

IMPACT OF THE COVID-19 PANDEMIC ON THE ACTIVITIES AND IMPLEMENTATION OF POLISH RESEARCH INSTITUTES AND THEIR STATUTORY ACTIVITIES IN 2020–2021

WPLYW PANDEMII COVID-19 NA DZIAŁALNOŚĆ I REALIZACJĘ DZIAŁAŃ STATUTOWYCH
INSTYTUTÓW BADAWCZYCH W POLSCE W LATACH 2020–2021

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ABSTRACT

This is a research article whose main objective is to discuss the impact of the COVID-19 pandemic on the activities of research institutes in Poland. The sources of the paper are the results of surveys conducted twice in 2020, on a selected sample of research institutes associated with the Main Council of Research Institutes. For the purposes of the article, surveys of the literature and available sources were made, and the method of analysis and synthesis was applied. The article closes with a summary containing the most important conclusions.

Key words: COVID-19 pandemic, research institutes, science, economy

ABSTRAKT

Poniższy artykuł ma charakter badawczy a jego głównym celem jest omówienie wpływu pandemii COVID-19 na działalność instytutów badawczych w Polsce. Podstawę źródłową pracy stanowią wyniki badań ankietowych przeprowadzonych dwukrotnie w roku 2020 na wybranej próbie instytutów badawczych zrzeszonych w Radzie Głównej Instytutów Badawczych. Na potrzeby artykułu dokonano kwerendy literatury i dostępnych źródeł, zastosowano metodę analizy, syntezy i porównania. Artykuł zamyka podsumowanie zawierające najważniejsze wnioski.

Słowa kluczowe: pandemia COVID-19, instytuty badawcze, nauka, gospodarka, innowacje

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Introduction

The COVID-19 pandemic is a phenomenon that has caused a lot of uncertainty, leading to changes in everyday life, social behaviour and economies worldwide. Consequently, most countries have introduced restrictions to ensure the health and safety of their citizens. The impact of the COVID-19 pandemic on the activities of the scientific sector in Poland has also become the subject of analysis and research.

The aim of this article is to discuss the significance and impact of the COVID-19 pandemic on the activities of research institutes in Poland. The data obtained on the basis of questionnaire surveys completed by research institutes in Poland and interviews with representatives of research institutes allowed to identify the main problems faced by research institutes in Poland and how their market situation changed during the

pandemic. The article comprises four parts. In the first part, a brief introduction on the current situation of research institutes in Poland, their place and role in scientific policy of the state and the principles of their operation are described. The second part presents an analysis of conducted surveys, wherein the third section is a summary of their results. The last part includes conclusions and an attempt to systematise the main problems encountered by research institutes as a result of the COVID-19 pandemic.

The Outlined Problems

At present, there is a growing need for comprehensive research related to the impact of the pandemic on the functioning of research institutes in Poland. Research regarding the activities of research institutes in the pandemic period and their results may provide guidance for governmental institutions responsible for allocating public funds for scientific activities and may be helpful in developing the principles of the future scientific and innovation policy of the state (Czerniak, 2013).

One of the major challenges in the science policy of the state is the effective allocation of public funds to acquire new knowledge. Research institutes are an essential element of the system of science in Poland. Due to their supervision by competent ministers, research institutes are often referred to as 'departmental institutes'. Not only do they constitute an important source of scientific knowledge, but they are also entities managing research equipment and educating qualified personnel (Daszkiewicz, (2008). This is the only sector of science that was thoroughly restructured in the 1990s. The main direction of restructuring was consolidation. Currently, the framework for the research institutes operation is set out in the Act of law of 30 April 2010 on research institutes.¹

Research institutes, as defined in Art. 1 item 1, are state organisational units, identifiable in legal, organisational, economic and financial terms, which conduct scientific research and development work aimed at their implementation and application in practice. (Dz.U. z 2010 r. Nr 96 poz. 618). In December 2016, an Act was implemented that amended the existing Act of law on research institutes. The amended Act regulates the procedures for

the appointment and dismissal of directors of state research institutes and the composition of their scientific councils, including the method of appointing the chairman of the council and the deputies. Subsequently, the new Constitution for Science (<https://konstytucjadlanauki.gov.pl>) was passed and the Łukasiewicz Research Network was established. (<https://lukasiewicz.gov.pl>).

