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Controlling as a Modern Management Method Used in Polish Fuel Enterprises

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Abstract:

Purpose: *The aim of the article is to diagnose the level of application and functioning of controlling in Polish enterprises distributing liquid fuels. It was hypothesized that organizational conditions influence the use of controlling in enterprises distributing liquid fuels.*

Design/Methodology/Approach: *The research group included all companies distributing liquid fuels that operate in Poland on the basis of a license to trade in liquid fuels (TLF), i.e., 5,689 energy entities (general, statistical population). Completed surveys were collected from 235 enterprises. The research procedure used includes: literature review, survey research, analysis of legal acts related to the subject of research, statistical methods, in-depth interviews with decision-makers in companies distributing liquid fuels, logical inference methods (induction, deduction), methods of analysis and synthesis.*

Findings: *The research diagnosis allowed to accept the hypothesis and state that organizational conditions influence the use of controlling in enterprises distributing liquid fuels. Detailed research analyzes have shown that: a) the larger the company distributing liquid fuels (measured by the number of employees), the greater the extent to which controlling is used; b) enterprises distributing liquid fuels with domestic (Polish) capital use controlling less often than others - it most often occurs in enterprises with foreign capital; c) controlling is used most often in global enterprises distributing liquid fuels, and least often in domestic enterprises; d) enterprises that use controlling conduct wholesale distribution of liquid fuels much more often than others.*

Practical Implications: *Practical business implications focus primarily on indicating the benefits for enterprises resulting from the use of controlling as a modern management method. The results also indicate the following benefits from implementing controlling: increased efficiency of planning and control in the enterprise, as well as rationalization of its operating costs; making more accurate and rational decisions in the company by managers; having reliable information that allows making accurate decisions; integration of management activities belonging to different functional areas of the enterprise.*

Originality/Value: *Based on the presented results, it can be concluded that organizational conditions influence the use of controlling in enterprises dealing with the distribution of liquid fuels. Moreover, the introduction of controlling in an enterprise has a significant positive impact on the management of this entity, and therefore controlling significantly supports the proper and effective functioning of this enterprise. The presented results fill the existing research gap in the field of using controlling as a modern method of enterprise management.*

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1. Introduction

Progressing globalization, consolidation of enterprises, rapid development of technology, negative economic effects of the COVID-19 pandemic and the war in Ukraine, digital and energy transformation, increasing importance of ecology - these are processes that rapidly and even revolutionary influence changes in the environment of modern enterprises. They must meet the growing expectations of customers regarding the goods and services offered, competition and the requirements of operating on a global, unstable market in an economy based on intellectual capital.

The company must constantly monitor and improve internal economic operations. It should pay attention to its development, eliminate difficulties, solve problems and counteract potential threats. The company must also use its resources effectively and coordinate them to achieve the set goal.

Efficient and effective management of an enterprise distributing liquid fuels depends on the quality of decisions made. A very important method of enterprise management that supports making rational decisions is controlling.

The aim of the article is to diagnose the level of application and functioning of controlling in Polish enterprises distributing liquid fuels. The following hypothesis H1 is put forward:

H1: Organizational conditions influence the use of controlling in companies distributing liquid fuels.

- *H1a: The larger the company distributing liquid fuels (measured by the number of employees), the more controlling is used.*
- *H1b: Enterprises distributing liquid fuels with domestic (Polish) capital use controlling less often than others - it most often occurs in enterprises with foreign capital.*
- *H1c: Controlling is used most often in global companies distributing liquid fuels, and least often in domestic companies.*

- *H1d: Enterprises that use controlling conduct wholesale distribution of liquid fuels much more often than others.*

The intellectual stimulus for presenting the topic in this article is the identification of a cognitive gap in the area of research on controlling in Polish fuel companies.

2. Different Definitions of Controlling – Literature Review

Controlling was introduced into European terminology from Anglo-American management science (Potkány *et al.,* 2022). As Vollmuth emphasizes (Vollmuth, 2017), controlling is often identified with the word control, but such an understanding is too narrow, because the essence of controlling means a system of managing an enterprise.

The task of controlling, as a cross-functional management instrument, is to support company managers in making decisions. "Trust is good, controlling is even better". Proper management of a company requires planning, the goals of which are set jointly, i.e., by the company's management and management staff. By comparing the established goals with the actual situation, deviations from the plan are identified in the company's reports. Based on them, the company's management should take corrective actions to achieve the set goals. It can therefore be said that there is constant feedback in the company.

Controlling is an important element supporting the management of a company. Unfortunately, few companies use this tool. Controlling combines all areas related to decision-making at the operational and strategic level. It also integrates individual areas of the company's activity, focusing on the proper flow of information (Bełch and Bełch, 2020).

Kerzner (2022) believes that controlling is a management process that includes stages of measuring economic values. With their help, you can assess the degree of achievement of goals, identify the causes of deviations, correct a bad or use a good trend of the company's development activities. According to Ziegenbein (2007), controlling provides information and methods to the enterprise in the field of work systems, which include planning processes, control processes, as well as support and coordination of these systems.

