

## Entrepreneurship among People with Disabilities in Unstable Macroeconomic Conditions

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### Abstract

**Aim:** The study attempted to characterise and identify the behaviour of people with disabilities operating as self-employed entrepreneurs in the period of dynamic changes in the macroenvironment related to the outbreak of the COVID-19 pandemic and the war in Ukraine.

**Methodology:** The authors aimed to identify the factors affecting changes in self-employment among people with disabilities, and to place them in the context of the changes occurring in the macroenvironment. In particular, the subject of the research was to determine the trends in self-employment among people with disabilities against the background of the total population aged 15 years or older, as shown in research into the economic activity of the population in the context of selected macroeconomic parameters. For the purposes of the paper, the following research hypothesis was formulated: Self-employment among disabled people is a good alternative to full-time employment in unstable macroenvironmental conditions, because it is better adapted to their capabilities and gives them greater freedom in shaping their working time. The basic research question was whether the situation of disabled people on the labour market depends on changes in the

macroenvironment, and if self-employment is a better form of activity on the labour market than working full-time? The adopted research methods were: critical analysis of the literature, statistical analysis, the inductive method, and dependency analysis based on Pearson's correlation coefficient.

**Results:** The subject research hypothesis was verified only with regard to some self-employed people with significant and medium disabilities. However, in terms of all self-employed people with disabilities, the hypothesis must be rejected. The basic time scope of the research covered the years 2019-2022 and the first quarter of 2023, and allowed for comparisons of the behaviour of disabled people in conditions of turbulence caused by the COVID-19 pandemic and the war in Ukraine, with macroeconomic conditions unaffected by those two factors. The research included self-employed people with disabilities listed in the register of the National Fund for the Rehabilitation of People with Disabilities (PFRON). Following the study of the literature and empirical research, the authors were unable to fully confirm the formulated hypothesis.

**Implications and recommendations:** The authors pointed to the necessity of continuing the research process in the field of the behaviour of entrepreneurs with disabilities in conditions of an unstable macroenvironment. This study is an introduction to further discussion and considerations in this area and justifies the need to verify the adopted research assumption with the passage of time and the acquisition of new data. This will allow to avoid typical errors resulting from a relatively short time range of observations.

**Originality/value:** The article is a response to the cognitive needs of disabled entrepreneurs in conditions of rapid macroeconomic change. There is a clear lack of findings in this area in the literature. This study was also intended to fill the existing gap in scientific research on the situation of people with disabilities in Poland and around the world.

**Keywords:** entrepreneurship, people with disabilities, self-employment, macroenvironment

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## 1. Introduction

Since 1989, that is from the moment the system of a centrally managed economy was abandoned in favour of a market-oriented economy, the Polish economy and labour market have undergone fundamental changes (Gołacka and Keczeń, 1997). The process of economic transformation, which initially caused a sharp rise in unemployment in the first phase of its marketisation (Glikman et al., 1997), in subsequent phases began to bring positive macroeconomic results, thanks amongst others, to the restructuring of the banking system and of enterprises, and protection programmes (Kaliński and Landau, 2003). A particularly important moment in the process of development of the Polish economy in the 21st century was Poland's accession to the European Union in 2004. The wider access to the European labour market, which initially resulted in a wave of emigration from Poland (Damelang et al., 2021), also contributed to a drop in unemployment and also socio-economic transformations. The inflow of capital and technology decidedly accelerated economic transformations, improved the competitiveness of the Polish economy, and as a result improved the macroeconomic situation in Poland. Nevertheless, the social costs of systemic transformation in Poland were significant and can still be felt. These were compounded by crisis situations in the period 2007-2009 (Eigner and Umlauf, 2015; Langley, 2015) and during the COVID-19 pandemic and the war in Ukraine (Chohan, 2022; GLOBSEC, 2022).

In the opinion of many economists, in times of unstable macroeconomic conditions, social groups that are economically weak and disadvantaged on the labour market are particularly at risk, which usually include, among others, people with disabilities (Barrett, 2010; Emmenegger et al., 2015). It was therefore of interest to examine the situation of these people on the Polish labour market, especially during the unstable macroeconomic conditions caused by the COVID-19 pandemic and the war in Ukraine.

Although the changes in the labour in Poland have been widely researched and described, there is a scarcity of research on changes in the economic activity of people with disabilities, in particular the lack of research on entrepreneurial attitudes among people with disabilities, and their conducting of economic activity in the form of self-employment. In the opinion of the authors, this is important in the cognitive process of understanding this socially significant group, which is both at risk of social and economic exclusion, characterised by especially low economic activity and a relatively high passivity on the labour market. In prior research by the authors into this subpopulation, certain segments of the labour market were repeatedly indicated, in which people with disabilities demonstrate a specific attitude. One example that can be cited is their economic activity and their search for forms of economic activity through self-employment and conducting economic and/or agricultural activity on their own account. Earlier studies by the authors showed that by creating favourable legal and financial conditions, as well as stable macroeconomic environment, people with disabilities can match those without disabilities in terms of economic activity. Therefore, it became of interest to examine their entrepreneurial attitudes and activity in this area in unstable macroenvironment conditions, which inspired this paper.

For the purposes of this study, the following research hypothesis was formulated: entrepreneurship among people with disabilities is a good alternative to full-time employment in unstable macroenvironment conditions, as it provides such people with greater financial and decision-making independence, flexible working times and better use of their individual psycho-physical features than for those in full-time employment.

The timeframe for the research was the period 2019-2022 and the first quarter of 2023. The research included self-employed people with disabilities listed in the register of the National Fund for the Rehabilitation of People with Disabilities (Państwowy Fundusz Rehabilitacji Osób Niepełnosprawnych – PFRON). The adopted research methods were critical analysis of the literature, statistical analysis, the inductive method, and dependency analysis based on Pearson's correlation coefficient.

