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# Evaluation of Barriers to Entrepreneurship Development: A Comparative Student Survey

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## ABSTRACT

**Objective:** The research aimed to answer questions on how students evaluate the external conditions for starting a business in Poland, what variables differentiate their perceptions and whether these evaluations change over time.

**Research Design & Methods:** The surveys were conducted in the years 2016–2017 (517 people) and 2022–2023 (382 people) on a sample of students at the Lublin University of Technology using the same survey questionnaire. The following statistical methods were used to develop the results: descriptive statistics, factor analysis and the Mann-Whitney U test.

**Findings:** The research revealed the existence of four barriers to entrepreneurial development: legal, labour market, financial, and market. The barriers identified were rated higher in study one. Additionally, a pandemic barrier was diagnosed in group two. In the first study, work experience proved to be the variable that most differentiated the assessment of the barrier. The second is the area and level of study and entrepreneurial tradition.

**Implications/Recommendations:** The research shows that both studies identified analogous categories of barriers but with a slightly different structure. The assessments of the perception of business conditions made by the surveyed student-potential entrepreneurs are complemented

by the opinions of already operating entrepreneurs on the impact of the external environment on entrepreneurship development. Knowledge acquired through education and professional work proved to be an important feature influencing the way barriers were assessed. These results can be helpful when making changes to educational programmes concerning business knowledge, internships and work placements.

**Contribution:** Expanding and completing the knowledge of the perception of the impact of external conditions on entrepreneurship development.

**Article type:** original article.

**Keywords:** entrepreneurship barriers, student entrepreneurship, entrepreneurial intentions, entrepreneurship development.

**JEL Classification:** I25, L26, M13.

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## 1. Introduction

The determinants of entrepreneurship development have been an interest of researchers for many years. An assessment of the impact modality should be considered a particularly important aspect of the research conducted, given the importance of entrepreneurs in socio-economic development, including job creation (Skowrońska, 2023). In this context, the relationship between the perception of external conditions and the intention to become self-employed is explored. This problem is particularly relevant for students, who are a group facing a career choice. Every year, nearly 300,000 graduates receive a degree in Poland (GUS, 2023). Running their own business may be an alternative to full-time employment. However, its attractiveness is related to the conditions for starting a business and the possibilities for the company's subsequent growth. At the same time, the assessment of these conditions can change, both due to objective changes in the socio-economic environment and the subjective view of those entering or already operating in the labour market.

This article presents the research results on students' assessment of barriers to running a business. The research subject was:

- identification and evaluation of selected barriers to entrepreneurship, i.e., external environmental factors with negative impacts,
- variations in the evaluation of barriers to entrepreneurship over time and by selected characteristics of respondents.

The following research questions were posed in conducting the study:

1. What barriers to starting your own business do students identify?
2. Does the level and type of knowledge and work experience have an impact on the variations in the assessment of barriers?
3. Do entrepreneurial traditions in students' families have an impact on the differential assessment of barriers?

#### 4. Does the way barriers are assessed change over time?

Due to the short study duration, conducting longitudinal research is difficult, so the research was comparative. It was conducted in 2016–2017 and 2022–2023 among students of Lublin University of Technology. During the period indicated, several changes in the socio-economic environment took place, including those related to the COVID-19 pandemic and the introduction of the so-called Polish Order, a plan to rebuild the Polish economy after the pandemic. However, conducting the research at the same university and maintaining identical sampling criteria allowed at least a partial revealing of the dynamics of the phenomenon under study.

The obtained results made it possible to conclude the existence of four barriers to the functioning of business entities, which can also be applied to starting a business. The research also confirmed the variability of the assessment and barrier constructs over time. The results enabled the identification of characteristics that influenced the variation in respondents' evaluations. These included level and area of study, work experience and entrepreneurial traditions.

This article presents a fragment of the research results on students' entrepreneurial intentions and the factors influencing their attitudes.