It can be assumed that controlling is a service function of management, the subject of which is to obtain the required information about the current and planned level of processes and economic phenomena. What should be emphasized here is the detection of deviations between the current course and the planned course (Sedliačiková *et al.,* 2021; Horvath *et al.,* 2015; Hagiu and Wright, 2018).

Decision making is related to a specific action or general process. It is most closely related to the planning function, but is also a part of leading, organizing

and controlling (Bełch *et al.,* 2024; Reichmann, 2001; Adamkiewicz-Drwiłło, 2002). Controlling ensures rational management. Generally applies to all company goals. Rationality is the desire to ensure that the existing resources of an economic entity are used to make decisions that will enable achieving efficiency and achieving the set goals. The aim of controlling is to provide appropriate information and methodological support.

This allows you to avoid incorrect decisions and increases their rationality. Controlling ensures transparency of processes and proper development of the management structure (Weber and Schäffer, 2022; Sedliačiková *et al.,* 2021; Stańczyk and Stuss, 2018).

Controlling is a method of collecting and using information to coordinate and support planning and control processes throughout the enterprise. Its aim is to continuously improve all decisions made within the company (Bhimani *et al.,* 2008; Schierenbeck and Lister, 2002; Schäffer and Weber, 2001). Controlling is described as a management system, as management control (Straus and Zecher, 2013) or as accounting and management control (Emmanuel *et al.,* 2013).

Controlling supports the process of correcting the adopted indicators by converting them into final results. These results should be achieved within the planned time, which will ensure optimal implementation of the company's strategic goals and improve the quality of decisions made in operational management (Samagaio *et al.,* 2018; Hnatenko *et al.,* 2020; Baum *et al.,* 2013).

Pfohl (2018) defines controlling as the philosophy of thinking of an enterprise, aimed at optimizing its financial result, using the instrument of internal accounting. Controlling interpreted as a way of thinking, a new management style, a new orientation of management accounting, the task of the controller.

Not only access to capital, but mainly the quality of management is important for improving the efficiency of enterprises. The high variability of the company's environmental conditions means that the quality control of decisions made should be carried out on a continuous basis - this is possible thanks to the modern management method of controlling.

It helps in the rational arrangement of responsibilities and competences at various levels of management and facilitates the connection of achieved results with the motivation system (Sierpińska and Niedbała, 2008; Preißner, 2010; Ziegenbein, 2004).

Controlling as a conceptual research category is also a very important and useful differentiator for a modern company distributing liquid fuels, especially when we look at its dynamically changing, turbulent environment. An important aspect for the functioning of controlling in an enterprise is specifying the spheres of its tasks.

However, the implementation of controlling tasks should aim at more efficient functioning of the enterprise, faster locating the place and cause of unforeseen changes, and identifying areas whose improvement will translate into an improvement in the financial result of the economic entity. The controller performs the tasks and controlling functions in a company distributing liquid fuels.

3. Materials and Methods

The design of empirical research aimed at achieving the purpose of this article and verifying the formulated hypothesis required the use of diverse research instruments.

The research procedure used includes: literature review, analysis of legal acts related to the subject of research, survey research, expert verification of the research questionnaire, statistical methods, in-depth interviews with decision-makers in companies distributing liquid fuels, logical inference methods (induction, deduction), methods analysis and synthesis. Research on the use of controlling in enterprises distributing liquid fuels lasted 6 months.

The assumption of the research was to diagnose the level of use of controlling in energy companies operating in Poland that distribute liquid fuels. The results presented in the article are part of broader research conducted on controlling in companies distributing liquid fuels.

The research tool was a survey questionnaire (in electronic or paper form). In order to verify the accuracy of the content of the questions in the questionnaire developed for the dissertation, experts were involved at the stage of its construction.

Three employees of various companies distributing liquid fuels, employed in managerial positions (directors) and two controlling researchers, assessed the content of the questionnaire in the process of its replication. They independently assessed the questionnaire individually. This evaluation increased the usefulness of the research tool.

Additionally, pilot studies were carried out on a sample of six companies distributing liquid fuels, during which the understandability of the developed questionnaire was verified. Methodological information was obtained, which undoubtedly improved the research process.

The survey was anonymous and addressed only to companies distributing liquid fuels, whose business activity in this field is based on a license for trading in liquid fuels - TLF, issued by the President of the Energy Regulatory Office (licensing authority). The research group was determined in a non-random, purposeful manner. It consisted of all companies distributing liquid fuels operating in Poland

on the basis of the OPC license, i.e. 5,689 energy entities (general, statistical population). Completed surveys were collected from 235 enterprises, which constitutes a response rate of 4.13%.

Data for the study were obtained in parallel using four channels of communication with respondents - as:

- response to the e-mail sent: respondents had a choice of two possible ways of completing the survey, i.e. by linking an active link to the electronic survey form (with the function of automatic return to the sender) or by completing and returning the questionnaire attached in the message (in the format *doc* for Microsoft Word);
- telephone interview;
- direct interview (meeting with the respondent);
- response to a paper questionnaire sent by traditional mail (with an introductory cover letter, a self-addressed return envelope and a stamp).