## 2. Socio-economic Situation in Poland in 2019-2022

The appearance of the COVID-19 (Gorbalenya et al., 2020)<sup>1</sup> pandemic, first in China in 2019 and then in Europe in 2020, disrupted the existing socio-economic order. According to the World Health Organization (WHO) data from September 2023, the pandemic caused the death of almost 7 million people and affected almost 800 million (World Health Organisation, n.d.). Apart from the social impact, the pandemic had significant economic consequences globally. In the face of a lack of effective medicines and vaccines (in the initial phase of the pandemic), individual countries took a variety of measures to prevent the spread of the virus. A commonly used measure was the introduction of social distancing and limiting socio-economic life to the necessary minimum, referred to as 'lockdown' ((Pearson, Longman Dictionary of Contemporary English Online, n.d.). The forms of lockdown implemented in individual countries around the world mainly differed in the degree of social and economic distancing introduced depending on the course of the pandemic and the policies adopted for combatting its spread (Asahi et al., 2021; UK Economic Outlook, n.d.). A standard measure was direct financial assistance by lowering or even temporarily exempting entrepreneurs who had suffered due to the lockdown and the effects of the pandemic from fiscal liabilities. In many cases, however, this assistance was insufficient and did not protect them. In the United States, more than 3 million entrepreneurs radically limited or closed their business activity between February and April 2020, something that had never taken place in the history of the USA (Fairlie, 2020). As the economy was slowing recovering from the crisis caused by the COVID-19 pandemic, on 24 February 2022 the war in Ukraine broke out, caused by Russia's aggression against the country (Harris, 2022; Wilk and Domańska, n.d.). This conflict placed Ukrainians in an extreme situation, however, its economic consequences affected the whole world, whilst the countries that were most affected were those neighbouring Ukraine, including Poland.

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<sup>1</sup> COVID-19 (*coronavirus disease 2019*).

The effects of the COVID-19 pandemic and the war in Ukraine were also felt in the Polish economy, in particular on the labour market, however, as time passed and vaccines against the virus appeared, it rapidly recovered from the initial shock and the situation on the labour market improved (Cheng et al., 2020; Office of Disability Employment Policy, n.d.).

In Poland, the Central Statistical Office (GUS) data showed temporary negative changes to the labour market resulting from the COVID-19 pandemic. The number of people in work decreased in 2020 and partly in 2021 quarterly compared to the previous year. There was also an increase in registered unemployment according to research into economic activity among the population – REAP (BAEL) (Table 1).

Table 1. General information on the labour market situation in Poland in 2019-2022 and in the 1st and 2nd quarters of 2023

Details		Years																	
		2019				2020				2021				2022				2023	
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II
Working	in thousands	9636	9648	9651	9689	9692	9579	9581	9623	9579	9610	9614	9659	9756	9761	9785	9836	9807	9804
	in %	102.5	102.3	102.1	102.2	100.6	99.3	99.3	99.3	98.8	100.3	100.3	100.4	101.8	101.6	101.8	101.8	100.5	100.4
Registered unemployed (as at end of time period)	in thousands	985	877	851	866	909	1027	1024	1046	1078	993	935	895	902	818	802	812	847	784
Registered unemployed exempt for reasons related to place of work (as at end of time period)	in thousands	38.7	35.7	34.0	34.5	36.9	52.3	52.1	50.6	49.7	43.9	39.5	36.4	36.0	33.0	31.5	32.1	35.1	33.3
Rate of registered unemployment (as at end of time period)	in %	5.9	5.3	5.1	5.2	5.4	6.1	6.1	6.8	6.9	6.4	6.1	5.8	5.8	5.2	5.1	5.2	5.4	5.0
Job offers (as at end of time period)	in thousands	85	84	85	48	47	66	79	44	69	91	95	60	95	83	78	44	62	77
Unemployed according to REAP	in thousands	666	548	531	486	529	525	561	531	687	606	528	497	536	454	502	499	505	443

Source: Central Statistical Office data.

After the development of a vaccine and the mass vaccinations in 2021 and in early 2022, the economic situation gradually returned to normal (Figure 1). After the initial shock in the 2nd quarter of 2020, in subsequent quarters of 2020 and 2021 positive trends were observed in terms of an increase in gross domestic product. The outbreak of the war in Ukraine reversed these positive trends. Unprecedented consequences of the war were observed in many macroeconomic aspects, among others a shock increase in the prices of oil and gas, as well as other raw materials, which resulted in restrictions on production in some sectors and industries, and of huge importance in worsening the economic situation.

Up until the outbreak of the pandemic, the Polish economy had been growing at a good pace, becoming one of the leaders in the European Union, yet as a result of the pandemic crisis, there was a drop in GDP for the first time since the transformation (by 2% in 2020). The year 2021 brought a rapid recovery of GDP by 6.9%, but the Russian aggression against Ukraine caused a considerable slowing down of the Polish economy. This was particularly dangerous for groups that are disadvantaged on the labour market – one such subpopulation are people with disabilities.