## 2. Literature Review

Entrepreneurship can be considered by analysing personality traits, the managerial process, the individual entrepreneur, the market, the economic factors of production and the function of small and medium-sized enterprises (self-employment) in the economy (Wach & Głodowska, 2022). In the latter context, entrepreneurship stimulates economic growth through activation of innovation processes and new job creation (Carree & Thurik, 2010; Wach & Głodowska, 2022). Consequently, the development of entrepreneurship affects the prosperity of society. From this perspective, identifying and examining the impact of various factors influencing the creation of new, and the development of already operating economic entities has become an important issue.

Generally, the determinants of entrepreneurial development can be divided into endogenous and exogenous. The first group includes factors inherent in the entrepreneur and his/her company (Piecuch, 2013). The second case relates to the environmental factors in which business is undertaken or conducted, in particular the macroeconomic environment, market and financial conditions and the geographical environment (Cuervo, 2005). In this aspect, it is possible to discuss the entrepreneurial ecosystem, which includes cultural, social and material elements (Spigel & Harrison, 2018) and economic and political (Urbaniec, 2022). In another approach, environmental factors include political, legal, business, economic and social conditions (Piecuch, 2013; Sendra-Pons, Comeig & Mas-Tur, 2022). The determinants identified can be described as the external dimensions

of entrepreneurial activity conditioning entrepreneurial development (Lundström & Stevenson, 2005). The types of measures taken, reflected in systemic solutions for facilitating the establishment and development of business entities (Leszczewska, 2012; Ministerstwo Gospodarki, 2013), depends on the economic development level of the country in question (Acs & Szerb, 2007) but also the assessment of their current implementation and actual impact. These activities, contrary to the assumptions made, may not support, but hinder and inhibit the development of enterprises. They become barriers both to the functioning of economic entities and to the creation of new ones, preventing the exploitation of perceived opportunities in the environment (Khanin *et al.*, 2022). In the case of the small and medium-sized enterprises (SME) sector, these handicaps tend to be long-term, particularly concerning issues such as changes in the law and its lack of transparency, legal uncertainty or administrative burdens (Belas *et al.*, 2019; Al-Fattal, 2024). Barrier identification based on assessments made by existing, but also potential, entrepreneurs should be the starting point for introducing changes to the adopted system solutions for entrepreneurship development.

Generally, the main barriers to entrepreneurial development include financial, market, legal, social and informational conditions (Zdrajkowska & Zakrzewska-Bielawska, 2006). Barriers related to infrastructure and education (Danielak, Mierzwa & Bartczak, 2017) as well as administrative and legal aspects, including inspections by various institutions, were also mentioned (Grzegorzewska-Mischka & Wyrzykowski, 2017). Extending and detailing the list of entrepreneurial determinants that have a negative impact are the opinions of entrepreneurs expressed in the surveys conducted. Significant barriers include the legal system and fiscal policy, the high cost of raising capital, the shadow economy and strong market competition (Lisowska, 2015), high taxes and social security contributions, high fixed costs of running a business and labour costs, the prevalence of competition and its growth, difficulties in recruiting qualified staff, conflicting legislation and procedures, scarcity of capital for business development (Danielak, Mierzwa & Bartczak, 2017). Similar factors with a negative impact were identified in the Polish Economic Institute's (PEI) survey of micro-entrepreneurs in 2018 and 2019. They revealed that the most important impediments to growth were high taxes and other financial burdens, the increasing cost of employing staff, competition on domestic markets (including from the so-called grey area), problems in recruiting new staff, and the instability of the law, burdensome official controls and inflexible labour laws (Dębkowska *et al.*, 2019, 2020). Financial barriers also included the failure of counterparties to pay debts on time and difficulties in obtaining external funding sources (Dębkowska *et al.*, 2019).

Pandemic situations have proved to be an additional barrier to the operation of business entities from 2020 onwards. Regulations undertaken to limit the spread

of the virus have increased the number of businesses that have suspended their activities (Ligaj & Pawlos, 2021) and have influenced a significant decrease in the economic activity of the remaining entities (Czech *et al.*, 2020; Gorynia & Kuczevska, 2022). The negative impact of the pandemic on the functioning of many economic entities was long-term and associated with a variety of risks (Jedynak & Bąk, 2022). The 2020 PEI research also revealed that the pandemic influenced some changes in the assessment of the barriers indicated by entrepreneurs (Dębkowska *et al.*, 2021).