After initial verification, it was found that 8 collected questionnaires contained substantive errors and/or were incomplete - the eliminated questionnaires were completed in a way that clearly made their use impossible.

As a result of the activities carried out, 227 correctly completed questionnaires were finally accepted for data analysis in the study, which also reduced the response rate to 3.99%. The questionnaires were completed by the person responsible in the enterprise for the functioning of controlling, and if it is not implemented - by: the head of the financial department / manager / commercial director or a representative of the general management. Quantitative methods and statistical inference were used to analyze empirical data.

The basic Chi-square test for independence of variables was used in the statistical analyses, primarily for questions based on nominal scales. Phi and Kramer's V coefficients (based on the Chi-square test) were used to determine the strength of the relationship.

The Phi measure also indicates the positive or negative direction of the relationship. It should be emphasized that the Chi-square test analysis is accurate when a maximum of 20% of the theoretical numbers are less than 5 and there are no theoretical numbers smaller than one.

These conditions determined the performance of additional tests for each analysis using the Chi-square test, carried out mainly with small samples, using the exact or Monte Carlo methods. The statistical significance of the analyzed compounds was indicated by the estimated test probability "p".

The presence of the letter (a) in the Chi-square test result (under each cross-tabulation) means that the calculated statistics may not meet the condition of the

minimum expected number. In such a situation, when calculating the "p" value based on the Monte Carlo method, it was additionally marked with the letter (b).

The statistical significance "p" of Kramer's V and Phi coefficients was determined based on the Chi-square test result. Measures of the strength of the relationship for these coefficients range from 0 to 1 - a higher value indicates a stronger relationship. In most cases, the Monte Carlo method is based on a sample of 10,000. tables with a random number generator starting number of 2 million. All correlations, differences and dependencies are statistically significant when $p \leq 0.05$.

The IBM SPSS Statistics 26.0 package (including the Exact Tests module) was used to perform the analyses. By default, it calculates statistical significance using the asymptotic method for non-parametric tests. This means that "p" values are reported based on the assumption that the data conforms to a specific distribution and that the sample size is sufficient.

However, with a small data set, observations are few and unevenly distributed, so the results obtained from the asymptotic method may turn out to be unreliable. In such cases, it is advisable to calculate the statistical significance of "p" using an exact method, without the need to make assumptions that may not be met by the data.

4. Results

4.1 Industry Structure of the Surveyed Companies Distributing Liquid Fuels

As a result of the survey research, 227 correctly completed questionnaires were collected and then accepted for further research and analysis.

The industry structure of the surveyed enterprises distributing liquid fuels, including enterprises using controlling in their activities, is presented in Table 1.

Among the surveyed enterprises distributing liquid fuels, small entities prevailed (Commission Regulation of the European Union, 2014) - 83, constituting 36.5% of all respondents. Then entities: micro - 28.2% (64), medium - 26.0% (59) and large - 9.3% (21). The vast majority are enterprises with predominant commercial activities - 54.6% (124) and commercial and service activities - 29.1% (66).

Taking into account the organizational and legal form, the largest number, as many as 118, were limited liability companies - 52% of enterprises and sole proprietorships - 25.6% (58). Among the respondents, the largest group (165) were entities with only domestic capital - Polish, i.e., 72.7% of enterprises. The following entities: with Polish capital predominating – 17.2% (39); where foreign capital predominates – 7.0% (16); that have only foreign capital – 3.1% (7).

Table 1. *Industry structure of the surveyed companies distributing liquid fuels, including companies using controlling in their activities*

Characteristics of enterprises	Companies distributing liquid fuels based on TIF ERO license		Companies distributing liquid fuels using controlling	
	Number of enterprises (total 227)	Percentage of enterprises (total 100%)	Number of enterprises (total 22)	Percentage of enterprises (total 100%)
Enterprise size measured by the number of employees employed				
large enterprises (over 249 employees)	21	9.3	10	45.5
medium-sized enterprises (50-249 employees)	59	26.0	11	50.0
small enterprises (10-49 employees)	83	36.5	--	--
micro enterprises (1-9 employees)	64	28.2	1	4.5
Predominant type of business activity				
commercial	124	54.6	4	18.2
service	12	5.3	1	4.5
production	5	2.2	--	--
commercial and service	66	29.1	13	59.1
production and service	10	4.4	-	--
production and trade	10	4.4	4	18.2
Organizational and legal form of the enterprise				
sole proprietorship	58	25.6	2	9.1
partnership	18	7.9	2	9.1
limited liability company	118	52.0	7	31.8
joint-stock company	6	2.7	5	22.7
general partnership	7	3.1	--	--
limited partnership	10	4.4	--	--
partnership limited by shares	3	1.3	3	13.6
a partnership	2	0.9	1	4.5
cooperative	1	0.4	--	--
state-owned enterprise	3	1.3	2	9.1
association	1	0.4	--	--
foundation	--	--	--	--
another organizational and legal form	--	--	--	--
The degree of internationalization (internationalization) of				