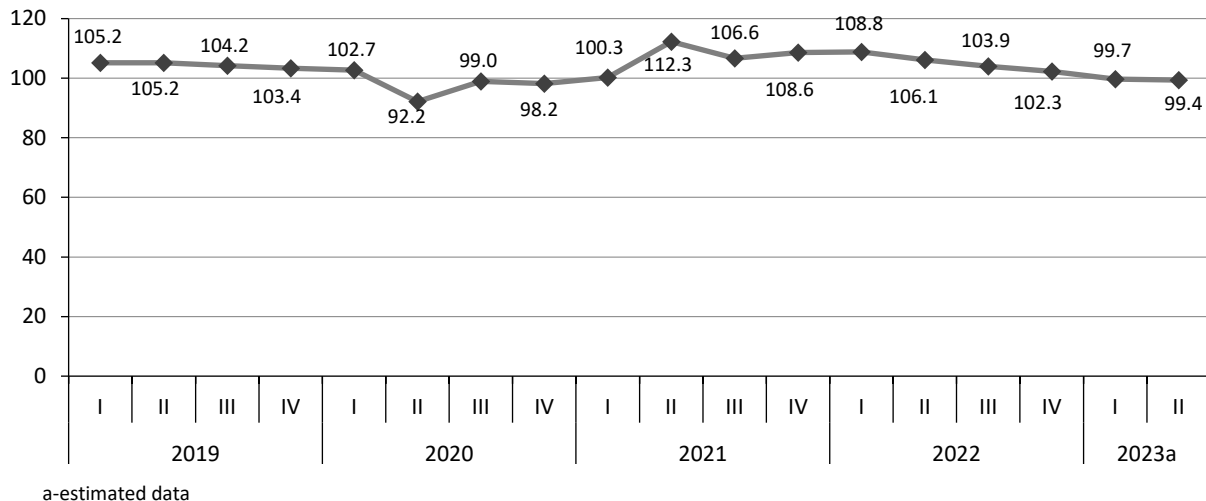


Fig. 1. Dynamics of GDP in Poland at fixed prices<sup>2</sup> quarterly in 2019-2022 and in the 1st and 2nd quarters of 2023  
Source: Central Statistical Office data.

The negative consequences of the war in Ukraine also started to be visible in the sudden rise in inflation (Figure 2). While during the pandemic, inflation rose mainly in the 3rd and 4th quarters of 2021 reaching 8.6%, as a result of the war in Ukraine there was a dramatic increase not seen in Poland for more than thirty years.

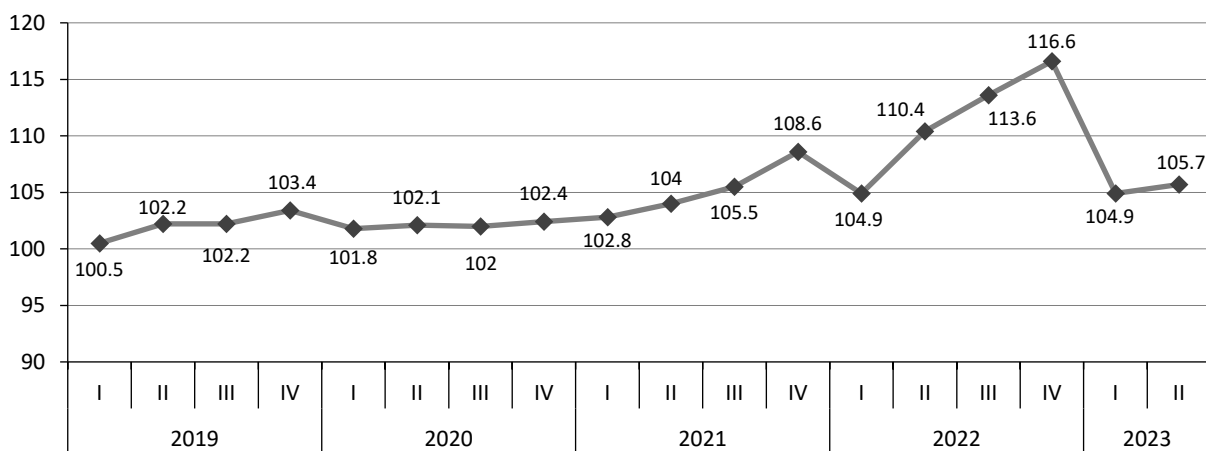


Fig. 2. Quarterly retail goods and services price index in Poland in 2019-2022 and in the 1st and 2nd quarters of 2023  
Source: Central Statistical Office data.

This was confirmed by the base measure, i.e. the consumer price index-CPI (GUS, 2023; Hałka and Leszczyńska, 2011). In the peak period, namely the 4th quarter of 2022, the index reached 116.6% compared to the same quarter the previous year.

Poland, similarly to other countries in the region, was faced with an influx of Ukrainian refugees after 22 February 2022. According to data from the Office for Foreigners, one year after the Russian aggression against Ukraine, almost 1 million Ukrainian citizens were under temporary protection in Poland, mainly women and children. As of 24 Feb 2023, a total of 1.4 million people had valid Polish residence permits

<sup>2</sup> The dynamics indicators were calculated on the basis of average annual prices in the previous year.

(Office for Foreigners, 2023). According to Border Service data, between the 24 February 2022 and 19 September 2023, over 1.57 million people were admitted to Poland. In the same period, 1.4 million people crossed from Poland into Ukraine. This had an enormous effect on the Polish economy, which was struggling with a lack of employees and demographic problems, as well as the poor state of public finances. This was of great importance for the labour market, but also provided an opportunity to support the economy, which in previous years had experienced low unemployment and a lack of workers (especially in cities of over 200,000 inhabitants). A considerable proportion of the refugees from Ukraine who arrived after 24 Feb 2022 expressed the wish to stay in Poland permanently (Zymnin et al., 2022). This therefore should have a positive effect on the economic and demographic situation, increase budget revenue and improve the pension system, as well as support demand and consumption. As a consequence it could have a significant effect on entrepreneurship and self-employment.

### 3. Self-employment among the Fully Abled and People with Disabilities in Poland during the COVID-19 Pandemic and the War in Ukraine

People with disabilities constitute around fifteen percent of the world population (WHO, n.d.). In individual countries, due to the use of varying research methodology, the percentage of people with disabilities in the population as a whole is between ten and fifteen percent (WHO, 2011) and very often this data is purely an estimate or incomplete. In Poland, the percentage of people with disabilities among the population aged 16 and over is 10%. Among the entire Polish population this percentage is higher, at over 12% (PFRON, 2023). As shown in labour market statistics, people with disabilities are generally less competitive as employees, and above all are less economically active (Koza and Politaj, 2021). Other characteristic features of people with disabilities are also their relatively low level of economic and social activity, considerable levels of unemployment and their difficulty in overcoming barriers in social contact. People with disabilities are a highly varied group in terms of their degree and type of disability, and the features that determine their needs and limit the possibilities for independently satisfying such needs (United Nations, 2007).