The presented problem of difficulties in the operation and development of business entities, especially in the SME sector, also applies to future entrepreneurs, i.e., individuals or groups who intend to start a business. The assessment of the conditions for running a business is recognised as one of the factors influencing entrepreneurial intention (Schwarz *et al.*, 2009; Sesen, 2013), understood as the intention to start a business (Engle *et al.*, 2010). External factors change intentions, resulting in a change in the behaviour of the future entrepreneur (Kurczewska, 2010). Negative perceptions of the conditions for starting a business, both at the national (Tarnawa, 2022) and regional level (Bergmann, Hundt & Sternberg, 2016) can result in the abandonment of entrepreneurial intentions, despite positive attitudes towards entrepreneurship (Lüthje & Franke, 2003).

### 3. Methodology

Research on the barriers assessment of entrepreneurship development was conducted in April–May 2016 and November 2016–January 2017. They formed part of a broader study aimed at identifying students' entrepreneurial intentions and the factors shaping them. Another survey was conducted in November 2022–March 2023. The choice of dates was due to the educational organisation of the final semesters of the first and second-degree programmes in which the respondents studied (Arent & Walczyna, 2018). In both cases, a diagnostic survey was conducted using the same proprietary research tool. Based on a literature review and especially on the results of entrepreneurial surveys, it considers the following barriers: the complexity of business start-up procedures, the frequency of changes and the level of complexity of regulations, inspections and their negative effects on entrepreneurs, difficulties in obtaining sources of finance when setting up businesses, excessive budget commitments and running costs, difficulties in obtaining suitable employees and flexible employment, problems in entering and remaining in the market, market competition and unfairness of contractors. In the repeated survey the list of barriers was expanded to include a barrier related to the pandemic. Therefore, the assessment of environmental conditions was made based on 11 items in the first survey and 12 items in the second. Cronbach's alpha reliability coefficients were  $\alpha = 0.74$  in the first study and  $\alpha = 0.63$  in the second, which can be considered an acceptable

level (Kline, 2013). In both cases, removing any of the items would have reduced the consistency of the scale.

Responses were scaled using a five-point Likert scale indicating attitudes to the given statement from “strongly agree” (5) to “strongly disagree” (1).

The following variables were used as variables that could differentiate the assessment of barriers: work experience – little/extensive; employment status – employed/not employed; entrepreneurial tradition – yes/no; level of study – first/second degree; area of study – social sciences/engineering and technical sciences. The selection of characteristics was based on the assumption that both the level of professional experience (past and employment status at the time of the survey) and the type and extent of knowledge possessed, resulting from the level and type of studies, as well as family entrepreneurial traditions, make it possible to gain knowledge about the realities of the environment and therefore also the problems of the functioning of business entities.

The first survey, using a paper survey questionnaire, was conducted among students at three Lublin universities. The sample selection was two-stage: In the first stage, purposive and included students of the last semesters of full-time first- and second-degree management studies, in the second stage, random and included students of the last semesters of full-time first- and second-degree studies in engineering and technical sciences (Arent & Walczyna, 2018). After five years, the survey was repeated among students studying at the Lublin University of Technology, and the selection was again purposive and random, consistent with the assumptions of the first survey. In both cases, a minimum sample size was established (Saunders, Lewis & Thornhill, 2007), which was: in the first survey – 573 people, in the second – 325. In the 2016–2017 survey, the final number of respondents was 729 people (727 questionnaires qualified for analysis), including 517 students of Lublin University of Technology. In the repeated survey, the final number of respondents was 383 people (382 questionnaires qualified). The comparative method was used only for the results obtained in both surveys from respondents of Lublin University of Technology.

Both surveys had a diverse group of respondents based on the characteristics adopted. The structure of both respondent groups was dominated by those without an entrepreneurial tradition (64% in survey one, 59% in survey two), those not working (62% each), and engineering and technical students (72% and 78%). Extensive work experience was held by 51% and 52% of respondents, respectively.

