SYLWAN 168 (3): 220-231, March 2024
https://doi.org/10.26202/sylwan.2023089
Journal homepage: https://sylwan-journal.pl

ORIGINAL PAPER

Case study: The impact of changes in the environment of enterprises on the activity of forest service sector companies in 2019-2022 in the Regional Directorate of the State Forests in Zielona Góra

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ABSTRACT

The environment of present enterprises is increasingly complex and changing. This also applies to the environment of companies in the forest service sector. The aim of the study was to assess the activity of companies providing services in the field of forest management in the area administered by the RDSF in Zielona Góra from 2019-2022 against the background of identified changes in the environment. In order to carry out the research, a database of enterprises was created. It consisted of entities listed as 'contractors who submitted their offers' in 'notification of the best bid selection' which were collected from the procedures of public procurement in the field of forestry (forest cultivation, forest protection including fire prevention, harvest and skidding of timber, soil preparation, nursery works and seed collection) for the years from 2020-2023. The database consisted of 172 firms that participated in 139 tender procedures in 20 forest districts. Based on the analysis of tenders for forest services, the activity of forest companies was assessed. The detailed analysis included the number of enterprises active in proceedings, the participation of companies in consortia (including the number and composition of consortia and the number of bids submitted by consortia), and companies acting individually in each year. Offers in proceedings for forest services in the RDSF in Zielona Góra from 2019-2022 were submitted by an average of 108 companies per year. It was observed that 81% of companies operated in consortia. The percentage share of offers on specialized suites submitted by individual companies exceeded the percentage share of offers on specialized suites submitted by consortia each year and accounted for an average of 62%. Factors with a key impact on the company's development such as the introduction of pandemic restrictions, increases in fuel prices, increases in the number of suites, or the lack of non-price criteria in procedures for the award of contracts for forest services could have reduced the activity and changed the dynamics of cooperative activities of companies from the forest services sector. The reduction of the amount of work to be carried out within a single suite and the lack of non-price criteria may further reduce consortium activities.

KEY WORDS

enterprise, forest market, public procurement, tenders

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Received: 3 October 2023; Revised: 13 December 2023; Accepted: 25 March 2024; Available online: 10 May 2024

Introduction

Each economic entity operates in a specific environment (Ciekanowski *et al.*, 2018). The environment of present day enterprises is increasingly complex and in the process of change (Śnieżek, 2016). This also applies to the environment of companies in the forest service sector (Szewczyk, 2021). Proper and quick identification of environmental factors, anticipating future changes and the ability to adapt efficiently to changing conditions adds to the strength and competitiveness of the company (Królik, 2017).

The environment creates a set of factors that can be either stimulators or barriers to the development of micro, small and medium-sized enterprises. These factors have a significant impact on the creation, survival, functioning and development in the different phases of the enterprises life cycle (Wach, 2010).

The COVID-19 pandemic was a key factor affecting both the economic activity of enterprises and the daily functioning of society. In the first quarter of 2020, many governments introduced radical restrictions on social and economic activity as well as barriers to crossing borders which have significantly contributed to the decline of international trade benefits. The effects of the resulting conditions were reflected inter alia in the emerging disturbances in raw material and semi-finished product supply, a decline in production, the implementation of new orders, and reduction or cessation of investment (Dziawgo, 2022).

An equally important economic factor is fuel prices. Rising fuel prices undoubtedly increase production costs and, consequently, an increase in the price of final goods (Leszkiewicz-Kędzior, 2015).

The forecasted lack of skilled labour in the forest services sector is one of the threats related to the socio-demographic area (Kastenholz, 2011) which may encourage entrepreneurs to implement technical solutions and move away from performing work with manual labour (Szewczyk, 2021).

This trend is part of recommended by the ordering party in proceedings for the award of a contract for forestry services mechanical harvest of timber in separate parts of subject of the contract (suites), covering only activities related to with harvesting and skidding (Decyzja, 2018, 2019, 2020, 2021). Changes in tender procedures, especially regarding the criteria used for the evaluation of bids and their weighting, may also affect the activity of companies in the forest services market (Glazar and Polowy, 2017; Szewczyk, 2020; Zastocki *et al.*, 2021, 2022; Rutkowski *et al.*, 2022).

