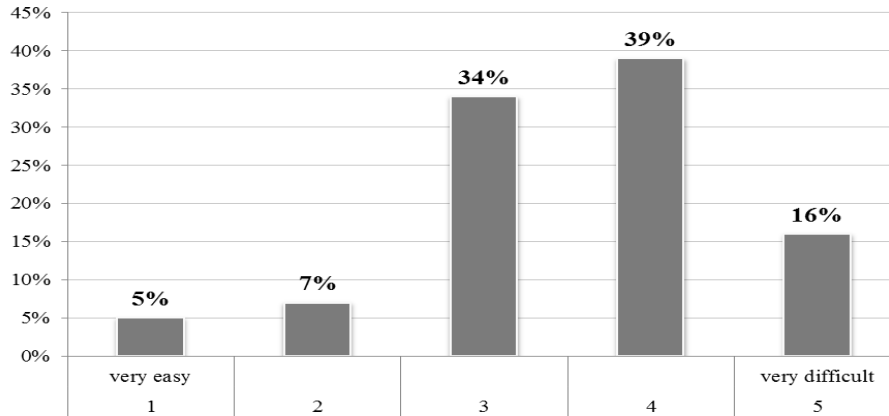


Source: Own calculations based on the survey results.

As regards the time of submitting the application forms, more than half of the surveyed entrepreneurs (57%) evaluated it as sufficient. However, for 27% of them it was short, and for 11% of them too short. Only 5% of respondents claimed, that it was long enough. Nobody complained for too long period of time for sending the applications.

According to the respondents, the most difficult step in the procedure of applying for the EU funds was obtaining of the specific and the detailed information. Quite often there appeared problems with business plan preparation, work with online applications' generator and with data preparation for the project application. Entrepreneurs complained about incorrect documentation for contests, which was incoherent and contradictory with other regulations, huge difficulties with online generator, which was not well prepared for working online and lack of the specific criteria. It indicated that the procedures were too difficult and complicated for the beneficiaries and should be changed in the future in order to facilitate the process of applying for the EU funds.

Figure 9. Difficulty level of fulfilling the application forms according to the surveyed entrepreneurs



Source: Own calculations based on the survey results.

As it can be seen from Figure 9, the entrepreneurs had difficulties with completing the application forms. Only 12% of them evaluated this procedure as easy or even as very easy. It indicated again that obtaining funds from EU was connected with arduous and excessive bureaucracy, which was incomprehensible for the beneficiaries.

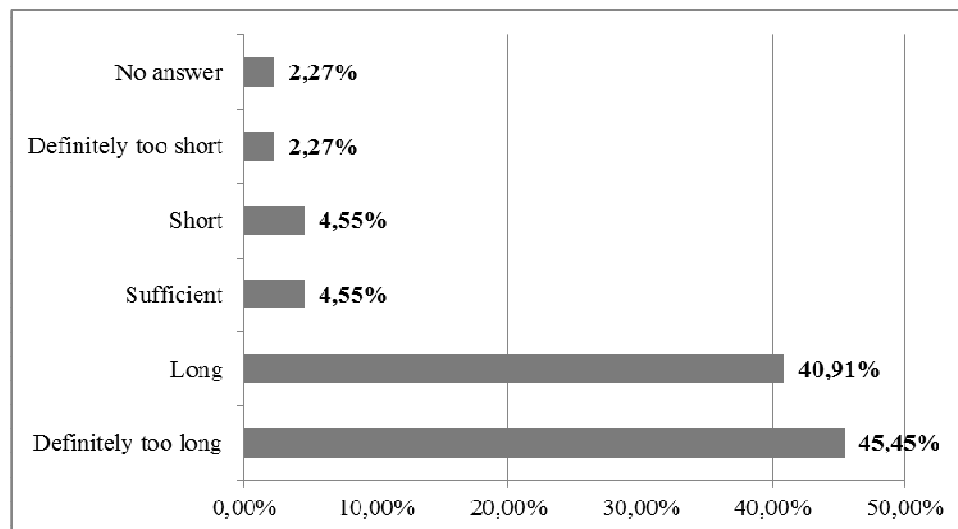
Due to the significant level of difficulties connected with completion of the application forms, the majority of respondents needed additional assistance with this process. It resulted in the fact, that 64% of entrepreneurs used some kind of help with completing and gathering the documents required for the contest. Only 34% of them prepared the documents on their own (2% did not want to reply to the question concerning help). The majority of assistance (for 48% of the surveyed companies), connected with the previously described question, was provided by the professionals, who were outsourced or even employed in the company. This shows that the application process itself generated additional costs for the companies. As most of them are small and micro firms it should be considered that the procedures are simplified in the future so that the additional costs for companies are reduced. For 7% of the respondents the main source of help was the employees of the Implementing Institution, while 11% of entrepreneurs asked their friends for help while completing documentation.