A smaller network was also established to strengthen the potential of research institutes to carry out large research projects, both for the development of the economy and the competitiveness of enterprises in the area of land transport.² Currently in Poland there are 99 research institutes, including 32 belonging to the Łukasiewicz Research Network (Kwieciński, 2020) and 3 institutes belonging to the POLTRIN network. The establishment of research networks in Poland was inspired by solutions found in other European countries, such as the Fraunhofer Fraunhofer Gesellschaft in Germany. (<https://www.fraunhofer.de/en/about-fraunhofer.html>) (Beise & Stahl, 1999). The research networks that were established in Poland associating research institutes are a necessary and inspiring project for the development of the Knowledge-Based Economy (Barcikowska, 2018).

Public research institutes are diverse and complex scientific units, located throughout the entire country. Each of them has a unique management and organisational culture. They operate in the areas of industry, transport, energy, medicine, agriculture, public services, infrastructure and defence. The main objective of the institutes is to cooperate with the economy and business, and encourage entrepreneurs to implement modern technologies (Matyjas & Bohdanowicz, 2018). At the same time, these units are obliged, like other branches of science, to demonstrate their achievements in research and publication areas. Reconciling these two fundamental objectives of their activities and finding an optimal solution is a difficult and complicated process (Gullbrandsen, 2011).

Due to the ongoing pandemic caused by COVID-19 worldwide, there is a significant danger of reducing the scientific and research capacity of research institutes. Therefore, in 2020, the General Council of Research Institutes — (*Rada Główna Instytutów Badawczych* — RGIB) conducted a quantitative survey twice using a survey questionnaire among research

institutes, the aim of which was to identify the problems the institutes were facing and how much their market situation changed in the initial period of the pandemic, after the first half of 2020 (Christensen & Raynor, 2003).

Analysis of the Impact of COVID-19 on the Activities of Research Institutes

Source material and research method

In March 2020, the Office of the General Council of Research Institutes sent out for the first time a survey questionnaire on the impact of the COVID-19 pandemic on the functioning of research institutes in Poland. A total of 62 institutes responded to the survey, which is about 62% of all institutes in Poland. The survey consisted of five questions concerning the economic situation of the surveyed unit, the conditions for fulfilling undertaken commitments, the impact of the closure of the economy on the functioning of the unit and reduction in employment (<https://www.rgib.org.pl/start/dokumenty/329-ankieta-w-sprawie-wplywu-epidemii-covid-19-na-sytuacje-finansowo-ekonomiczna-instytutow>).

In July 2020, all research institutes were again asked to fill in an extended survey, the aim of which was to find out the opinion of the institutes on how COVID-19 affected the functioning of the units after the first half of 2020 and 61% of them responded. Each question had three possible answers to choose from. After collecting the answers, the RGIB office prepared synthetic information on the results and sent it to the Ministry of Education and Science (<https://www.rgib.org.pl/start/dokumenty/338-informacja-o-wynikach-ankiety-o-wplywie-epidemii-covid-19na-funkcjonowanie-ib-po-i-polroczu-2020-r>).

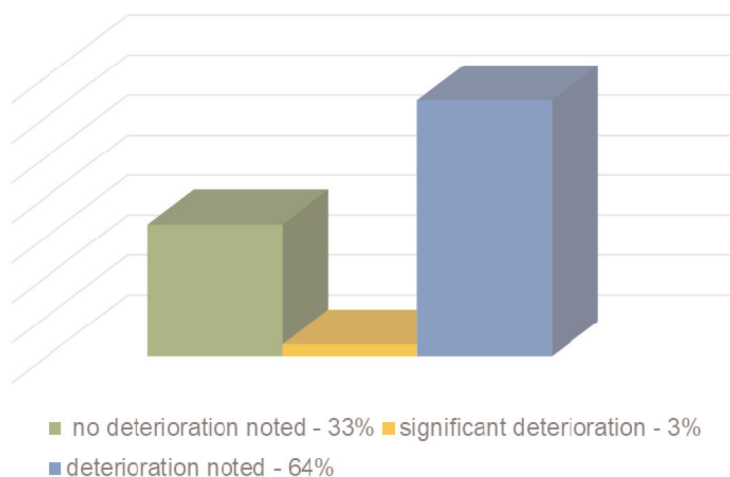
Analysis and discussion of research results