The need to take into account changes is closely related to the identification of phenomena existing in the environment that affect the development of enterprises (Zygmunt and Zygmunt, 2016). The aim of the study was to assess the activity of companies providing services in the forest management field in the area administered by the RDSF in Zielona Góra from 2019-2022 against the background of identified changes in the environment.

Material and method

Based on the observation of the environment of companies in the forest services sector and using the significance of changes taking place in the period from 2019-2022 as selection criteria compared to 2018 as the base year, key factors with an impact on the development of enterprises were identified (Glazar and Iwanicki, 2016; Szewczyk, 2021). The factors that may affect the activity of forestry companies include:

1. Introduction of socio-economic restrictions as a result of the COVID-19 pandemic.
2. Increase in fuel prices.

3. Increase in the number of suites, including mechanical harvesting and skidding suites.
4. No non-price criteria in procurement procedures for forest services performed from 2022-2023.

In order to carry out the research, a database of enterprises was created. It consisted of entities listed as 'contractors who submitted their offers' in 'notification of the best bid selection' collected from the procedures of public procurement in the field of forestry (forest management, forest protection including fire prevention, harvest and skidding of timber, soil preparation, nursery works and seed collection) from 2020-2023. The database consisted of 172 firms that participated in 139 tender procedures in 20 forest districts. The database includes the following categories of data:

1. Business name of the entrepreneur/enterprise.
2. Registered office of the entrepreneur/enterprise.
3. Place of submission of tenders (forest district).
4. Year of submission of the offer.
5. Entity in the proceedings (individual contractor/consortium member).
6. Type of offer submitted (general suite offer/specialist suite offer).
7. Number of bids submitted.

Based on the analysis of participation in proceedings, the activity of companies in the forest services market from 2019-2022 was assessed. The detailed analysis included:

1. Number of active enterprises (submitting tenders in a given year), inactive (not submitting tenders in the next analysed year) and new (not submitting tenders in the previously analysed year) in individual years.
2. Participation of companies in consortia, taking into account the number and composition of consortia together with an analysis of the structure of consortia by the number of members, companies by participation in consortia and consortia participating in more than one proceeding due to the number of proceedings based on selected positional descriptive parameters.
3. Number of bids submitted by consortia and companies acting individually including suites covering all forest management tasks (general suites) and specialist suites which include: forest cultivation, fire protection, harvesting and skidding of timber using specialized machines, soil preparation, nursery work, seed collection, hunting and meadow management.

In addition, an analysis was made of the suites into which the contracts in the first procedures from 2020-2023 were divided into number and type (general suites, specialist suites, harvesting suites).

Results

Offers in proceedings for forest services in the RDSF in Zielona Góra from 2019-2022 were submitted by an average of 108 companies per year. The core of the sector consisted of 59 companies. These were companies active in proceedings in each year of the analyzed period. The highest number of new companies (not submitting bids in the previous year) was recorded in 2022 (29 companies) (Fig. 1) with 17 of them were registered with an office outside the area administered by the RDSF in Zielona Góra. It was found that 81% of companies operated in 148 consortia, 42 companies were active in both consortia and individually (Table 1, 2). Consortia were most often

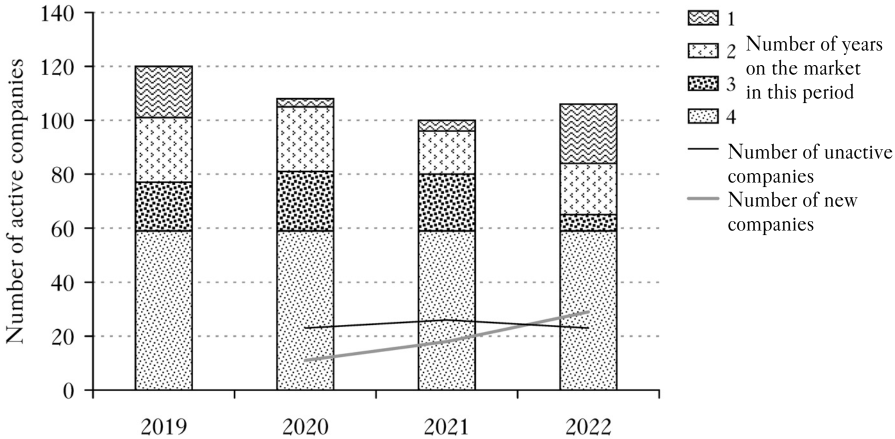

Fig. 1.