This was confirmed by the examples of research results presented in Table 2 on economic activity among the Polish population in 2022. Basic measurements relating to the labour market such as the coefficient of economic activity, the employment indicator and the rate of unemployment (according to LFS methodology (Eurostat, n.d.) confirm the considerable differentiation between the situation of people with disabilities and those fully abled on the Polish labour market.

Table 2. Economic activity among people with disabilities against the population of Poland as a whole in 2022 (average annual data)

DETAILS	Total	Economically active population					Economically inactive persons	Activity rate	Employment rate	Unemployment rate
		total	employed persons	working		unemployed persons				
				full-time	part-time					
in thousands							in %			
People with disabilities	2754	541	512	403	109	29	2213	19.6	18.6	5.4
Total population of Poland	29 734	17 240	16 742	15 671	1071	498	12 494	58.0	56.3	2.9

Source: GUS-BAEL.

The data revealed the considerably worse situation of people with disabilities on the labour market compared to the population as a whole aged 15 and over (in the case of people with disabilities this is 16 and over). Particular differences can be noted in terms of the percentage of people who are economically active. In the case of people with disabilities, the coefficient of economic activity was almost three times lower than for the population as a whole over 15 years of age. The unemployment rate among people with disabilities according to a unified research methodology was almost twice that

of the population of Poland as a whole. The indicator of employment among people with disabilities was also over three times lower than for the general population. The data also showed that full-time employment was not sufficiently attractive for this subpopulation to persuade them to enter the labour market. One alternative to working full-time is self-employment. The greater flexibility offered by self-employment in terms of working times, organisation of work and the possibility to better adapt the workplace to individual needs are important arguments in favour of making the effort to conduct business activity in one’s own right.

The data in Figure 3 indicated the increase in interest in this form of economic activity during the COVID-19 pandemic and the war in Ukraine among the population of Poland as a whole aged 15 years and older.

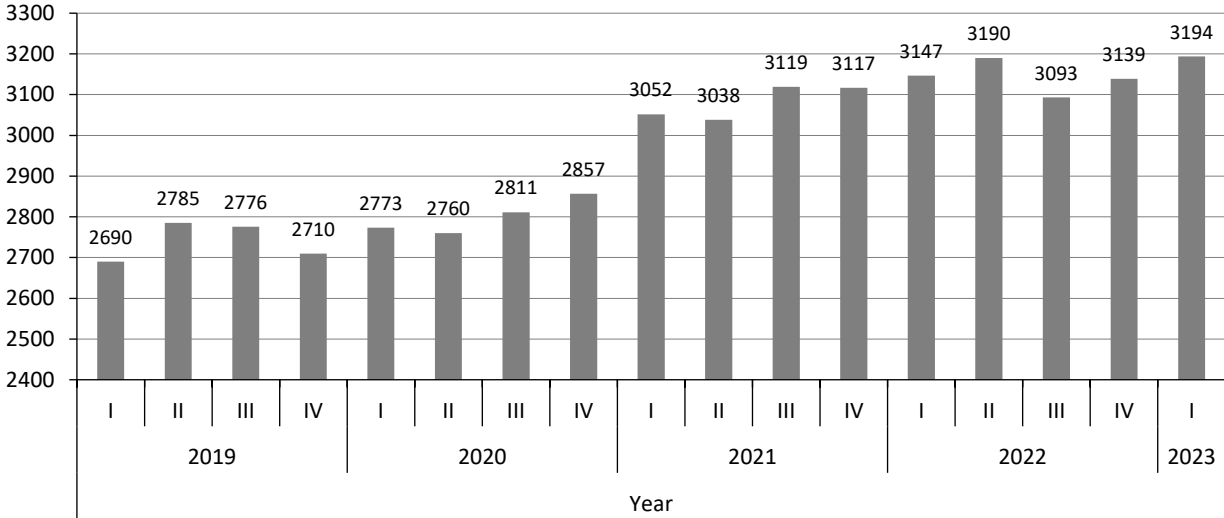


Fig. 3. Self-employed people according to research into the economic activity of the Polish population from the last quarters in 2019-2022 and the 1st quarter of 2023 (data in thousands of people)

Source: GUS BAEL.

The results of research into the economic activity of the population of Poland (BAEL) in the initial phase of the COVID-19 pandemic in Poland (2nd to 4th quarters 2020) reveal that the number of entrepreneurs conducting economic activity dropped minimally in comparison to the same period before the pandemic. The gradual loosening of restrictions and the ‘opening up’ of the economy in 2021, among others as a result of the implementation of a vaccination programme against the SARS-CoV-2 virus responsible for the pandemic, as well as the liberalisation of state policy in terms of limiting social and economic contact, positively influenced entrepreneurship in the form of self-employment, manifested in the increase in the number of self-employed people in 2021. The subsequent macroeconomic perturbations brought about by the outbreak of war in Ukraine in 2022 were noticeable, amongst others, in the temporary drop in the number of the self-employed in the 3rd and 4th quarters of 2022. It was only in the 1st quarter of 2023 that there was a return to the level from before the outbreak of war.

In the opinion of the entrepreneurs themselves, the war in Ukraine has had a varied impact on specific areas of the functioning of enterprises in different sectors of the economy. The results of analysis of the subjective feelings and assessments of entrepreneurs showed that the war mostly affected production, construction and transport firms, which had to deal with broken supply chains, often involving the need to change business partners and sales markets. Companies operating mainly on the home market also felt the effects of the war in Ukraine, whether due to inflation, the high costs of energy or to slackening demand from households. Some firms from the gastronomic and accommodation sector had still not recovered from the negative effects of the COVID-19 pandemic and lockdowns, when further unfavourable conditions appeared as a result of the war in Ukraine (Dębowska et al., 2023).