On the basis of the data collected and published by the RGIB, the results of the survey of research institutes on the impact of the COVID-19

pandemic on their functioning beyond the first half of 2020 are presented below. In this stage, the institutes answered eight research questions.³

The first question, *Have you noticed any deterioration in the economic and financial situation of your Institute?*, was responded to by 64% of the surveyed institutes, who noted that their economic and financial situation had deteriorated, 3% noticed a significant deterioration, whereas in one in three institutes the situation had not deteriorated. The results are shown in Figure 1.

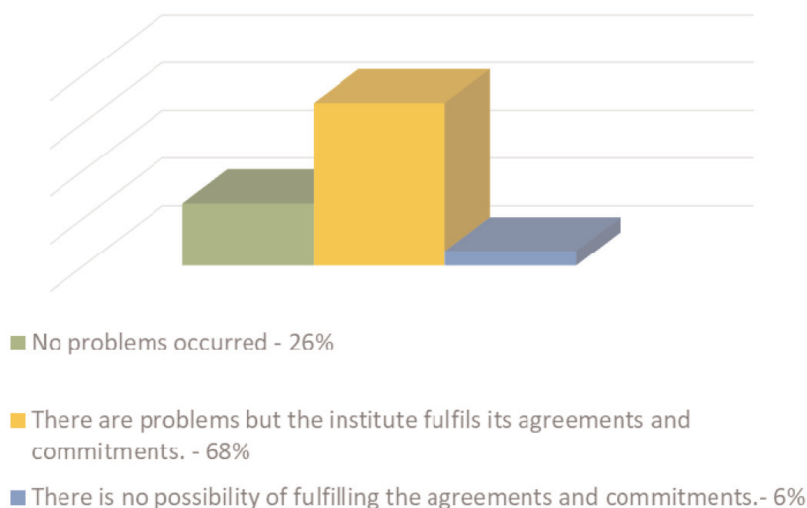
Figure 1. Have you noticed any deterioration in the economic and financial situation of your Institute?



Source: the author's own compilation based on data provided by the General Council of Research Institutes.

The second question, *How does the implementation of previously signed contracts as well as national and international commitments look like?*, was answered by 26% of the institutes, who stated that during the pandemic period no problems occurred with the implementation of previously signed contracts and national and international commitments, 64% of the institutes faced problems with the implementation of previously signed contracts, while 6% answered that it was not possible to implement contracts (Figure 2).

Figure 2. How does the implementation of previously signed contracts as well as national and international commitments look like?



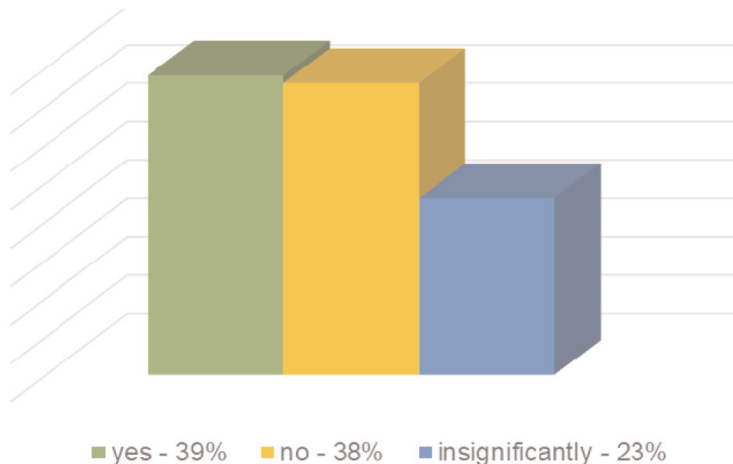
Source: the author's own compilation based on data provided by the General Council of Research Institutes.