Due to the changes that emerged in higher education between 2016 and 2023, it was impossible to maintain complete consistency in the structure of the survey sample, especially concerning the study level criterion (first-degree students in the first survey 33%, in the second survey 60%). During the period in question, attitudes towards the continuation of second-level studies began to change, with some

people, after obtaining their first degree, starting their careers and abandoning their master's studies, postponing them to a later period or changing their form to part-time study. This is confirmed by the decreasing number of second-degree students (Otto & Nowosielska, 2022).

The following statistical methods were used to answer the research questions: descriptive statistics (mean, standard deviation), factor analysis and the Mann-Whitney U test. Calculations were made using the Statistica Tibco 13.3 package.

#### 4. Research Results and Discussion

The assessment of barriers to starting and running a business varied between the two study groups (Table 1).

Table 1. Evaluation of the Barriers Investigated in the First and Second Study

No.	Variable	<i>M</i>		<i>z</i>	<i>p</i> -value <sup>a</sup>
		First study	Second study		
1	Complicated and unclear procedures for setting up businesses	3.77	3.50	3.99375	<b>0.000065</b>
2	Frequency of change and complexity of regulations	4.05	4.14	−1.99156	<b>0.046420</b>
3	Inspections and their negative effects on entrepreneurs	3.65	3.22	6.04271	<b>0.000000</b>
4	Difficulties in obtaining financing for establishing businesses	3.63	3.42	2.83495	<b>0.004584</b>
5	Excessive budget obligations (taxes, insurance premiums, etc.)	4.20	4.10	1.76933	0.076841
6	Excessive costs of running a business	3.95	3.84	1.90188	0.057188
7	Difficulties in recruiting appropriate staff	3.28	3.08	2.70170	<b>0.006899</b>
8	Problems with flexible employment arrangements	3.12	2.83	4.60853	<b>0.000004</b>
9	Problems with entering and remaining in the market	4.06	3.98	1.58032	0.114034
10	Excessive market competition	3.66	3.29	5.33656	<b>0.000000</b>
11	Contractor dishonesty	3.58	3.27	4.83244	<b>0.000001</b>
12	Pandemic situation <sup>b</sup>	–	4.10	–	–

<sup>a</sup> Bold:  $p \leq 0.05$  (statistical significance), <sup>b</sup> barrier examined only in the second study.

Notes: *M* – mean, *z* – Mann-Whitney U test value for group sizes > 20 (Stanisz, 2006), *p*-value – probability value.

Source: the authors.



Analysis of the results indicated that in survey one, respondents rated the barrier relating to problems with flexible working as the lowest and excessive budget commitments the highest. In the second survey, problems with flexible employment were mentioned again (lowest rating) and the frequency of changes and the level of complexity of regulations (highest rating). The rating of seven barriers was higher in the first study ( $p < 0.05$ ) and one in the second. The student assessments presented are consistent with the survey results of entrepreneurs regarding significant barriers to starting and running a business (Danielak, Mierzwa & Bartczak, 2017; Dębkowska *et al.*, 2019; Maison & Partners, 2020, 2024; Grant Thornton, 2022, 2024).

The barrier regarding the pandemic also achieved a high evaluation in study two. This result is also consistent with the results obtained by other researchers (Rembiasz & Siemieniak, 2021). A pandemic is perceived as a risk factor, with a barrier typically situational and difficult to predict, referred to as a “black swan.” The higher assessment of the barrier regarding the frequency of change and the level of regulatory complexity in the second survey may also be indirectly related to the pandemic. To prevent its effects, the government’s post-pandemic reconstruction programme COVID-19, the so-called Polish Order, was introduced in 2022. The programme involved a series of changes concerning, among other things, tax aspects and universal health insurance, which resulted in an increased burden on one-person business entities (Augustynowicz, 2022).