Only 65% of the respondents appreciated the usefulness and helpfulness of the manuals prepared by the Implementing Institution for the application process, and for 4,55% of the surveyed entrepreneurs it was very helpful.

However, still 32% of them claimed that it was not so helpful and the manual did not resolve their problems during the fulfilling of the application documents.

Another problem was the waiting time for the decision about the granted support and after that the waiting time for getting the transfer of funds after the acceptance of the projects. In the opinion of the surveyed companies that received funds it took the Implementing Institution too long to announce the results. As it can be seen from Figure 10, according to the respondents, this time was too long and should obligatory be shortened in the future.

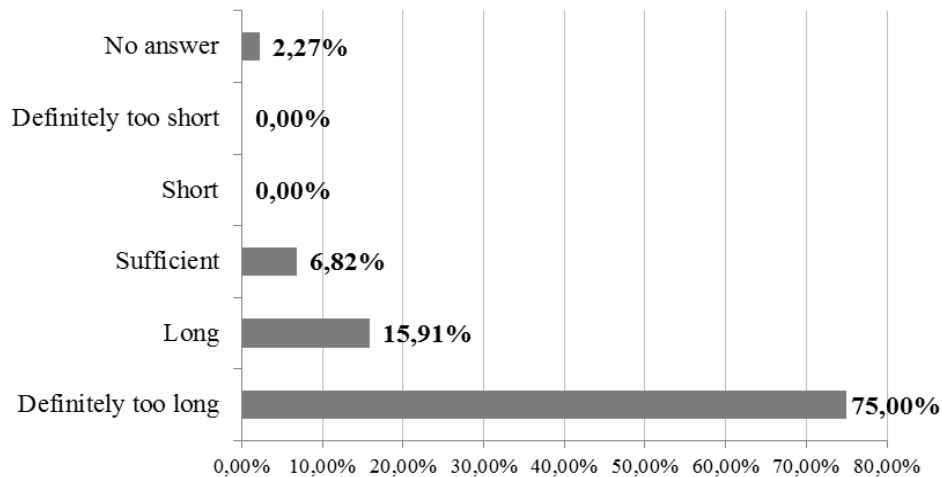
Figure 10. Assessment of the length of waiting time for the decision about the granted support by the surveyed companies



Source: Own calculations based on the survey results.

The waiting time for receiving the financial resources for projects, which were approved, was also definitely too long according to the surveyed companies (see Figure 11) and as a result, the entrepreneurs complained, that because of such a huge delays in receiving of the funds, they could not realize all the assumptions of projects or implement new ideas.

Figure 11. Assessment of the waiting time for the transfer of funds after the decision about the granted support by the surveyed companies



Source: Own calculations based on the survey results.

As a result of all the above mentioned problems with information or cooperation with the Implementing Institution, the opinion about it was differentiated. However, the biggest group of entrepreneurs complained about bad cooperation with the Implementing Institution (38%), the cooperation with PARP was neither good nor bad for 36% of the respondents and only 25% of them evaluated it as positive.

6. Conclusions

Based on the data presented in the article the research hypothesis: ‘The wide possibilities of applying for financial support within European Union funds can contribute to the development of e-business sector in Poland, which enables entrepreneurs to reach new customers and increase the sales, turnover and profit, at relatively low cost of investments’, which was set for the needs of the work, can be verified positively. The opportunities provided by the EU funds, in the form of a Polish Operational Programme Innovative Economy, undoubtedly facilitate the growth of e-business sector in Poland, which was shown in the work. The analysis of the potential of available financial support related to e-business projects and provided by the EU indicated that the entrepreneurs, particularly those from micro and small enterprises’ sector, had wide

opportunities for applying for funds and assistance from the EU. The financial resources gave the profound possibilities for entrepreneurs to invest in new projects, its promotion, IT infrastructure and in human capital. With the support from the EU, the enterprises could improve the cooperation with R&D centers, create favorable conditions for the future development, what in a result increased the competitiveness and innovation potential of the Polish enterprises from the e-business sector. Those, which benefited from EU funds, in majority increased their turnover and attracted new clients. Moreover, they had opportunities to create new sustainable jobs and could contribute to the decrease of unemployment. The EU funds provided Polish entrepreneurs with the opportunity to reduce the development disparities between regions in Poland and to strengthen the economic and social cohesion. However, there are some limitations and difficulties in obtaining the EU funds, which may slow down the development of e-business sector in Poland in the future, which was also shown in the work. The procedures connected with applying for the EU funds are still too complicated. Moreover, there are no specific and detailed information, which very often impeded completion of the required documents. It also may discourage the potential future beneficiaries and result in the resignation from applying for the European support. The procedures are so difficult that the potential beneficiaries of the EU funds usually have to ask for help of some other entities, including professionals, what generates higher costs. In many cases, the cooperation with the Implementing Institution, so the Polish Agency for the Enterprise Development (PARP) in the case of the OP IE, was evaluated negatively by the entrepreneurs, because it additionally impeded obtaining the EU funds.