Experience of forest companies in Regional Directorate of State Forests in Zielona Góra as related to tender activity in the years from 2019-2022

Table 1.

Percentage of forest service sector enterprises from Regional Directorate of State Forests in Zielona Góra, acting in consortia and individually in 2019-2022

Analysed years	2019	2020	2021	2022	2019-2022
Companies working together only as a consortium [%]	73	69	59	51	57
Companies working both as a consortium, and individually [%]	9	12	15	19	24
Individual companies only [%]	18	19	26	30	19

Table 2.

Basic characteristic of forest service sector consortia from Regional Directorate of State Forests in Zielona Góra, in 2019-2022, concerning the number of members

Analysed years	2019	2020	2021	2022	2019-2022
Number of consortia	73	53	47	50	148
Minimal numer of members	2	2	2	2	2
Maximal numer of members	10	7	5	4	10
Mode	2	2	2	2	2
Median	3	2	2	2	3
Quartile Q_1	2	2	2	2	2
Quartile Q_3	4	3	3	3	4
Quartile deviation Q	1.00	0.50	0.50	0.50	1.00
Coefficient of variation V_Q [%]	33.00	25.00	25.00	25.00	33.00
Skewnees coefficient A_s	0.00	1.00	1.00	1.00	0.00

formed by two entities. In the case of 50% of the consortia, the number of entities forming them did not exceed 3, and of those 75% included only 4. The average deviation from the middle half of a distribution was 1.00 from which could be concluded that the consortia were moderately statistically diversified based on the number of members. The skewness coefficient equaled 0 which would indicate that the distribution was symmetrical (Table 2).

Out of the surveyed firms, 83 companies (59%) participated in more than one consortium. In the case of 48 companies, the number of consortia in which they operated did not exceed 3. The skewness coefficient equaled 0 which would indicate that the distribution was symmetrical. Nearly half (46%) of consortia participated in more than 1 proceeding and most often in 2 proceedings. The number of tender procedures did not exceed 4 for 75% of consortia (Table 3). The remaining consortia were set up only for a particular tender.

The percentage share of specialized suite offers submitted by individual companies exceeded the percentage share of offers of specialized suites submitted by consortia each year and accounted for an average of 62%. In the case of consortia, it was 55% (Fig. 2).

The average number of suites participating in forestry procedures per forest district increased from 8 for 2020 to 10 for 2023. The share of specialist suites in total suites increased from 43% in 2020 to 71% in 2023, while the share of harvesting suites in specialist suites increased from 52% to 58%, respectively (Table 4).

Table 3.

Basic characteristics of forest service sector companies related to participation in consortia and consortia submitting offers in more than one tender procedure acting in Regional Directorate of State Forests in Zielona Góra in 2019-2022

Specification	Companies acting in consortia	Consortia participating in more than one tendering procedures
Number	140	68
Minimal participation in consortia/ Minimal number of tendering procedures	1	2
Maximal participation in consortia/ Maximal number of tendering procedures	30	25
Moda	1	2
Median	2	3
Quartile Q_1	1	2
Quartile Q_3	3	4
Quartile deviation Q	1.00	1.00
Coefficient of variation V_Q [%]	50.00	33.00
Skewness coefficient A_s	0.00	0.00

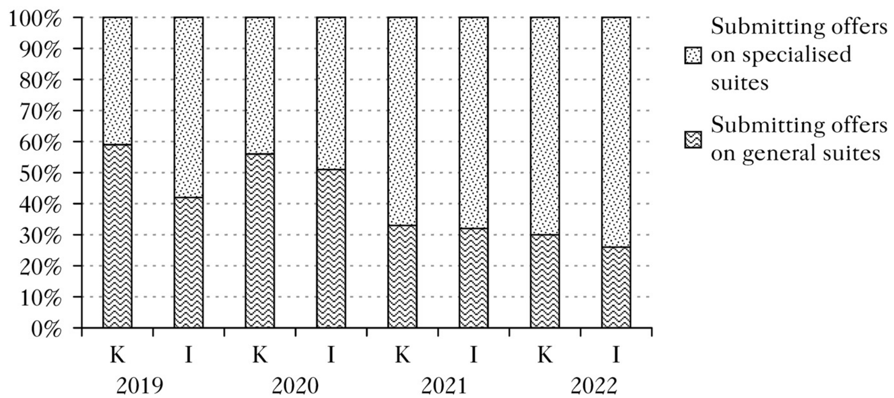

Fig. 2.