When comparing the results in the two periods, it is important to emphasise the lack of significant variation in the assessment of the three barriers – those related to the amount of budget commitments, the cost of running a business and entering the market. The similarity of student opinions in both surveys on the negative impact of the determinants indicated can be seen as highlighting their importance for doing business and their long-term nature. These results are confirmed – as noted earlier – by surveys of entrepreneurs, who rank the indicated factors among the significant barriers in subsequent years. It can be considered as an important aspect of the research conducted. Both people with business experience and potential future entrepreneurs evaluate the external conditions of business operations similarly. This is important for the second group since a negative assessment of the environment can affect concerns about running one’s own business, thus causing the abandonment of positive entrepreneurial intentions.

The application of factor analysis made it possible to reduce the number of barriers studied. To conduct it, correlation matrices from both studies were analysed. Then, following the eigenvalue criterion, the percentage of explained variance (Table 2) and a visual assessment of the scatter plot, the number of factors in each study and their components were determined. Four factors were identified for the first study’s results and five for the second.



Table 2. Eigenvalues for the First and Second Study (Extraction Method – Principal Components)

First Study			Second Study		
Factor	Eigenvalue	Percentage of total variance	Factor	Eigenvalue	Percentage of total variance
1	3.082	28.02	1	2.496	20.80
2	1.593	14.49	2	1.532	12.77
3	1.148	10.43	3	1.244	10.37
4	1.010	9.18	4	1.080	9.00
–	–	–	5	0.970	8.09
Cumulative percentage of explained variance		62.12	Cumulative percentage of explained variance		61.03

Source: the authors.

In both cases, the factor loadings of the questions were calculated using Varimax rotations, which indicated the assignment of individual questions to new factors (Table 3 and Table 4).

Table 3. Factor Loadings Matrix after Varimax Rotation for Barriers in the First and Second Study

No.	Factor	Barriers – First Study				Barriers – Second Study				
		B1-1	B1-2	B1-3	B1-4	B2-1	B2-2	B2-3	B2-4	B2-5
1	Complicated and unclear procedures for setting up businesses	<b>0.79</b>	0.02	0.21	0.01	–0.03	0.02	–0.03	<b>0.85</b>	0.12
2	Frequency of change and complexity of regulations	<b>0.77</b>	–0.03	0.29	0.00	<b>0.60</b>	–0.07	0.07	0.50	0.04
3	Inspections and their negative effects on entrepreneurs	<b>0.64</b>	0.30	–0.10	0.21	0.26	0.14	0.17	<b>0.59</b>	–0.10
4	Difficulties in obtaining financing to start businesses	0.27	0.01	0.03	<b>0.72</b>	–0.03	0.26	<b>0.48</b>	0.18	–0.07
5	Excessive budget obligations (taxes, insurance premiums, etc.)	0.24	–0.03	<b>0.74</b>	0.21	<b>0.83</b>	0.10	0.10	–0.06	0.06
6	Excessive costs of running a business	0.20	0.03	<b>0.77</b>	0.14	<b>0.78</b>	0.11	–0.02	0.10	0.13
7	Difficulties in recruiting appropriate staff	0.07	<b>0.86</b>	0.04	0.03	0.10	<b>0.79</b>	0.04	–0.02	–0.05
8	Problems with flexible employment arrangements	0.02	<b>0.78</b>	0.06	0.22	0.10	<b>0.79</b>	–0.03	0.09	0.00
9	Problems with entering and remaining in the market	–0.01	0.24	0.39	<b>0.60</b>	0.25	0.07	<b>0.72</b>	0.07	–0.09

Table 3 cnt'd

No.	Factor	Barriers – First Study				Barriers – Second Study				
		B1-1	B1-2	B1-3	B1-4	B2-1	B2-2	B2-3	B2-4	B2-5
10	Excessive market competition	–0.13	0.20	0.14	<b>0.68</b>	–0.03	–0.07	<b>0.77</b>	–0.04	0.16
11	Contractor dishonesty	0.05	0.37	<b>0.59</b>	–0.12	–0.22	<b>0.41</b>	0.33	0.03	0.34
12	Pandemic situation	–	–	–	–	0.12	–0.03	0.03	0.07	<b>0.91</b>

Notes: B1-1 – first study, first factor, B1-2 – first study, second factor, etc., B2-1 – second study, first factor, B2-2 – second study, second factor, etc. Numbers in bold indicate items assigned to a factor.