Research conducted into economic activity and entrepreneurship among people with disabilities in the years before the COVID-19 pandemic demonstrated, amongst others, that statistically – in terms of the percentage of the self-employed among the total economically active population – people with disabilities were more likely to become self-employed and fulfil the ideas of entrepreneurship than fully abled people (Arnold and Seekins, 2002; Koza and Politaj, 2020). Self-employment provides more opportunities for people with disabilities to adapt working conditions to their individual psycho-physical abilities resulting from their disability than it is in the case of full-time employment. Thus, self-employment covers a broader dimension than it is for fully abled people. Apart from a source of income, it is also part of the rehabilitation process, and a way back onto the labour market. In unstable macroenvironmental conditions, these are important arguments in favour of economic activity in this form. However, the statistical data in Figure 4 seemed to contradict this. In the period of worsening of economic and macroeconomic conditions during the pandemic and the war in Ukraine, there was a downward trend regarding self-employment among people with disabilities, which was particularly visible in the period just after the outbreak of the COVID-19 pandemic, further intensified after the outbreak of the war in Ukraine.

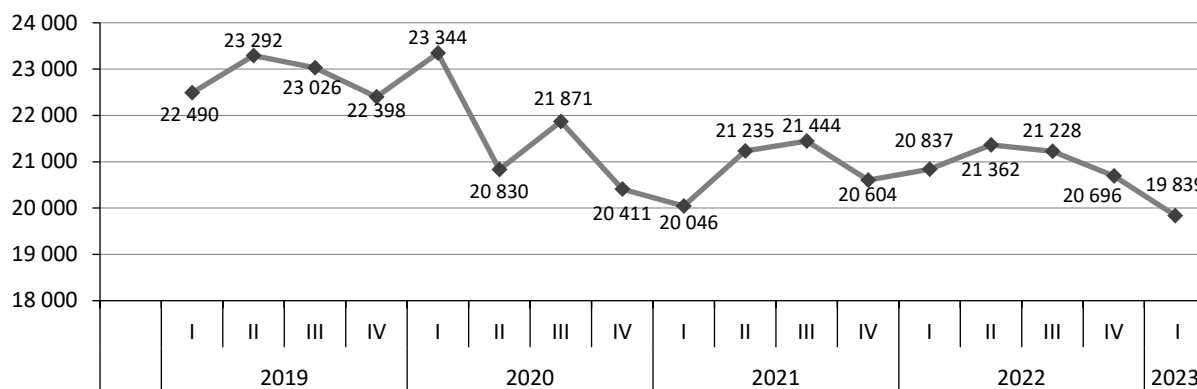


Fig. 4. Self-employed people with disabilities in the last quarters in 2019-2022 and the 1st quarter of 2023

Source: PFRON-SODIR.

Before the pandemic, the number of self-employed people with disabilities was over 23,300, while at the beginning of 2023 it was 3,500 lower. Taking into account the degree of disability of those who were self-employed, the greatest number and the most frequently self-employed were people with a moderate degree of disability (Figures 5 and 6).

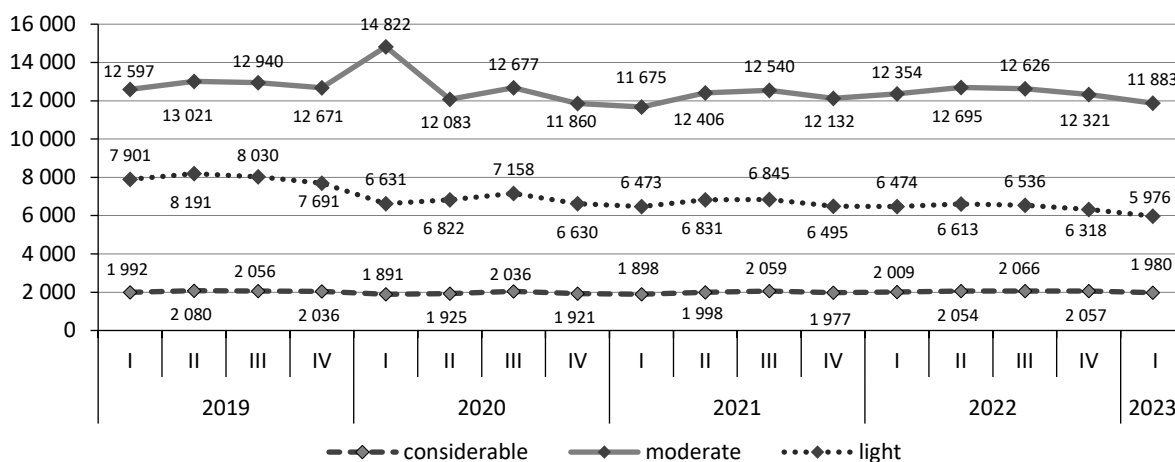


Fig. 5. Self-employed people with disabilities according to degree of disability in the last quarters in 2019-2022 and the 1st quarter of 2023

Source: PFRON data.



A drop in the number of the self-employed was noted in all groups of people with disabilities, with the most being among those with a light degree of disability. Their share of the total number of self-employed people with disabilities also fell. In 2019, they constituted 34-35% of all the self-employed, while in the first quarter of 2023, this was around 30%.

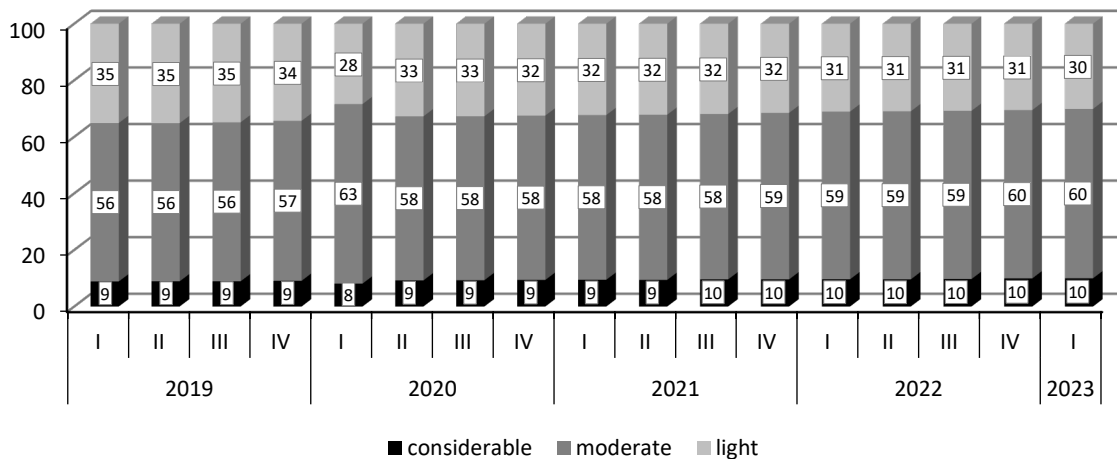


Fig. 6. Total number of self-employed people with disabilities according to degree of disability in the last quarters in 2019-2022 and the 1st quarter of 2023

Source: own calculations based on PFRON data.