The third question, *Were there any other adverse impacts directly or indirectly related to the pandemic which affected the operation of the Institute?*, was answered by 39% of the institutes in the affirmative, 38% reported no adverse action and 23% described the difficulties as minor (Figure 3).

The fourth question, *Has the current situation caused, or is it likely to cause, redundancies in the Institute?*, was replied by 13% of the institutes surveyed in the affirmative, 80% in the negative and 7% were unable to predict whether redundancies would occur (Figure 4).

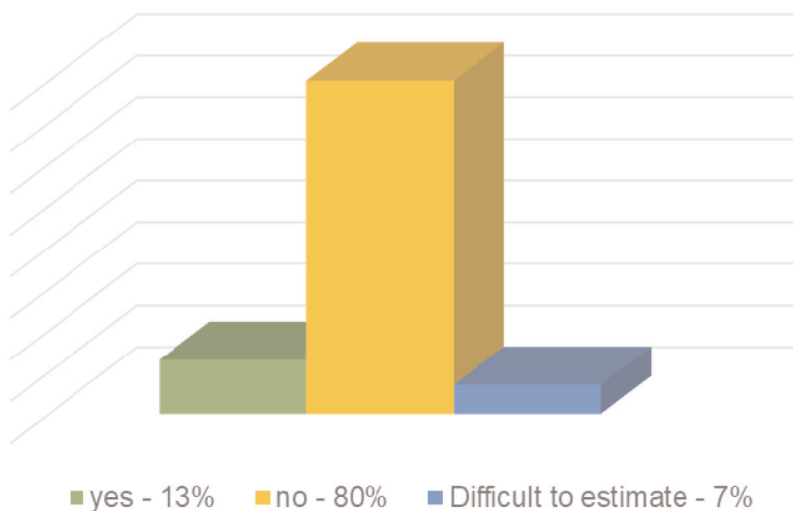
The fifth question, *Do you think the ongoing situation may negatively affect the institute's economic performance in the current year?*, was answered by as many as 80% of the institutes in the affirmative, 16% in the negative and 4% replied that it was difficult to estimate (Figure 5).

Figure 3. Were there any other adverse impacts directly or indirectly related to the pandemic which affected the operation of the Institute?



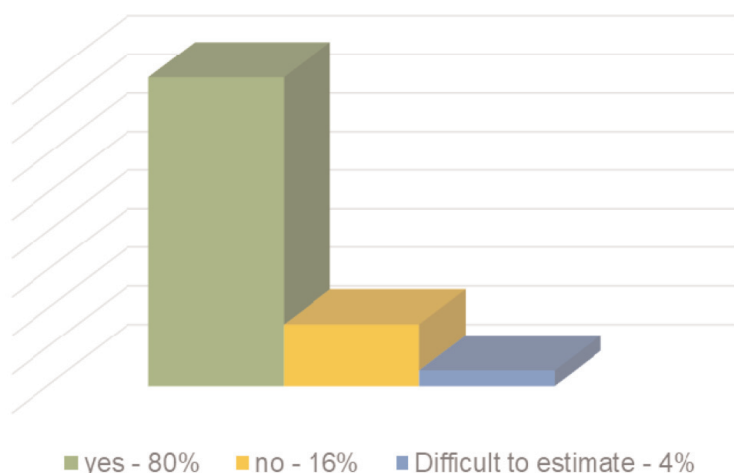
Source: the author's own compilation based on data provided by the General Council of Research Institutes.

Figure 4. Has the current situation caused, or is it likely to cause, redundancies in the Institute?



Source: the author's own compilation based on data provided by the General Council of Research Institutes.

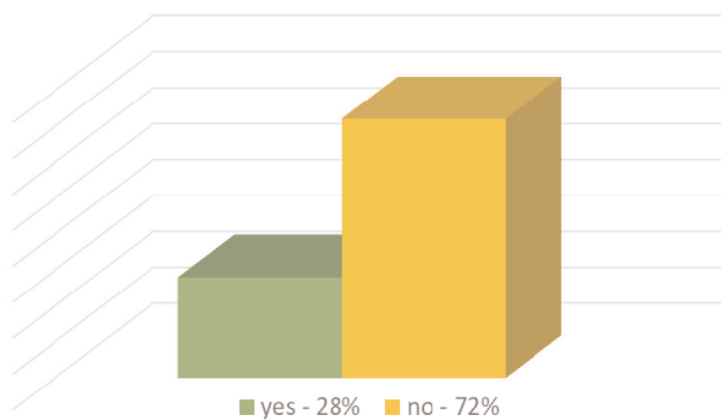
Figure 5. Do you think the ongoing situation may negatively affect the institute's economic performance in the current year?