Percentage of submitting offers on specialized suites and general suites by consortia (K) and individual companies (I) in forest service sector from Regional Directorate of State Forests in Zielona Góra in the years from 2019-2022

Table 4.
Suites in procurement procedures for forest management services performed from 2020-2023 in 20 forest districts of the Regional Directorate of State Forests in Zielona Góra (applies to the first procedures)

Analysed years	2020	2021	2022	2023
Total numer of suites	159	160	180	206
Number of specialist suites	69	78	99	147
Number of harvesting suites	36	41	58	85

Discussion

The average annual activity of companies out of 108 entities is 34 enterprises less compared to the previously analysed period from 2011-2018 which totaled 142 entities (Szewczyk, 2020). From the core 36 companies active annually in the sector defined in that period of time, 22 entities remained. Based on individual business activity status verification in the Central Register and Information on Economic Activity (CEIDG) carried out in March, 2023, it was found that out of the missing 14 companies, five ceased to operate (1 in 2018, 2 in 2021, 2 in 2023). As a result, they were removed from the register. Further, one company suspended operations in 2021 and four companies provide services in the area of RDSF in Wrocław despite the company's registered office remaining in the area administered by RDSF in Zielona Góra. The remaining four companies had the status of an active company despite the lack of activity and in accordance with the adopted methodology of public procurement procedures for forest management services in the RDSF in Zielona Góra in the areas administered by the remaining 16 directorates. This gives rise to the assumption that these entities may provide services as subcontractors or are active in other areas of economic activity.

The decrease also applies to cooperative activities. The number of companies operating in consortia decreased from 82% in 2019 to 70% in 2022. At the same time, an increase in the number of companies submitting individual offers in parallel to the activities of the cooperative was observed (from 9% in 2019 to 19% in 2022). For the aforementioned period analysed (Szewczyk, 2020), a decrease in the number of consortia was observed (in 2018 there were 114), while at the same time observing greater stability in terms of their structure. Of the 47 and 50 consortia active in 2021-2022, respectively, 18 formed the same entities in the same compositions. The maximum number of entities forming consortia also decreased from 10 in 2019 to 4 in 2022. The percentage of consortia participating in more than one procedure increased from 21% in the period from 2011-2018 to 46% in 2019-2022. In the research period from 2011-2018, it was found that the presence of mechanical harvesters of timber suites (in the proceedings for 2019 suites accounted for 40% of all specialist suites) and non-price criteria (in particular independent performance of the contract) were conducive to the consolidation of enterprises as related to the proceedings for forest services. Of the companies active in 2018, 22% were entities appearing in the eight-year analysis covering the area of RDSF in Zielona Góra for the first time. Almost half of them submitted offers for mechanical harvesters of timber suites of which 75% (12 entities) were companies with registered offices outside RDSF in Zielona Góra and operating in consortia (Szewczyk, 2020).

The average number of suites in forestry procedures per forest district increased from 8 in proceedings in 2020 to 10 in 2023. The share of specialist suites in total suites increased from 43% in 2020 to 71% in 2023, while the share of harvesting suites in specialist suites increased from 52% to 58%, respectively. The increase in the number of suites, including specialist suites in subsequent years and the related reduction in the size of work to be carried out per suite, resulted in an increase in the activity of individual entities. A smaller amount of work means that it is easier for a single entity to meet the conditions for participation in the proceedings such as the economic or financial situation of the company or its experience. Increasing the size of suites promotes activity in consortia (Szewczyk and Polowy, 2020).