Among the remaining subpopulation of people with disabilities conducting their own business activity, the changes were decidedly smaller. Of interest is the fact that in the period of an unstable macroenvironment, the percentage of people with the most severe disabilities rose by one percentage point.

#### 4. Changes in the Macroeconomic Environment and Self-employment among People with Disabilities in Poland

Analysis of the dependencies between basic macroeconomic conditions and self-employment among people with disabilities was based on Pearson’s coefficient (Garren, 1998; Elsevier, 2023) according to the following formula:

Formula:

$$r_{xy} = \frac{\sum(x_i - \bar{x}) \cdot (y_i - \bar{y})}{\sqrt{\sum(x_i - \bar{x})^2 \sum(y_i - \bar{y})^2}} = \frac{\frac{1}{n} \sum x_i y_i - \bar{x} \bar{y}}{\sigma_x \cdot \sigma_y} = \frac{cov(x, y)}{\sigma_x \cdot \sigma_y},$$

where:

- $x_i, y_i$  –  $i$ -th observation values of population  $X$  and  $Y$ ,
- $\bar{x}, \bar{y}$  – mean values of population  $X$  and  $Y$ ,
- $\sigma_x, \sigma_y$  – standard deviation of population  $X$  and  $Y$ ,
- $n$  – number of observations ( $X$  and  $Y$  have the same number of observations).

Pearson’s coefficient determines the linear correlation between two variables, which leads to the classification of correlation into weak and strong. The  $r$ -Pearson correlation coefficient takes values in the range of  $-1$  to  $1$ , showing the strength of the connection. The closer the value is to  $0$ , the weaker the connection. The closer the value is to  $1$  (or  $-1$ ), the stronger the connection. Interpretation of the  $r$  correlation is commonly used in economic research, and is presented below (absolute values) (Rodgers and Nicewander, 1998):

0-0.2 – very weak dependence,  
 0.2-0.4 – weak dependence,  
 0.4-0.6 – moderate dependence,  
 0.6-0.8 – strong dependence,  
 0.8-1 – very strong dependence (Schober et al., 2018).

The research results of the correlation between the number of self-employed persons (people with disabilities and the whole population) and selected parameters characterising the macroenvironment in Poland, confirm that the attitude of entrepreneurs with disabilities often differed from that of all other self-employed persons in Poland in times of unstable macroeconomic conditions (Figure 7).

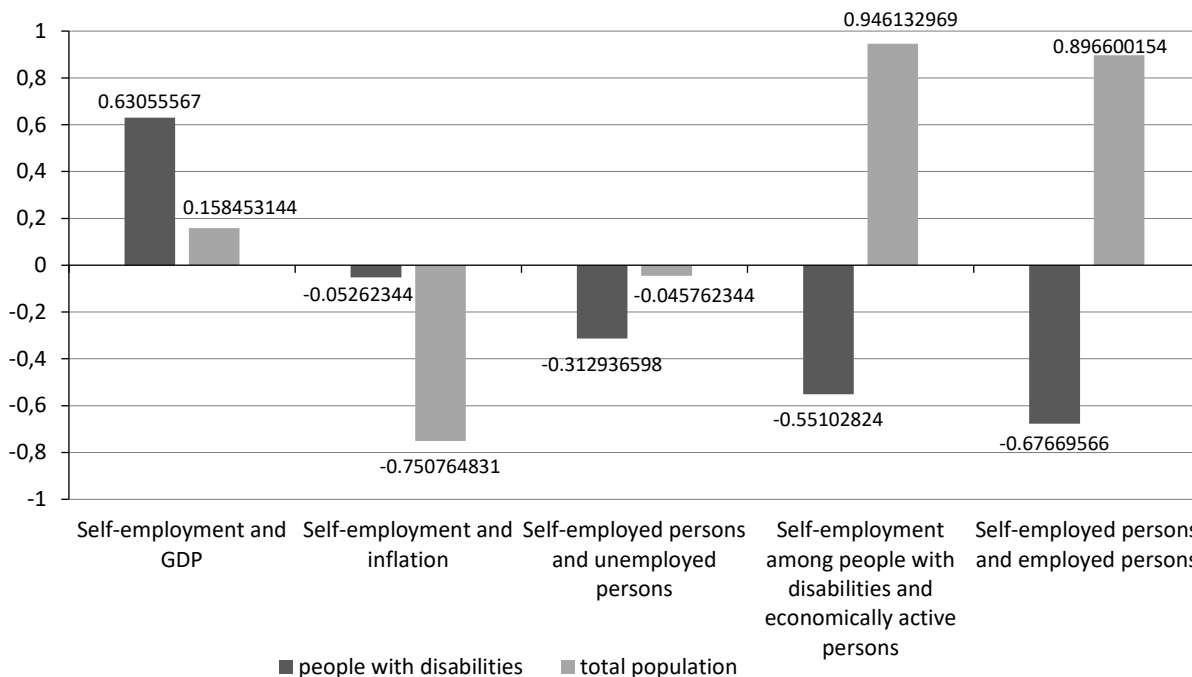


Fig. 7. Pearson’s correlation coefficient of self-employment among people with disabilities and the whole population with selected values characterising the macroenvironment in 2019-2022 and in the 1st quarter of 2023

Source: own calculations.