Source: the author's own compilation based on data provided by the General Council of Research Institutes.

The sixth question, *Has the institute benefited from assistance under the Anti-Crisis Support Shield?*, was answered in the affirmative by 28% of the surveyed institutes and in the negative by as many as 72% of respondents (Figure 6).

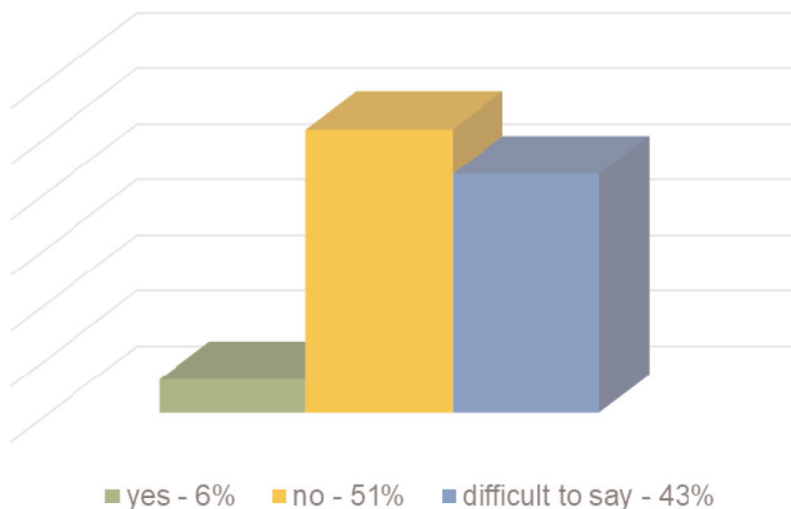
Figure 6. Has the institute benefited from assistance under the Anti-Crisis Support Shield?



Source: the author's own compilation based on data provided by the General Council of Research Institutes.

The seventh question, *Is the existing support for research institutes within the framework of the Anti-Crisis Support Shield sufficient?*, was answered by 6% of the surveyed institutes in the affirmative, 51% in the negative and 43% were unable to give a definite answer (Figure 7)⁴

Figure 7. Is the existing support for research institutes within the framework of the Anti-Crisis Support Shield sufficient?



Source: the author's own compilation based on data provided by the General Council of Research Institutes.

The eighth question, *Do you see any need to extend the Anti-Crisis Support Shield with additional solutions targeted at research institutes?*, was answered by almost 100% of research institutes in the affirmative.

Interpretation

The answers obtained to the eight questions of the survey questionnaire encourage the following reflections:

- there is clear concern among research institutes about their economic and financial situation in the first half of 2020, but many also express their concern about the future, with more than half of those surveyed reporting a deterioration in their financial and economic situation during the COVID-19 pandemic;
- despite significant problems due to delays in the implementation of signed contracts and commitments, most institutes met their obligations;
- delays and changes in contract schedules, delays due to the delivery of equipment from abroad, have become a fairly obvious problem;
- the majority of institutes are unlikely to plan staff reductions (it should be added that some institutes decided to make temporary changes to working conditions, reduce raises, reduce working time or reduce basic salary);
- for more than half of the institutes surveyed, the introduced Anti-Crisis Support Shield was not sufficient and not many institutes took advantage of it. Moreover, the information received during the 4th meeting of the RGIB⁵ shows that the main reasons for the deterioration in the economic situation of the institutes resulted from the inability to carry out field research in a timely manner and limitations in obtaining new orders. Lack of trainings, scientific seminars and conferences which impeded professional development opportunities, and increased market prices for certain raw materials necessary for research works were also observed. However, most institutes maintain financial liquidity. The main reasons for the deterioration of the institutes' economic situation are due to the economic slowdown. Significant costs were generated by expenditure on ensuring safe and hygienic work, as well as purchasing additional equipment necessary for remote work. There were also time delays in cooperation with domestic and foreign contractors.