Source: the authors.

Table 4. Qualification of the Examined Determinants into Barriers Identified Based on Factor Analysis

Specification	First Study		Second Study	
	Factor	Originally studied determinant	Factor	Originally studied determinant
Legal barrier	B1-1	1, 2, 3	B2-4	1, 3
Labour market barrier	B1-2	7, 8	B2-2	7, 8, 11
Financial barrier	B1-3	5, 6, 11	B2-1	2, 5, 6
Market barrier	B1-4	4, 9, 10	B2-3	4, 9, 10
Pandemic barrier	–	–	B2-5	12

Source: the authors.

Factor analysis revealed four barrier categories (legal, labour market, financial and market) for both studies. Their comparison indicates the similarity of structures. For one construct (market barrier), the students' assessment did not change, and for both studies, the same original determinants after reduction were included in the new factor. In addition to similarities, partial dissimilarities were observed for the three barrier groups. According to the results of the initial survey, the frequency of changes and the complexity of regulations were identified as legal barriers. This can be considered as a broad interpretation of the studied factor by the evaluation respondents. In contrast, the analysis conducted for the second survey indicated that this factor should be classified as a financial barrier. The fundamental changes to the law in 2022 concerning the introduction of the Polish Order and its financial implications can also be indicated as a possible underlying reason. Additionally, the mid-year correction of the regulations has caused further problems with their application. Since some of the students already had professional experience and were working at the time of the survey, the problem of changing regulations and their complexity may have been perceived by them more in terms of financial implica-

tions than in a broader aspect, as was the case in the first survey. Some confirmation is provided by the value of the factor loadings for this determinant in the second survey (B2-1 – 0.60 and B2-4 – 0.50).

The second barrier that was categorised differently in the two surveys was the dishonesty of contractors. In the first study, it was perceived through the financial aspect – it can cause difficulties in enforcing receivables from counterparties and, therefore, financial consequences. In the second study, this condition was classified as a labour market barrier, which is not entirely justified and could result from a lack of broader knowledge about the consequences of unfair behaviour of contractors or a lack of contact with the indicated phenomenon in professional work.

The impact of the different categories of barriers was assessed based on the indices, which are the sum of the scores of the components creating new factors. The minimum and maximum values of the indices varied due to the number of components forming new factors in both studies (Table 4). For the three original conditions creating a new barrier, an index value of up to 6.5 was considered a weak impact, 6.5 to below 10.5 – an average impact, and 10.5 and above – a strong impact. With the two original factors forming a new factor, the strength of influence was rated as follows: up to 4.5 – weak influence, from 4.5 to below 7.5 – average influence and from 7.5 – strong influence. For the impact of the pandemic barrier (second study only), a weak impact was assumed for values up to 2.5, an average impact for values between 2.5 and 3.5, and a strong impact for values above 3.5. The following ranges were adopted for total barriers (excluding the pandemic barrier): 11 to under 25, 25 to under 40, 40 to 55.

Table 5. Evaluation of Barriers after Reduction in the First and Second Study

Variable	First Study			Second Study		
	Index – mean	Influence	<i>SD</i>	Index – mean	Influence	<i>SD</i>
Legal barrier	11.47	strong	2.105	6.67	average	1.561
Labour market barrier	6.39	average	1.656	9.16	average	1.930
Financial barrier	11.73	strong	2.052	12.05	strong	2.082
Market barrier	11.34	strong	2.169	10.66	strong	2.049
Pandemic barrier	–	–	–	4.10	strong	1.040
Barriers in general	40.94	strong	5.421	42.65	strong	5.070

Source: the authors.

