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DETERMINANTS OF SELECTING RESEARCH LABORATORY – RECOMMENDATIONS FOR MANUFACTURERS OF AGRICULTURAL MACHINES

Summary

The subject of this paper – being a preliminary study – are the determinants of selecting a research laboratory for the needs of carrying out safety tests of useness, evaluating the conformity in order to issue an EC conformity declaration, and to voluntarily certify for the "B "safety mark. The research was conducted from the point of view of small, medium, and large manufacturers of agricultural machines. The fundamental purpose of the study is to answer the question: what factors – from the point of view of the manufacturers of agricultural machines – are relevant when selecting a research entity. The main goal required formulating and implementing the partial goals, which included: determining the significance of starting cooperation by a Polish manufacturer with a research laboratory in the context of the binding regulations and standards; by reconstructing and interpreting the literature of the subject – choosing the factors to be considered when selecting a research entity; compiling the determinants constituting the foundation of a research tool in the form of an assessment sheet being a resultant of literature studies, and a discussion among intentionally selected experts from the agricultural machines sector. The specified explications became the background that defines correct direction for further research works (assessment of the significance of requirements), whose results will be presented in the subsequent part of the study.
***Key words**: selection determinants, research laboratory, agricultural machines*

DETERMINANTY WYBORU LABORATORIUM BADAWCZEGO – REKOMENDACJE DLA PRODUCENTÓW MASZYN ROLNICZYCH

Streszczenie

Przedmiotem badań niniejszego opracowania – stanowiącego badanie przygotowawcze – są determinanty wyboru laboratorium badawczego dla potrzeb przeprowadzania badań bezpieczeństwa użytkowania, oceny zgodności w celu wystawienia deklaracji zgodności WE oraz dobrowolnej certyfikacji na znak bezpieczeństwa „B". Badania prowadzono z perspektywy małych, średnich i dużych przedsiębiorstw produkujących maszyny rolnicze. Fundamentalnym celem badań jest próba odpowiedzi na pytanie: jakie czynniki – z punktu widzenia wytwórców maszyn rolniczych – są istotne przy wyborze jednostki badawczej. Osiągnięcie celu głównego wymagało sformułowania i zrealizowania celów cząstkowych, do których zaliczono: określenie znaczenia podjęcia współpracy polskiego wytwórcy z laboratorium badawczym w kontekście obowiązujących przepisów i norm, wykorzystując metodę rekonstrukcji i interpretacji literatury przedmiotu – nominowanie czynników branych pod uwagę przy wyborze jednostki badawczej; skompilowanie determinant stanowiących fundament narzędzia badawczego w postaci arkusza oceny będącego wypadkową eksploracji piśmiennictwa oraz dyskusji wśród celowo dobranych ekspertów związanych z sektorem maszyn rolniczych. Skonkretyzowane eksplikacje stały się substratem definiującym właściwy kierunek dalszych prac badawczych (ocena istotności wymagań), których wyniki zostaną zaprezentowane w kolejnej części opracowania.
***Słowa kluczowe**: determinanty wyboru, laboratorium badawcze, maszyny rolnicze*

1. Introduction

The deliberations in this paper refer to the criteria for choosing a research laboratory from the point of view of the manufacturer of agricultural machines. The term determinant – crucial for this work – is defined as a requirement, a precondition, a factor, or a collection of standards, which should be satisfied, in order to make the relation between the results achieved and the resources employed as favourable as possible.

In the marketing concept of operations on the market, it has been assumed that a client-oriented business entities should focus their activities on identifying and satisfying the expectations of buyers more effectively than the competitors do. In this concept, the starting point was to examine the needs and preferences of buyers [1]. Currently, the customer is the most important in the strategy of operations of each entity. The customer, being the guiding force, determines the path to the organization's success. When making decisions, they verify different suppliers, when the assessment results negative, without a second thought, they change the supplier [2]. Therefore identifying and satisfying the needs and preferences of buyers is the key to the organization's success in business. Under the conditions of fierce competition, it is not enough, however, to just declare a focus on the clients, but it is necessary to correctly understand the essence of the market orientation, and, first of all, to actually apply it in daily operations [3].

Initially, new manufacturing rules were not promoting the quality of agricultural machines being manufactured [4]. Labour standards, price work, manufacturing lines, were causing a large number of the cases of quality issues. Insufficient operational research findings on agricultural machines from objective research entities made it impossi-

ble for farmers to effectively select machines for their farms. Meanwhile in Poland, for many years there have been no comparative assessments regarding the quality of their work, operation, and usability. The quality of manufactured machines' operation is evaluated only partially and limited to demonstrations in the soil conditions specified by the manufacturer. Such verification is unacceptable for buyers (farmers), who work on various soil types of different form, humidity, stone content, or culture. Currently, there are many types and type dimensions of machines on the domestic market (particularly those for soil cultivation, fertilization, sowing, and plant protection) that do not serve their intended role properly [5]. All the farmers have the information provided by the manufacturers which are not required to present the findings of any operational and quality tests, or of any operational safety tests carried out by an authorized entity. To introduce a machine to the market, it is only required to present all the documents specified in art. 5 of the Machine Directive, which the manufacturer can prepare independently, and only the introduction of farming vehicles of the R, S, T, and C category to the market requires approval tests, performed by an independent entity. That is why it is so important to run tests on agricultural machines by objective research entities - laboratories. It should be assumed that, regardless of the adopted product development strategy, in any case its competitive quality must be ensured, which will reflect the fulfilment of the specified norms and requirements. The machines offered on the farming mechanization market are diversified by their intended use. Their shapes, dimensions, configuration, internal structure, etc. are designed and manufactured to optimally serve the functions assumed in operation [6]. For those reasons, to evaluate various products in terms of their quality, proper research, notified, or certification entities must be selected.