The average percentage share of offers submitted for specialist suites by individual entities increased from 40% (2011-2018) to 62% (2019-2022). The increase in the number of specialist suites in proceedings for forest services performed from 2020-2023 also resulted in an increase in the share of offers submitted for specialist suites by consortia. The average share of offers submitted for specialist suites by entities operating as part of cooperative activities recorded in the period from 2011-2018 increased to 55% in 2019-2022. Non-price criteria present in proceedings for forestry services also favoured cooperative activity. In the analysed period from 2011-2018, the last three years are noteworthy as the number of operating consortia was the highest in the entire analyzed period, and the share of companies operating in consortia exceeded 80%. At that time, the dominant criteria were the implementation of the subject of the contract with the help of persons employed under an employment contract (with a weight of 20%) and independent performance of the contract (in the last two years with a weight of 40%) (Szewczyk, 2020).

The observed downward trend in the activity of companies in the forest services sector could have been influenced by the coronavirus pandemic, which resulted in a decrease in the volume of wood raw material obtained in the State Forests in 2020 as a result of strong macroeconomic disturbances and in the wood sector, among others (Analiza, 2021).

The decline in demand and the reduction in the activity of production plants contributed to a decrease in the revenues of many companies and an increase in bankruptcies and restructuring proceedings (Pamulska *et al.*, 2021; Dziawgo, 2022; Potyrańska, 2022). In order to more effectively protect financial liquidity and jobs, support for enterprises was offered by aid programs in the form of so-called ‘anti-crisis shields’. Additionally, some companies reduced spending by reducing employment (Dziawgo, 2022). Employing part-time or unregistered workers is a mechanism often used to reduce business costs, which were increasing as a result of the increase in fuel prices (Rummukainen *et al.*, 2006; Zastocki *et al.*, 2012; Kocel, 2013a, b; Wyrzykowski, 2014).

The cost of fuel consumption in the total cost of operating hours can be up to 40% and depends on the type of machine, working conditions and operator experience (Szewczyk and Kulak, 2013). This results in high sensitivity of forestry services costs to changes in fuel prices.

Fuel costs depend on market prices of oil and gas which is usually in US dollars. Therefore, it is necessary to take into account currency risks as well. The risk of political change and conflicts as well as wars in the world are of similar importance (Iwaszczuk, 2021).

The increase in fuel prices was forecast by Szewczyk (2021) which resulted in changes in the environment of enterprises providing forest management services. In 2022, as a result of colossal increases in fuel and energy prices many contractors implementing contracts based on public procurement law demanded their annexation (PZPL, 2022). Social concern was caused by the prospect of further increases which could have an impact on the activity of companies in the forest services sector. Many companies in precarious situation, in order to ensure the company’s financial liquidity, develop further types of activity related to forest management such as woodworking or timber trade (Szewczyk and Polowy, 2020).

Factors with a key impact on the company's development such as the introduction of pandemic restrictions, increases in fuel prices, increases in the number of suites, or the lack of non-price criteria in procedures for the award of contracts for forest services could have reduced the activity and changed the dynamics of cooperative activities of companies from the forest services sector.

Analysis of environmental factors is a basic element related to the function of any organization. It is important to take into account individual dimensions of the environment such as the economic, political, legal, cultural and social as well as the competitive environment. Flexibility and the ability of firms to adapt efficiently to changing business conditions are the foundation for the survival of an enterprise (Ciekanowski *et al.*, 2018). In recent years, the number of newly established as well as dissolved companies has been growing. Two out of three companies in Poland experience their first year of operation. Most companies fail in the first year of operation. In subsequent years, the success rate is higher (Raport, 2023).

Analysing data from monthly information on entities of the national economy contained in the National Official Register of National Economy Entities (REGON) for Section A PKD – Agriculture, forestry and fishing Division 02 - Forestry and logging, the number of entities of the national economy in the period from 31.03.2020 to 31.03.2023 decreased by 441 companies, In the case of natural persons conducting business activity, it was 411 entities, and currently amounts to 17771 enterprises (as of 31.03.2023). The number of companies deregistered from the REGON register increased from 48 (as of 31.03.2020) to 81 (as of 31.03.2023). The number of entities with suspended activity increased from 2024 (as of 31.03.2020) to 2579 (as of 31.03.2023) (Informacja, 2020, 2023). The economic stability of the company ensures greater efficiency and economic benefits of the enterprise (Triplat and Krajnc, 2021; Kempa, 2022). The stability of companies is adversely affected by long-term problems with contractors. This year's tender procedures for forest services performed in the area of 20 forest districts of the RDSF in Zielona Góra required an average of 3 proceedings.