economic activity				
domestic enterprise (purchases all its resources and sells all its products and services in one country)	163	71.8	6	27.3
international company (located mainly in one country, but obtains a significant part of its resources or revenues from other countries)	40	17.6	7	31.8
multinational enterprise (purchases raw materials, takes out loans, produces its products and sells them on a global market, management is in the hands of representatives from the home country)	19	8.4	6	27.3
global company (sells its products and services around the world, has an international sales network, is not tied to one home country)	5	2.2	3	13.6
Form of ownership of the enterprise				
domestic capital – Polish	165	72.7	5	22.7
with predominance of Polish capital	39	17.2	8	36.4
with a predominance of foreign capital	16	7.0	5	22.7
foreign capital	7	3.1	4	18.2
50% Polish capital / 50% foreign capital	--	--	--	--
Type of ERO (Energy Regulatory Office) concession held				
TLF (for trade in liquid fuels)	227	100.0	22	100.0
FLF (for foreign trade in liquid fuels)	19	8.4	12	54.5
PLF (for the production of liquid fuels)	1	0.4	--	--
SLF (for storage or reloading of liquid fuels: SLF-S or SLF-R)	8	3.5	5	22.7
TMLF (for the transmission of liquid fuels)	1	0.4	--	--
another type of concession	--	--	--	--

Source: *Own study based on conducted research.*

Nearly 3/4 of the surveyed organizations are domestic enterprises - 71.8% (163). The degree of internationalization (internationalization of economic activity) of other enterprises is as follows: 17.6% - international (40), 8.4% - multinational (19), 2.2% - global (5). The last general variable characterizing the examined entities is the type of license held by the Energy Regulatory Office. All 227 enterprises have an TLF license.

This confirms the fulfillment of the condition for selecting respondents, i.e. "enterprises distributing liquid fuels (based on TLF license)". Moreover, 8.4% (19) of the surveyed business units have an FLF license (for foreign trade in liquid fuels), 3.5% (8) - an SLF license (for the storage or reloading of liquid fuels). Only 0.4%, i.e., one enterprise holds a PLF license (for the production of liquid fuels) and one TMLF license (for the transmission of liquid fuels) - the same economic entity.

Summarizing the general characteristics of the surveyed enterprises distributing liquid fuels, it can be stated that the most common in the surveyed sample are small enterprises, which are limited liability companies or sole proprietorships. These are mainly domestic commercial and commercial-service entities with Polish capital. Within the scope of licensed activities, the distribution of liquid fuels is their basic area of prosperity.

Continuing the characteristics of the sample of 227 participating enterprises the study shows that their distribution of liquid fuels is carried out in the sales segment:

- retail (at gas station(s)) – 91.6% (208);
- wholesale (with delivery of liquid fuels by tanker to the customer – "on site") - 21.6% (49);

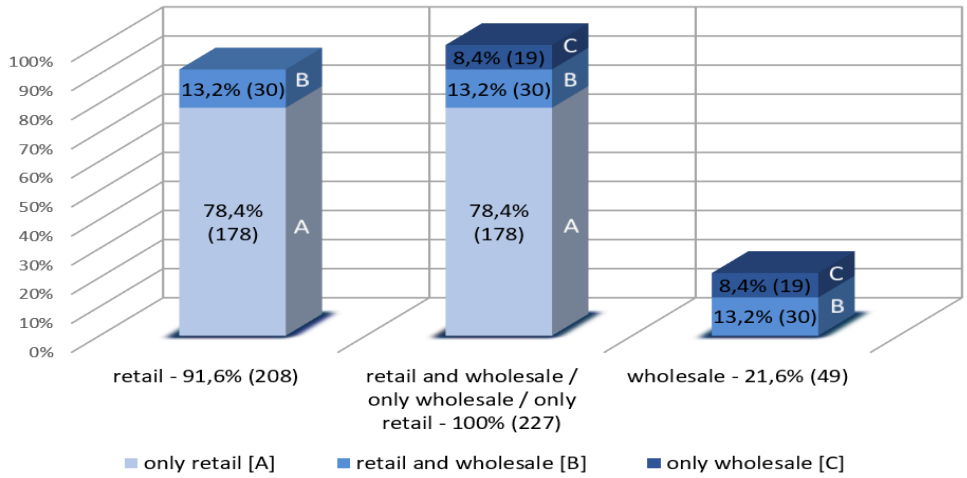
including:

- retail and wholesale – 13.2% (30);
- retail only – 78.4% (178);
- wholesale only – 8.4% (19).

This is schematically presented in Figure 1.