In the analysed period, a strong positive correlation was noted between the number of self-employed people with disabilities and changes in GDP. In the case of all self-employed persons aged 15 and over, this dependence was very weak. Inflation had a much greater influence on self-employment among all persons aged 15 and over than in the case of self-employment among people with disabilities. For all self-employed persons, there is a clear strong negative dependence. For people with disabilities, this was practically of no importance for those self-employment. Unemployment had a weak impact on self-employment among people with disabilities, while for all self-employed persons the dependence was hardly noticeable (very weak). Of great importance for entrepreneurial attitudes was being active on the labour market, where there was a notably different reaction between people with disabilities and those fully abled. Changes in the number of people active on the labour market showed a moderate negative dependence in terms of the number of self-employed people with disabilities. This variable was of considerably greater importance for self-employed persons as a whole, with a very strong positive dependence among this subpopulation. Similar opposite reactions were observed in terms of the number of self-employed persons compared to the number of working persons. People with disabilities demonstrated an opposite strong dependence between changes in the number of working persons and the number of self-employed persons. A very strong positive dependence was observed in the case of self-employed persons in the total population aged 15 and over.

## 5. Discussion and Conclusions

Entrepreneurs conducting their own business activity often operate in conditions of uncertainty and risk. In this case, such uncertainty is related to the information gap, which is the result of, among others, dynamic changes taking place in the macroenvironment surrounding enterprises, in particular fluctuations in the economic situation, as well as political factors. Self-employed people with disabilities were also particularly in danger of the consequences of operating under conditions of increased risk, especially systematic risk determined by external effects.

The COVID-19 pandemic, which appeared at the end of 2019 in China and then gradually spread to other countries on all continents (Alexander et al., 2020), caused socio-economic consequences unprecedented in the 21st century (Zoumpourlis et al., 2020).

In the initial phase of the pandemic, i.e. in the first half of 2020, there was a collapse of the economic and financial situation of enterprises, in particular those operating in the tourism, hotel and catering industries (Bloomberg, 2023). This occurred due to travel restrictions, closure of public places, including tourist attractions, and advice against travel by individual governments, which tried to limit the spread of the pandemic in a more or less restrictive way. Due to this, many employers decided to dismiss some employees or temporarily suspend their operations (Romm, 2020). In February 2022, Russia's armed attack on Ukraine and the outbreak of a full-scale conflict caused another shock to the global economy (Harris, 2022). The economic restrictions imposed on Russia resulted in the limited availability of many raw materials and brought a sharp increase in the prices of raw materials and goods on the world markets. Additionally, the suspension of food exports from Ukraine caused a sharp increase in food prices and inflation in many countries, as well as a general deterioration of the global economic situation (Bigg, 2023).

The economic consequences of the COVID-19 pandemic and the war in Ukraine undoubtedly had a particular effect on microenterprises. This sector is highly susceptible and sensitive to the effects of changes in the economy. People with disabilities are commonly classified as social groups that are disadvantaged in the labour market and are at risk of exclusion. They are particularly sensitive to changes in the macroenvironment.

Mainstream publications on the situation of people with disabilities on the labour market focus on employment and unemployment, and rarely on entrepreneurship. In terms of entrepreneurship it is difficult to obtain comparable statistical data. The solution to this situation was adopted measuring entrepreneurship through the prism of self-employment (Danieli and Wheeler, 2006; Kidd et al., 2000). One of the few authors who focus in their research on self-employment of people with disabilities is R. Pagán. The results of research by Pagán (2009) conducted in several European countries showed that people with disabilities are more likely to be self-employed compared to other groups. Gaps in self-employment of people with disabilities were particularly notable in southern countries such as Greece and Portugal. The research conclusions indicated an interesting relation between disabilities and self-employment, namely that people with disabilities are much more likely to become self-employed than other groups with fewer limitations or even fully able-bodied people. This means that they use self-employment as an option to accept their condition and reconcile it with professional life in the context of the lack of forms of employment appropriate to their capabilities (Pagan, 2009). Moreover, it was also indicated that self-employment allows these people to become, to a certain extent, independent of the general macroeconomic situation, which is particularly important in the conditions of the COVID-19 pandemic and the war in Ukraine. Self-employment provides an opportunity to achieve both employment and personal goals (Doyle, 2002).

This research into the functioning of enterprises owned by people with disabilities during dynamic macroenvironmental conditions revealed that this sector is especially sensitive to changes in economic conditions. Proof of this can be found in the strong positive correlation of 0.63 between changes in the economic situation measured by GDP dynamics and the number of self-employed people with

disabilities. Changes in GDP had a considerably milder effect on entrepreneurship among the general population aged 15 and over. The level of dependence of this subpopulation was just under 0.16, which indicates a very weak dependence and at the same time the low sensitivity of this sector to this type of change in the Polish economy. Changes in the consumer price index (CPI) had hardly any impact on self-employment among people with disabilities. However, in the case of the total population aged 15 and over, the factor related to price changes had a significant impact on attitudes towards entrepreneurship and self-employment in this subpopulation. A correlation at the level of  $-0.75$  indicated a strong opposite dependence between changes in the consumer price index and the number of self-employed persons. Growth in inflation resulted in a drop in the number of those self-employed, but it was hard to find this dependence among entrepreneurs with disabilities. The reason can be found in the different way that national insurance welfare contributions are financed, which in the case of people with disabilities are reimbursed using PFRON funds; this mechanism does not exist among the remaining entrepreneurs. Thus the price increases that entail higher salaries and the resulting increase in average monthly remuneration, which in turn increases the burden of welfare contributions, mainly affect fully abled entrepreneurs.