Among the new companies active in the proceedings in 2023, 45% were companies that submitted their offers in subsequent proceedings (not in the first proceedings) of which 46% were companies based outside the area administered by the RDSF in Zielona Góra.

The importance of forest entrepreneurship continues to grow, especially in countries with high levels of change in the forest sector. Private entrepreneurs in forestry play an important role in all forms of forest ownership and management systems both on a European and global scale (Šporčić *et al.*, 2017). The forest services sector across Europe requires systemic support not limited to unfavourable demographic trends (Fijas *et al.*, 2015). The development of the forest services sector aimed at improving the technical and technological level of companies and the competence of forest entrepreneurs is not possible at this stage without public support through subsidies, tax relief and other tools that provide an incentive to take action in this direction (Spinelli *et al.*, 2010; Mederski *et al.*, 2016; Šporčić *et al.*, 2017;, Kovalčík, 2020; Halilović *et al.*, 2021) with Slovakia as a model example (Štěrbová, 2019).

The survival and success of a company depends on its ability to remain competitive and to maintain or increase its position in the market (Erlandsson, 2016; Glazar and Iwanicki, 2016). Functioning in a changing environment requires not only anticipating possible changes but also anticipating them (Chyłek, 2014).

Conclusions

- The progressive increase in the number of suites, including specialist ones, may result in an increase in the activity of individual entities in proceedings for forest services.

- The reduction of the amount of work to be carried out within a single suite and the lack of non-price criteria may further reduce consortium activities.
- An increase in the number of proceedings initiated to select forest service contractors may result in an increase in the activity of companies that have not yet submitted bids in proceedings.
- Factors with a key impact on the company's development such as the introduction of pandemic restrictions, increases in fuel prices, increases in the number of suites, or the lack of non-price criteria in procedures for the award of contracts for forest services could have reduced the activity and changed the dynamics of cooperative activities of companies from the forest services sector.

Conflicts of interest

Author declare no conflict of interest

Funding source

The research was financed from the author' own funds.

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STRESZCZENIE

Wpływ zmian w otoczeniu na aktywność firm sektora usług leśnych w latach 2019-2022 na przykładzie RDLP w Zielonej Górze

Otoczenie współczesnych przedsiębiorstw jest coraz bardziej złożone i zmienne. Dotyczy to także otoczenia firm sektora usług leśnych. Celem pracy była ocena aktywności firm świadczących usługi z zakresu gospodarki leśnej na obszarze administrowanym przez RDLP w Zielonej Górze w latach 2019-2022 na tle zidentyfikowanych zmian w otoczeniu. Na podstawie obserwacji otoczenia firm sektora usług leśnych, stosując jako kryterium wyboru istotność zmian mających miejsce w latach 2019-2022 w stosunku do roku bazowego 2018 w obszarze czynników o kluczowym oddziaływaniu na rozwój przedsiębiorstw, zidentyfikowano następujące czynniki mogące mieć wpływ na aktywność firm leśnych: wprowadzenie ograniczeń społeczno-gospodarczych na skutek pandemii COVID-19, wzrost cen paliw, wzrost liczby pakietów (w tym pakietów maszynowych dotyczących pozyskania i zrywki drewna) oraz brak kryteriów pozacenowych w postępowaniach o udzielenie zamówienia na usługi leśne wykonywane w latach 2022-2023. Analizę aktywności firm przeprowadzono z wykorzystaniem skonstruowanej w tym celu bazy przedsiębiorstw, w skład której wchodziły podmioty wyszczególnione jako „Wykonawcy, którzy złożyli oferty w »Zawiadomieniach o wyborze najkorzystniejszej oferty«", pochodzących z postępowań