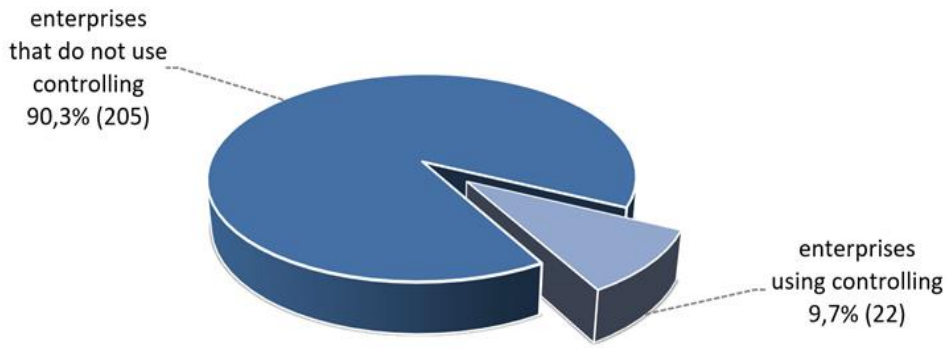
The main goal of the survey was to diagnose the level of application and functioning of controlling in enterprises operating in Poland that distribute liquid fuels. According to the collected data, it can be concluded that controlling is used in only 9.7% - 22 of the surveyed units. In 90.3% - 205 enterprises, controlling does not occur. The use of controlling in companies distributing liquid fuels is shown in Figure 2.

Figure 1. *Distribution of liquid fuels in the surveyed enterprises in the retail and/or wholesale segment*



Source: *Own study based on conducted research.*

Figure 2. *The use of controlling in enterprises distributing liquid fuels*



Source: *Own study based on conducted research.*

During conversations with respondents (direct interviews), it turned out that some enterprises use certain controlling instruments and methods and techniques supporting controlling in their activities, while being unaware of this fact.

Therefore, a statistical error is allowed in the response of the surveyed units to the question about the use of controlling - in particular when it is asked in a survey questionnaire (where it is not possible to use the form of a direct, in-depth interview). To conclude, it is believed that the functioning of controlling

(including the "unnamed" one) in enterprises distributing liquid fuels may be at a higher percentage level (> 9.7%).

Among the 22 surveyed entities using controlling in their activities (Table 1), half (50% - 11) are medium-sized enterprises employing from 50 to 249 employees. 45.5% (10) are large enterprises (over 249 employees). A total of 95.5% (21) of respondents were large and medium-sized enterprises (employing at least 50 employees).

The vast majority are units with predominant commercial and service activities - 59.1% (13). Taking into account the organizational and legal form, the largest number (7) were limited liability companies - 31.8% and joint-stock companies - 22.7% (5).

Among the respondents, the largest group (8) were entities with predominantly Polish capital - 36.4%. The following entities: with foreign capital predominating – 22.7% (5); having only Polish capital – 22.7% (5); having only foreign capital – 18.2% (4). 31.8% of the surveyed organizations are international enterprises (7).

The degree of internationalization of the remaining enterprises is as follows: domestic - 27.3% (6), multinational - 27.3% (6), global - 13.6% (3). The last general variable characterizing the examined entities is the type of license held by the Energy Regulatory Office. All 22 companies have an TLF license. Moreover, 54.5% (12) of the surveyed business units have an FLF license, and 22.7% (5) have an SLF license.

Summarizing the general characteristics of the surveyed enterprises using controlling (22), it can be stated that the most common occurrences in the surveyed sample are:

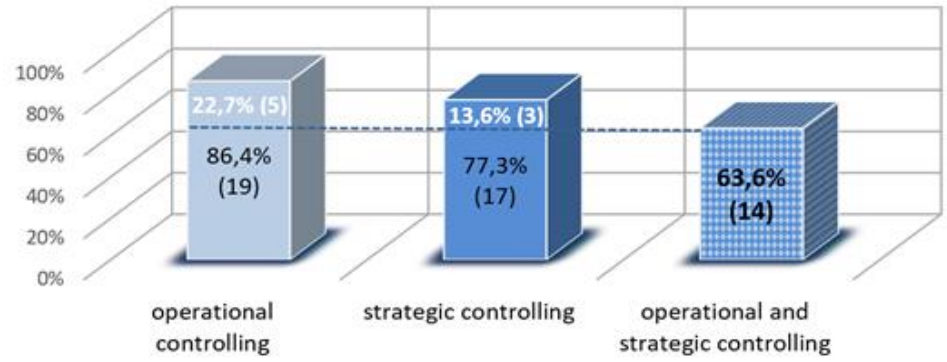
- medium and large enterprises;
- limited liability companies or joint stock companies;
- international trade and service entities;
- units with predominant Polish capital.

In terms of licensed activities, the distribution of liquid fuels is their main area of prosperity.

4.2 Types of Controlling in the Surveyed Enterprises

The next task was to investigate what type of controlling exists in the analyzed group of enterprises (statistical sample). The results are presented in Figures 3 and 4.