The recommendations and guidelines made by the General Council of Research Institutes, after consultations with representatives of research institutes, to the Ministry of Education and Science to reduce the impact of the COVID-19 pandemic included the following solutions:

- direct reference in the legislation to research institutes as entities covered by the Anti-Crisis Support Shield;
- the creation of a special-purpose financial reserve for research institutes at the disposal of supervising ministers, the purpose of which would be to provide ad hoc support for institutes in the most difficult situation caused by COVID-19;
- regulation of the remote working mode contained in the Labour Code;
- the possibility for research institutes to obtain additional funding to support the IT infrastructure;
- increase the annual subsidy by a significant percentage;
- the allocation of more funds by the Ministry of Education and Science to research and development work carried out by the institutes;
- introduction of legal solutions allowing for the extension of the implementation period of projects financed by National Centre of Research and Science (NCBR).

It was also proposed by NCBR to launch the IN4IN programme, targeted at real economic and social needs, taking into account the capabilities of entrepreneurs, with higher than so far co-financing from NCBR. The proposed programme would include in particular technical, technological and medical solutions (Biuletyn Rady Głównej Instytutów Badawczych, 2020).

On the positive side, there have been significant advances and developments in the technological processes necessary to carry out online work, and a significant increase in scientific publications. Research institutes have coped reasonably well with the pandemic period and have adapted their activities to the prevailing conditions. In the future, it will be reasonable to continue with this research and to present it after the end of the pandemic time. It is also worth considering undertaking research related to the issue of research institutes and their management, internal regulations and organisational structures, which undoubtedly have a huge impact on their operation in Poland (Biuletyn Rady Głównej Instytutów Badawczych, 2021).

Conclusions

The COVID-19 pandemic proved to be a disruptor of the existing order of things and a catalyst for change in many areas of life, although often sudden and unexpected. The need to limit contacts with other people forced and accelerated changes in the technological sphere, which not everyone was or is ready to accept. The disruption of supply chains, the inertia of adaptation processes and uncertainty in markets have led to a significant increase in interventionism and levels of inflation not seen for many years. Finally, the imminent threat to human life and health, resulting in overburdened health systems in many countries, was, on the other hand, accompanied by a wave of scepticism. Today's world is becoming increasingly complex and multidimensional (Smith, 2006). It is difficult to avoid risks, meet challenges and exploit opportunities without coordinated efforts and the use of talents and resources. It also seems impossible to solve any civilisational problem without cooperation between science, administration and business.

In the crisis that COVID-19 caused, the need for research and innovation development is clear. The way work was organised, managed and collaborated revealed the interdependence between research and policy. Compared with universities, the issues related to research institutes are much less addressed and described in the literature. Quite often, they are treated holistically as a scientific and research system without focusing on the specifics of their activities. Their functioning is influenced by the scientific and innovation policy of the state, appropriate legal regulations facilitating their operation and financial resources dedicated to these institutions. In order to function properly, they need stability and predictability of actions of the government administration, the Ministry of Education and Science, state agencies such as the NCBR and the National Centre of Science (NCN). It is necessary to create institutional, organisational and information

solutions, support tools in which they could develop and their activity would have an effective impact on the scientific and economic development of the country. The analysis and conclusions in this article in relation to the impact of the COVID-19 pandemic will be an indication for the development of appropriate legal and economic solutions (Gryzik, 2017).

Endnotes

¹ The provisions of the Act shall not apply to research institutes of higher education and research centres of the Polish Academy of Sciences.

² Polska Sieć Instytutów Badawczych Transportu–POLTRIN.

³ For the analysis, the author chose a questionnaire with the largest number of questions.

⁴ The question was answered by research institutes that benefited from the Anti-Crisis Support Shield.

⁵ The meeting was held on-line on 1 July 2021 and the author participated in it. For more information see Bulletin of the General Council of Research Institutes No. 2 July 2021.

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