In both surveys, the impact of the vast majority of barriers was rated as strong, with a relatively high agreement among respondents (Table 5). Only the labour market barrier in both surveys and the legal barrier in the second survey were

average. In the case of the labour market barrier, the result may be a consequence of the structure of respondents in terms of their work experience and employment status at the time of the survey. However, half of the students participating in the study had no work experience, while less than 40% declared that they had a job. Consequently, a significant number of respondents had no exposure to the problem of entrepreneurs finding and hiring employees and, therefore, no knowledge of the difficulties involved. Simultaneously, the obtained result corresponds to the entrepreneurs' opinions, indicating problems related to the labour market after legal and financial barriers (Dębkowska *et al.*, 2019, 2020, 2021). Although the results obtained are consistent both in the two groups of respondents and with the opinions expressed by entrepreneurs, the survey made it possible to partially demonstrate that the construct of individual barriers can be variable over time. A different assessment of the individual factors that create barriers can be influenced by phenomena occurring in the environment (in this case – the pandemic), but also by the knowledge and professional experience of respondents.

An examination of the differences in the barrier assessment according to the adopted criteria showed that in both periods, significant discrepancies occurred only in some cases (Table 6).

Table 6. Variation in the Evaluation of Barriers According to the Adopted Criteria (Mann-Whitney U Test)

Variable	Criterion	$z$	$p$ -value
First study			
Labour market barrier	work experience	2.09984	0.035744
Financial barrier	employment status	3.03824	0.002380
	work experience	3.44625	0.000569
	level of study	-2.47896	0.013177
Barriers in general	work experience	2.33008	0.019802
Second study			
Labour market barrier	area of study	0.00000	0.032000
Financial barrier	level of study	-3.87632	0.000106
Pandemic barrier	traditions of entrepreneurship	-2.44722	0.014397

Source: the authors.

In the first survey, work experience, employment status and level of study proved to be the differentiating variable for the assessment of barriers (labour market, financial, general). In the second study, only area (labour market barrier) and level of study (financial barrier) proved to be the differentiating variables. Generally, these results indicate the importance of knowledge (both studies) and work experi-

ence (first study) in assessing the external determinants of starting a business. In the first study, respondents with extensive work experience and who were employed at the time of the survey rated the impact of the barriers indicated higher, which may reflect their better knowledge of the realities of the operation of businesses and the practical problems involved. Higher levels of knowledge, resulting from education but also greater work experience, characterise those studying at the master's level, which may be the reason for the higher assessment of the financial barrier. In the second study, the area of study was also a differentiating feature for the labour market barrier – respondents studying for a management degree rated the negative impact of the indicated condition lower. This is related to the greater extent of business knowledge included in the curriculum of these degree programmes than in the case of courses categorised as engineering and technology. This enables a more objective assessment to be made of environmental conditions. Entrepreneurial traditions only differentiated the assessment of the pandemic barrier. Respondents with entrepreneurs in their immediate environment rated the level of negative impact of this condition lower. Their assessment can be considered more objective and based on knowledge of the practical effects of the pandemic on economic practice. The restrictions on limiting the spread of the virus have not affected all industries. The vast majority of businesses continued to operate, although under epidemic restrictions. For this reason, the evaluation of this respondent group was slightly lower, and the difference was proved to be statistically significant. Comparison of the obtained survey results on barriers to entrepreneurship is difficult due to the variety of barrier catalogues used by researchers. Nevertheless, it is possible to see some similarities in the assessments regarding the financial barrier. The analyses indicate that variables such as educational level and entrepreneurial traditions play a crucial role in differentiating students' assessments of this barrier. Studies by Shahzad, Saleem and Fatima (2024) and Wyrwa and Sołtysiak (2016) indicate that there are converging elements, especially regarding the impact of education and entrepreneurial traditions on perceptions of the financial barrier.

A study was conducted to compare the assessment of barriers in two different periods using constructed indices. Due to changes in the qualification of the original determinants in the first and second surveys, a comparison was only possible for the combined assessment of barriers and the market barrier created by the same factors in both periods. In the second case, to ensure comparability of results, the assessment of the pandemic barrier was eliminated from the indices calculated for all barriers. The comparison resulted in the finding of significant differences in assessment (Mann-Whitney U test) for both the market barrier ( $z = 4.81780$ ;  $p = 0.000001$ ) and total barriers ( $z = 6.78616$ ;  $p = 0.000000$ ). Although the assessment of the impact intensity of both barriers was interpreted as strong, the two groups of respondents perceived the environmental conditions slightly differently.