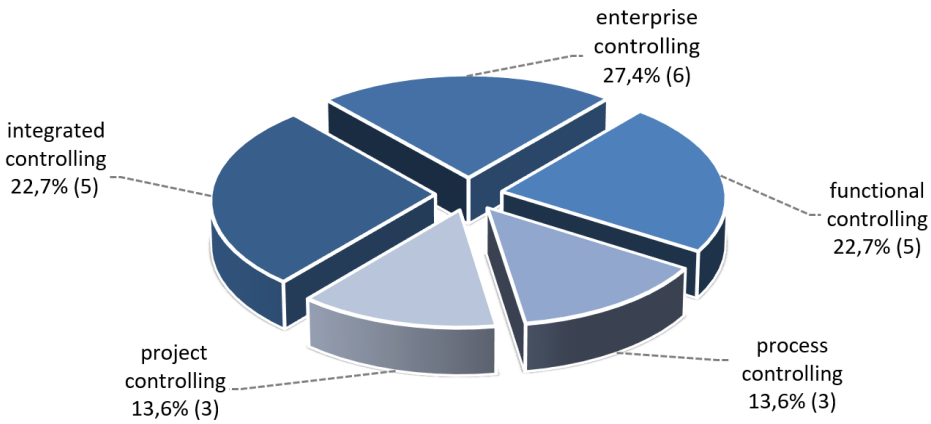
Figure 3. *Occurrence of controlling in enterprises distributing liquid fuels (due to the time horizon)*



Source: *Own study based on conducted research.*

Among the 22 surveyed enterprises that use controlling in their activities, 86.4% (19) of units indicated the functioning of operational controlling and 77.3% (17) strategic controlling. 63.6% of respondents (14) have both operational and strategic controlling. 22.7% (5) of enterprises use only operational controlling, while 13.6% (3) only strategic controlling.

Figure 4. *A type of controlling occurring in enterprises distributing liquid fuels*



Source: *Own study based on conducted research.*

Most of the surveyed business entities, i.e., 27.4% (6), use enterprise controlling (performing the tasks of controlling the entire enterprise). The group of the remaining 16 enterprises includes: integrated controlling (taking into account the enterprise's relations with its environment) - 22.7% (5), functional controlling (performing controlling tasks in particular functional areas, e.g., transport, supply,

production, sales, marketing, logistics, finance) – 22.7% (5), process controlling (fulfilling the tasks of controlling in the system of implemented processes) – 13.6% (3), project con-trolling (oriented at efficient and effective preparation and monitoring course of the company's design projects) – 13.6% (3).

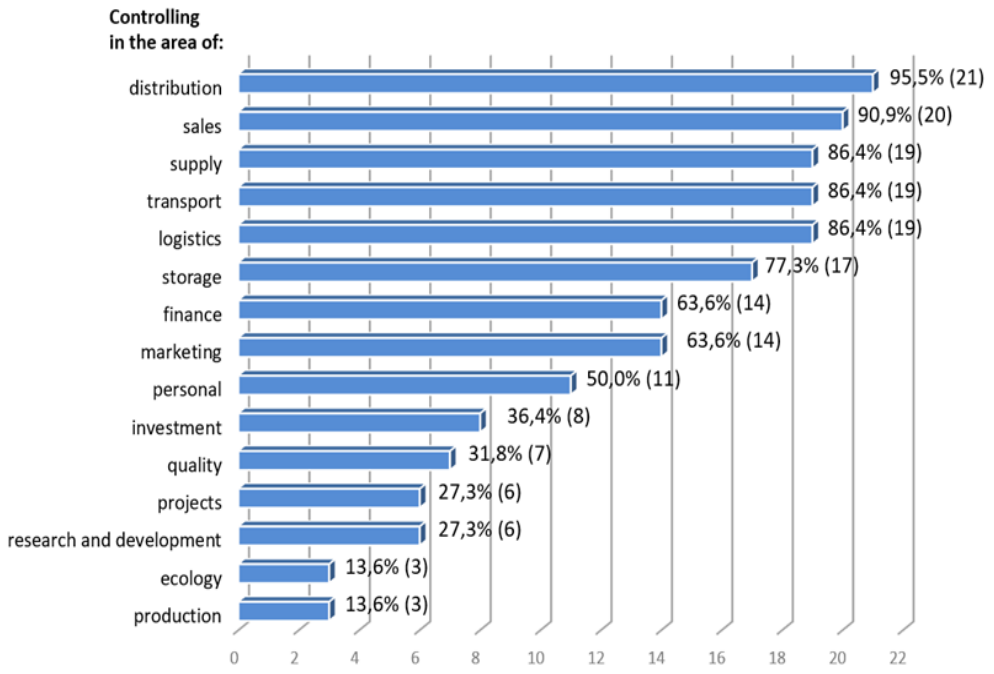
4.3 Controlling in Individual Areas of Activity in the Surveyed Enterprises

Figure 5 presents the areas of activity in which control-ling was distinguished in the surveyed enterprises.

Taking into account the areas of activity in which controlling was distinguished in the surveyed enterprises, only one entity did not indicate distribution controlling. The presented result of 95.5% (21) reflects the main area of business activity of the respondents, which is distribution.

Very high percentages were also recorded for controlling: sales - 90.9% (20), supply - 86.4% (19), transport - 86.4% (19), logistics - 86.4% (19) and warehousing – 77.3% (17). From the point of view of the specificity of liquid fuel distribution, these are key areas of "interest" of energy enterprises (e.g. in the analyzes carried out in the field of proper management and rational management).