Meanwhile, entrepreneurship among people with disabilities is significantly dependent on changes in this group's position on the labour market. In particular, it can be seen that an increase in the number of people with disabilities in work caused a drop in the number of self-employed persons. During unstable macroeconomic conditions, there was a considerable shift among people with disabilities away from self-employment. With a correlation indicator of almost  $-0.68$  (negative correlation), it can be assumed that the drop in the number of self-employed persons is strongly dependent on the increase in the number of people in employment. This is confirmed by the absolute values regarding the move away from self-employment of a considerable number of people with disabilities during unfavourable economic conditions. This problem particularly affected people with light disabilities, who due to their lesser health problems were able to more easily find full-time employment than people with the most severe disabilities. For persons with considerable or moderate disabilities, self-employment seemed to be a means of securing their position in the period of high uncertainty and considerable risk caused by the pandemic and the war in Ukraine. This was in complete contrast to the general population aged 15 and over. The number of self-employed persons simply changed proportionally to the change in number of those working. During the pandemic and the war in Ukraine, the number of self-employed rose at a similar pace to the increase in the total number of people in work aged 15 and over. Similar dependencies could be observed between the number of economically active people and the self-employed. For people with disabilities there was a moderately negative dependence of 0.55. In the case of the total Polish population aged 15 and over, the Pearson's correlation coefficient was at the level of almost 0.95, which indicated a very strong dependence between these variables.

A dependency analysis based on Pearson's correlation coefficient showed significant differences in entrepreneurial attitudes measured by the number of self-employed in reaction to the changes in the macro environment caused by the COVID-19 pandemic and the war in Ukraine. In the case of people with disabilities, the destabilisation of the macroenvironment caused a shift from self-employment to full-time employment, differently than in the case of the total population aged 15 and above. This indicated the greater susceptibility of self-employed people with disabilities to destabilisation occurring in the macroenvironment. The fact that those who gave up self-employment were people with the lightest disabilities (obtaining the least financial assistance from PFRON for refunding the costs of welfare payments in comparison to people with the most severe disabilities) may also indicate that they assessed the above risk to be at an acceptable level in relation to the financial support received from PFRON. For those with a considerable or moderate degree of disability, it was harder to find full-time employment as they were eligible for specific working conditions which often cannot be accepted by employers. In addition, they usually received benefits, which to a certain degree provided financial security in case of the failure of their business. It was therefore easier for them to accept the increased

risk that accompanies conducting economic activity in unstable macro environmental conditions. In light of the literature review and the empirical research, the research hypothesis posed in the introduction was only verified in relation to some self-employed people with disabilities, that is those with considerable and moderate disabilities. However in relation to the total number of self-employed people with disabilities, the hypothesis should be rejected.

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## Przedsiębiorczość osób z niepełnosprawnością w warunkach niestabilnego makrootoczenia

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### Streszczenie

**Cel:** W opracowaniu podjęto próbę poznania, charakterystyki i identyfikacji zachowania się osób z niepełnosprawnością jako przedsiębiorców działających w formie samozatrudnienia w okresie dynamicznych zmian w makrootoczeniu związanych z wybuchem pandemii COVID-19 oraz wojny w Ukrainie.

**Metodyka:** W opracowaniu podjęto próbę identyfikacji czynników wpływających na zmiany w samozatrudnieniu osób z niepełnosprawnością i osadzenia ich w kontekście zmian zachodzących w makrootoczeniu. W szczególności przedmiotem badań stało się ustalenie trendów w samozatrudnieniu osób z niepełnosprawnością na tle ogółu społeczeństwa w wieku 15 lat i więcej wykazywanego w badaniach aktywności ekonomicznej ludności w kontekście wybranych parametrów makroekonomicznych. Na potrzeby opracowania sformułowano następującą hipotezę badawczą: *Przedsiębiorczość osób z niepełnosprawnością jest dobrą alternatywą dla pracy na etacie w warunkach niestabilnego makrootoczenia, gdyż pozwala tym osobom na większą samodzielność decyzyjną i finansową, elastyczność czasu pracy oraz lepsze wykorzystanie swoich indywidualnych cech psychofizycznych niż w przypadku pracy na etacie. Badaniami objęto osoby z niepełnosprawnością samozatrudnione i wykazywane w rejestrach Państwowego Funduszu Rehabilitacji Osób Niepełnosprawnych (PFRON). Przyjęte metody badawcze to: analiza krytyczna piśmiennictwa, analiza statystyczna, metoda indukcyjna oraz analiza zależności oparta na współczynniku korelacji Pearsona.*

**Wyniki:** W świetle przeprowadzonych studiów literaturowych i badań empirycznych nie udało się autorom w pełni potwierdzić sformułowanej hipotezy. Przedmiotowa hipoteza badawcza została zweryfikowana jedynie w stosunku do części samozatrudnionych osób z niepełnosprawnością w stopniu znacznym i umiarkowanym. W relacji jednak do ogółu samozatrudnionych osób z niepełnosprawnością należy ją odrzucić. Podstawowy zakres czasowy badań ustalono na lata 2019-2022 i pierwszy kwartał 2023 r.

**Implikacje i rekomendacje:** Autorzy wskazują na konieczność kontynuacji procesu badawczego w zakresie zachowania się przedsiębiorców z niepełnosprawnością w warunkach niestabilnego makrootoczenia. Niniejsze opracowanie stanowi pretekst do dalszej dyskusji i rozważań w tym zakresie i uzasadnia konieczność weryfikacji przyjętych założeń badawczych w przyszłości wraz z upływem kolejnych lat i pozyskiwaniem nowych danych. Pozwoli to na uniknięcie typowych błędów wynikających z relatywnie krótkiego zakresu czasowego obserwacji.

**Oryginalność/wartość:** Artykuł jest odpowiedzią na potrzeby poznawcze w zakresie funkcjonowania przedsiębiorców z niepełnosprawnością w warunkach gwałtownych zmian makroekonomicznych. W literaturze obserwuje się wyraźny niedosyt w tym zakresie. Niniejsze opracowanie ma również za zadanie wypełnić istniejącą lukę w badaniach naukowych dotyczących sytuacji osób z niepełnosprawnością w Polsce i na świecie.

**Słowa kluczowe:** przedsiębiorczość, osoby z niepełnosprawnością, samozatrudnienie, makrootoczenie

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