On the basis of the conducted survey it can be concluded, that to enable fast and efficient growth of the e-business sector in Poland, and also the better utilization of the funds that are granted to our country, there should be introduced some improvements in the procedures of applying for the EU funds. First of all, it should be more entrepreneurs friendly. That is why it should be connected with the reduction of unnecessary bureaucracy, improvement of cooperation with the Implementing Institution and improvement of the flow of information. Moreover, the Polish government should consider the market requirements and ensure possibility of obtaining funds for a bigger group of beneficiaries, as the amount of potential entrepreneurs, who would like to benefit from the EU funds and have very innovative project increases still, however, due to the limited resources their projects were not approved. So finally, in order to facilitate the development of electronic business in Poland in a faster and more efficient way, the amount of funds devoted to this sector should be increased.

References

Czajkowski T. (2011), *Comparative Analysis of the Recent Financial Crisis' Impact on the Retail Electronic Commerce in the European Union in the USA and in Poland*, 'Comparative Economic Research Central and Eastern Europe', Vol. 14, number 2/2011

Dworak E. (2010), *Analysis of knowledge-based economy impact on economic development in the European Union countries*, 'Comparative Economic Research Central and Eastern Europe', Vol. 13, number 4/2010

Kopycka K. (2010). *The influence of European Union funds on the development of e-business sector in Poland*, Master's Thesis written under the supervision of PhD Tomasz Czajkowski and PhD Aleksandra Januszkiewicz at the Technical University of Łódź

Laudon K.C., Guercio Traver C (2007), *E-commerce. Business. Technology. Society. Third edition*, Pearson Prentice Hall

Turban E., King D., Viehland D., Lee J. (2006), *Electronic Commerce 2006, a managerial perspective*, Pearson Prentice Hall

'Information Economy Report 2007-2008, Science and technology for development: the new paradigm of ICT', United Nations, New York and Geneva, 2007, the report is available in full version on the UNCTAD webpage: www.unctad.org

'i2010 High Level Group, The economic impact of ICT: evidence and questions', European Commission Report 2006, available in full version on:

http://ec.europa.eu/information_society/eeurope/i2010/docs/high_level_group/note_on_economic_impact_of_ict.pdf

'i2010 – A European Information Society for growth and employment', COM(2005) 229 final, Brussels, 1.6.2005, available in full version on:

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2005:0229:FIN:EN:PDF>

'Competitiveness and Innovation Framework Programme (CIP)', ICT Policy Support Programme, ICT PSP Work Programme 2011, available in full version on: http://ec.europa.eu/information_society/activities/ict_psp/documents/ict_psp_wp2011_for_publication.pdf

<http://www.parp.gov.pl>, information obtained in August 2010

<http://www.web.gov.pl/bazy-wiedzy/>, data obtained in August 2010

All the results of the survey research concerning the electronic business sector in Poland presented in this article are taken from the master thesis, entitled 'The influence of European Union funds on the development of e-business sector in Poland', written by Katarzyna Kopycka under the

supervision of PhD Tomasz Czajkowski and PhD Aleksandra Januszkiewicz, which was defended in October 2010.

Streszczenie

WPŁYW FUNDUSZY UE NA ROZWÓJ SEKTORA BIZNESU ELEKTRONICZNEGO W POLSCE

W artykule zaprezentowana jest analiza wyników badań, dotyczących wpływu funduszy UE z Programu Operacyjnego Innowacyjna Gospodarka, Działanie 8.2. Wspieranie wdrażania elektronicznego biznesu typu B2B oraz Działanie 8.1. Wspieranie działalności gospodarczej w dziedzinie gospodarki elektronicznej w zakresie eUsług, na rozwój sektora biznesu elektronicznego w Polsce. Zostały poruszone takie ważne aspekty, jak innowacyjność i konkurencyjność ankietowanych przedsiębiorstw oraz ich współpraca z Instytucją Wdrażającą – PARP (Polska Agencja Rozwoju Przedsiębiorczości). W artykule zaprezentowano również wnioski z badań oraz rekomendacje dotyczące poprawy przyszłej pracy Instytucji Wdrażającej i jej współpracy z przedsiębiorstwami.