Figure 5. *Areas of activity in which controlling was distinguished in enterprises distributing liquid fuels*

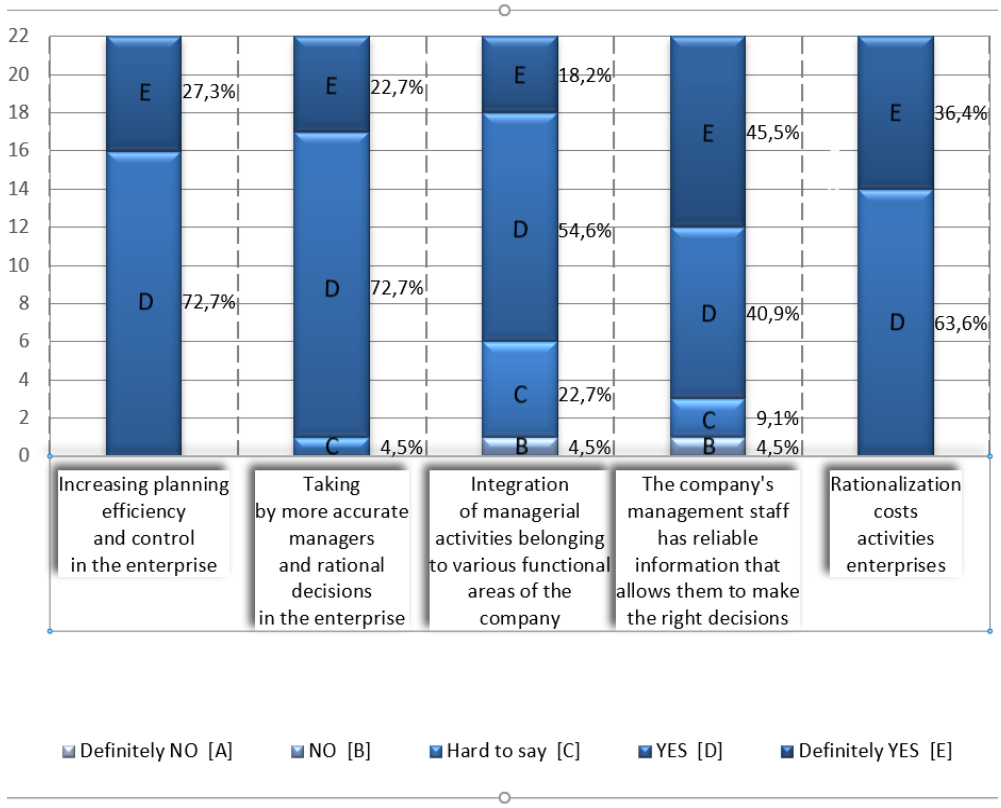


Source: *Own study based on conducted research.*

4.4 Benefits for Enterprises Thanks to the Use of Controlling

Interesting conclusions are provided by the analysis of the benefits achieved by the respondents, thanks to the use of controlling in an enterprise dealing in the distribution of liquid fuels. These benefits are shown in Figure 6.

Figure 6. *Benefits achieved thanks to the use of controlling in an enterprise distributing liquid fuels*



Source: *Own study based on conducted research.*

All surveyed entities (100% - 22) noted an increase in the effectiveness of planning and control in the enterprise, as well as a rationalization of the costs of its operations.

As many as 95.5% (21) monitor managers making more accurate and rational decisions in the company. 86.4% (19) of entities indicated that thanks to the implementation of controlling, the company's management staff has reliable information that allows them to make the right decisions.

Almost ¾ of the respondents, i.e., 72.7% (16), attribute to controlling the integration of managerial activities belonging to various functional areas of the

enterprise. Based on the presented results, it can be concluded that the introduction of controlling in the analyzed enterprises had a significant positive impact on the management of these entities, and therefore controlling significantly supports the proper and effective functioning of these enterprises.

4.5 Statistical Tests

As part of the analysis of the collected research material (from 227 enterprises), statistical tests were carried out. Due to limitations related to the database, the use of some statistical methods was impossible - e.g., correlation analysis is possible when there are two ordinal or quantitative variables (none).

Based on the results obtained, the formulated research hypothesis was further verified, and then decisions were made to accept or reject it. The statistical significance of the analyzed relationships and dependencies was based on the estimated test probability.

The results of the analyzes are presented in cross-tabulations within Tables 2 and 3.