## 5. Conclusions

The research resulted in answers to the research questions formulated. The types and assessment of barrier intensities to student self-employment and their variation by selected respondent characteristics are presented. The research also indicated similarities and differences in the student assessment of Lublin University of Technology in both periods. However, it is not entirely possible to answer the last of the questions concerning the variability of barriers over time. The diagnosed discrepancies in respondents' opinions may result from the diversity of the two groups surveyed. This constitutes a limitation. At the same time, the difficulty of conducting longitudinal studies among students should be indicated, as their time at university is relatively short, ranging from three to seven semesters. Surveying the same group of respondents would make it possible to identify actual changes in how external environment conditions are assessed and, therefore, systemic solutions aimed at potential entrepreneurs. Nonetheless, based on the results obtained, it is possible to outline the general direction of the necessary changes, which are also emphasised by the entrepreneurs themselves (Maison & Partners, 2023). These include, above all, further reducing the impact of the three highest-rated barriers: legal, financial, and labour market. Simplifying regulations, especially tax regulations, but also stabilising the law, reducing the financial burden imposed on entrepreneurs (e.g., extending the period of application of the start-up tax credit or so-called preferential social security contributions), making labour laws more flexible are examples of solutions that – at least in part – should improve the business environment, thereby encouraging newcomers to realise their positive entrepreneurial intentions.

Another limitation of the research conducted is the research sample in both studies is from one university (the same limited range of courses) and one academic centre. Among other things, this means that comparisons between regions in the country are impossible, while some of the barriers (e.g., the labour market barrier) may be regional.

The research shows that an important characteristic that influences the way barriers are assessed is knowledge, both from education and acquired through work experience. This issue seems to require further exploration for its practical aspect. Undertaking work during their studies facilitates students' entry into the labour market and accelerates their careers, although it can cause difficulties in combining education and employment. It also allows for learning about economic realities and, therefore, a more objective assessment of the determinants of entrepreneurship and, thus, the attractiveness of running one's own business as an alternative career path. As it appears, this is an aspect that universities should consider when changing their approach to shaping students' entrepreneurial competencies. This involves changes in the study programmes, which should broaden and deepen

knowledge and skills in business, especially from issues indicated in studies as barriers to entrepreneurship. The increase in competencies can also be achieved by tightening cooperation with business environment institutions (including science and technology parks, business incubators, training and consulting centres, and entrepreneurship support centres), whose purpose is to provide broad support to already functioning companies, but also newly created entities (Hołub-Iwan *et al.*, 2023). The organisation of internships, apprenticeships, study visits, competitions for business ideas, innovative products or technological solutions, and consulting are examples of activities that can be cooperatively implemented by various types of institutions operating in the environment of universities and in cooperation with universities. Entrepreneurs who successfully operate in the market can play an important role in this. Involving them in the educational process, for example, by sharing their own experiences, knowledge, and skills, should also increase students' competencies and reduce concerns about their business activities. Importantly, the given examples of activities are implemented, although their scope and range vary, and they are not always conducted in cooperation with environmental institutions. It seems that cooperation of this type and more intensive promotion of information on available support forms in starting and running businesses could significantly increase students' interest in business activities. After all, future entrepreneurs must be fully aware of existing support opportunities, as often the lack of knowledge in this area can also be a significant barrier to business initiatives.

The results also indicate a potential direction for further in-depth research, which should become, on the one hand, the search for other external factors (in addition to those analysed) that may have an impact on supporting or hindering the decision to start a business, and on the other hand, the identification of internal barriers that cause the abandonment of positive entrepreneurial intentions, especially among students.

### **Authors' Contribution**

The authors' individual contribution is as follows: Each contributed 50%.

### **Conflict of Interest**

The authors declare no conflict of interest.

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