o udzielenie zamówienia publicznego na usługi w zakresie gospodarki leśnej (zagospodarowanie lasu, ochrona lasu, w tym ppoż., pozyskanie, zrywka, przygotowanie gleby, prace szkółkarskie, zbiór nasion, gospodarka łowiecka i łąkarska) wykonywane w latach 2020-2023 na terenie 20 nadleśnictw Regionalnej Dyrekcji Lasów Państwowych w Zielonej Górze. Bazę stanowiły 172 firmy, które uczestniczyły ogółem w 139 postępowaniach przetargowych. Na podstawie analizy udziału w postępowaniach dokonano oceny aktywności firm na rynku usług leśnych w latach 2019-2022. Szczegółowa analiza obejmowała: liczbę przedsiębiorstw aktywnych, udział firm w konsorcjach z uwzględnieniem liczby i składu konsorcjów oraz liczbę ofert składanych przez konsorcja i firmy działające indywidualnie, z uwzględnieniem pakietów obejmujących wszystkie prace z zakresu gospodarki leśnej (pakiet = leśnictwo) i pakietów specjalistycznych. Ponadto dokonano analizy pakietów, na które zostały podzielone zamówienia w pierwszych postępowaniach na lata 2020-2023 pod względem liczby i rodzaju (pakiety ogólne, pakiety specjalistyczne, pakiety pozyskaniowe).

Oferty w postępowaniach na usługi leśne na terenie RDLP w Zielonej Górze w latach 2019-2022 składało średnio 108 firm rocznie. Trzon sektora stanowiło 59 firm. Były to firmy aktywne w postępowaniach każdego roku analizowanego okresu. Najwięcej nowych firm (nieskładających ofert w roku poprzednim) odnotowano w roku 2022 (29 firm) (ryc. 1), 17 z nich to firmy mające swoją siedzibę poza obszarem administrowanym przez RDLP w Zielonej Górze. Ze 172 firm uczestniczących w badaniach 140 firm (81%) działało w 148 konsorcjach. Zarówno w konsorcjach, jak i indywidualnie, aktywne były 42 firmy (24%) (tab. 1 i 2). Konsorcja najczęściej były tworzone przez 2 podmioty. Spośród firm działających w konsorcjach 83 firmy (59%) działały w więcej niż jednym konsorcjum. W przypadku 48 przedsiębiorstw liczba konsorcjów, w których działały, nie przekroczyła 3 (tab. 3). W więcej niż jednym postępowaniu uczestniczyło 46% konsorcjów. Najczęściej były to 2 postępowania. W przypadku 75% konsorcjów liczba postępowań, w których uczestniczyły, nie przekraczała 4 (tab. 3). Pozostałe konsorcja były tworzone na potrzeby danego postępowania. Procentowy udział ofert składanych na pakiety specjalistyczne przez podmioty indywidualne przewyższał w każdym roku procentowy udział ofert składanych przez konsorcja i stanowił średnio 62%. W przypadku konsorcjów było to 55% (ryc. 2). W odniesieniu do wcześniej analizowanego okresu zaobserwowano spadek liczby firm aktywnych w postepowaniach oraz spadek liczby konsorcjów, jednocześnie większą stabilność konsorcjów pod względem ich struktury. Wzrósł odsetek konsorcjów uczestniczących w więcej niż jednym postępowaniu. Wzrosła także średnia liczba pakietów w postępowaniach dotyczących wykonawstwa prac leśnych w przeliczeniu na jedno nadleśnictwo (tab. 4). Wzrost liczby pakietów, w tym pakietów specjalistycznych w kolejnych latach i związane z tym zmniejszenie rozmiaru prac do wykonania przypadających na jeden pakiet, spowodował wzrost aktywności podmiotów indywidualnych. Czynniki o kluczowym oddziaływaniu na rozwój firmy, takie jak wprowadzenie ograniczeń pandemicznych, wzrost cen paliw, wzrost liczby pakietów czy brak kryteriów pozacenowych w postępowaniach o udzielenie zamówienia na usługi leśne, mogły wpłynąć na obniżenie aktywności i zmianę dynamiki działalności kooperacyjnej firm sektora usług leśnych. Postępujący wzrost liczby pakietów, w tym specjalistycznych, może wpłynąć na dalszy wzrost aktywności podmiotów indywidualnych w postępowaniach na usługi leśne. Zmniejszanie rozmiaru prac do wykonania w ramach pojedynczego pakietu oraz brak kryteriów pozacenowych mogą wpłynąć na dalsze ograniczanie działalności konsorcjalnej. Wzrost liczby postępowań uruchamianych w celu wyłonienia wykonawców usług leśnych może skutkować wzrostem aktywności firm dotychczas nieskładających ofert w postępowaniach.