Table 2. *Results of statistical analyzes in the area of controlling in enterprises distributing liquid fuels - cross tables No. 1*

Sales segment used in the company to distribute liquid fuels			The use of controlling		Total
			NO	YES	
retail (at the fuels station/stations)	yes	N *	188	20	208
		%	91.7%	90.9%	91.6%
Phi **	0,009	0,017a	1	0,898	1,000
wholesale (with delivery of liquid fuels by tanker to the customer – "on site")	yes	N	30	19	49
		%	14.6%	86.4%	21.6%
Phi	-0,516	60,392 a	1	0,000	0,000
Coefficient	value	Chi-square	df ***	p	p accurate

Note: ** numbers of the sample population, ** a coefficient determining the strength of the relationship between variables, *** degrees of freedom.*
Source: *Own study based on research.*

Enterprises that use controlling conduct wholesale distribution much more often than others. The relationship is statistically significant and has a strong relationship. In the case of retail sales, there is no statistically significant differentiation depending on the groups studied.

Global companies most often use controlling. Multinational enterprises are in second place in terms of percentage share in this area. Domestic enterprises use controlling the least often. The relationship between the variables is statistically significant and has a clear strength of relationship.

Table 3. *Results of statistical analyzes in the area of controlling in enterprises distributing liquid fuels - cross tables No. 2*

			The degree of internationalization of business activities				Total
			company distributing liquid fuels				
			global	national	inter-national	multi-national	
The use of controlling	NO	N	2	157	33	13	205
		%	40.0%	96.3%	82.5%	68.4%	90.3%
	YES	N	3	6	7	6	22
		%	60.0%	3.7%	17.5%	31.6%	9.7%
Total		N	5	163	40	19	227
		%	100.0%	100.0%	100.0%	100.0%	100.0%
Cramer's V *	0,389	34,373 [a]	3	0,000	0,000 [b]		
Coefficient	value	Chi-square	df	p	p Monte Carlo		

Note: ** a coefficient determining the strength of the relationship between variables.*
Source: *Own study based on research.*

5. Discussion and Conclusion

The most important conclusions from the conducted cognitive research:

- organizational conditions influence the use of controlling in enterprises distributing liquid fuels (the hypothesis was fully confirmed):
  - the larger the company distributing liquid fuels (measured by the number of employees), the more controlling is used;
  - enterprises distributing liquid fuels with domestic (Polish) capital use controlling less often than others - it most often occurs in enterprises with foreign capital;
  - controlling is most often used in global enterprises distributing liquid fuels, and least often in domestic enterprises;
  - controlling is used much more often in enterprises conducting wholesale distribution of liquid fuels than in enterprises conducting only retail distribution of liquid fuels;
- among the surveyed enterprises that use controlling in their activities, 86.4% of entities indicated the functioning of operational controlling and 77.3% of strategic controlling, 63.6% of respondents have both operational

and strategic controlling, 22.7% of enterprises use only operational controlling, while 13.6% only strategic controlling;

- most surveyed business entities, i.e., 27.4%, use enterprise controlling (which carries out the tasks of controlling the entire enterprise). The group of the remaining 16 enterprises includes: integrated controlling (taking into account the company's relations with its environment) - 22.7%, functional controlling (performing controlling tasks in particular functional areas, e.g., transport, supply, production, sales, marketing, logistics, finance) - 22.7%, process controlling (fulfilling the tasks of controlling in the system of implemented processes) - 13.6%, project controlling (oriented at efficient and effective preparation and monitoring of the course of the enterprise's projects) - 13.6%;
- areas of activity of the surveyed enterprises in which controlling was distinguished: distribution - 95.5%, sales - 90.9%, supply - 86.4%, transport - 86.4%, logistics - 86.4%, warehousing - 77, 3%;
- thanks to the use of controlling, all surveyed entities (100%) recorded an increase in the effectiveness of planning and control in the enterprise, as well as rationalization of the costs of its operations. As many as 95.5% monitor managers making more accurate and rational decisions in the company. 86.4% of units indicated that thanks to the implementation of controlling, the company's management staff has reliable information that allows them to make the right decisions. Almost ¾ of the respondents, i.e., 72.7%, attribute to controlling the integration of managerial activities belonging to various functional areas of the enterprise. Based on the presented results, it can be concluded that the use of controlling in the analyzed enterprises had a significant positive impact on the management of these entities;
- some companies distributing liquid fuels use certain controlling instruments and methods and techniques supporting controlling in their activities, while being unaware of this fact; the functioning of controlling (including the "unnamed" one) in the surveyed enterprises distributing liquid fuels may be at a higher percentage level than the result obtained - 9.7% of the surveyed entities;
- there is a possibility of much broader application of controlling in the economic practice of enterprises distributing liquid fuels,
- it is necessary to start popularizing the use of controlling in the activities of enterprises distributing liquid fuels.

The results of the empirical research carried out may also have implications for economic practice. The group of people interested in the results of the conducted research may include representatives of the management board, sales directors, logistics managers, transport managers and controllers of companies distributing liquid fuels.

The conducted research also has some limitations. They resulted, among others, from the adopted methodological approach (non-random, purposeful selection of the research group): response rate in the conducted survey at the level of 3.99% (227 correctly completed questionnaires) from the surveyed general population, i.e., 5,689 energy entities holding a license to trade in liquid fuels Energy Regulatory Office.

Limitations are also the result of problems occurring at the stage of data acquisition. Their causes include the reluctance of company employees to participate in surveys and "trade secrets" of business entities.

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