Here, a question arises: *what criteria must a research laboratory meet to be attractive from the point of view of a buyer – the manufacturer of agricultural machines? What factors in the opinion of the Polish manufacturers of agricultural machines affect their choice of a research laboratory the most?* (This work is an attempt to answer this question, where the authors present the complex subject of broadly understood evaluation of research laboratories operating in the Polish agricultural machinery sector. The answer to this question is particularly significant under the conditions of the development of the economy sectors based on knowledge, where a customer and a product or a service adjusted to their needs are a key growth factor).

Is it a competitive price? Or perhaps the quality and range of the carried out research work or the complexity of their offer? Or is it a PCA accreditation certificate confirming the competences with regard to the conducted research? Obviously, all of this influences the decisions on cooperation made by the manufacturers, but it is not necessarily the most important factor. Based on the observations of economic practices, the authors of the study conclude that this are the relations, which also include cooperation in the creation of their offer, influence the most the possibility of starting cooperation between a research laboratory and an agricultural machine manufacturer. (When starting the study, the authors adopted the conceptual model of the thesis with the following wording: *Lasting relations of a manufacturer with a research entity, which significantly exceed the basic operations, as evaluated by the companies being surveyed, are the most relevant in determining their will to undertake cooperation).*

In the context of the above, research has been undertaken, whose main objective is to answer the question: what factors – from the point of view of the manufacturers of farming machines – are relevant when selecting a research entity. Achievement of the main goal required that partial research should be formulated and implemented including in its first part:

- Determining the significance of starting cooperation by a Polish manufacturer with a research laboratory in the context of the binding regulations and standards;
- By reconstructing and interpreting the subject matter literature – appointing factors to be considered when selecting a research entity (theoretical dimension);
- Compiling the determinants constituting the foundation of a research tool in the form of an assessment sheet being a resultant of literature research, and of a discussion among intentionally selected experts from the agricultural machine sector (design dimension).

The studies mentioned in this work were conducted from the point of view of a Polish manufacturer associated with the agricultural industry, and more closely with its mechanization [specialization: agricultural machines].

2. The prospects of cooperation between a Polish manufacturer and a research entity

The views presented in the chapter are a result of numerous interviews between the authors of the study and representatives of enterprises and institutions from the examined sector.

Though the prospects of the Polish manufacturers and vendors are relatively good, they must find new markets. The quantitative equipment of the Polish farming sector with tangible means of mechanization is already on a high level, but it is not sufficient. With EU subsidies, the age and wear of machines and tractors, and the technological gap related to this, which divides the Polish farming sector from the farming sectors of the leading Western European countries, has significantly decreased. However, within the coming years, many farms in Poland will keep modernizing their machinery. Given the above, the production and sales of new agricultural machines in Poland will keep systematically growing, though slower than before.

A significant number of domestic and foreign manufacturers, continuously growing competition, and relatively low entry barriers on the Polish market will force the manufacturers of agricultural machines to adjust to the requirements and preferences of the clients.

As a result, the agricultural machine manufacturers active on the Polish market feel an increasingly stronger need to verify their machines' conformity at the designing, manufacturing, and operation phases. Testing the machines for their conformity in order to issue an EC conformity declaration and a "B" mark certificate are becoming a good practice. The organization that runs such tests can be a research institute, the aim of which is to independently run basic tests, industrial tests, or experimental development works, and to distribute the results of such activities on a large scale through teaching, publishing or knowledge transfer. The character of the research institute's operations depends on the terms, on which they are undertaken. The statutory research and research - development projects are conducted

to expand the knowledge resources, to better understand and distribute their results; and the tests are conducted at an order of an entrepreneur who becomes the owner of the results developed within the Projects that are not disseminated without its consent.

One of the basic conditions for any research institute to achieve success on the agricultural machine market is to identify the most effective position – for a research laboratory organized within its structure. It is therefore necessary to decide what image of the laboratory to create for the consumers. The starting point to position a research laboratory is a product in the form of services offered.

That is why it is necessary to identify the manufacturers' needs, and to know the market. Based on the data on the needs of prospective service recipients, competition activities, machine manufacturers' responsiveness to marketing activities, the research laboratory develops its strategic operation plans.

The price offered, the offer's features, the value it provides, and especially the skills and behaviour of the research entity; all influence, without exceptions, the decision made by a manufacturer on buying a testing service. They alone do not guarantee success; when, however, they are properly selected, /they make the customer behave ???/ according to the service providers' assumptions, resulting in a decision to buy the service, which directly leads the research entity to success.

Focusing the research laboratory's operations on the needs of agricultural machinery manufacturers constitutes the basic principle in marketing, since the client's satisfaction is the best indication of future profits [3]. A satisfied manufacturer supports the research entity, by not only purchasing subsequent services, but also by shaping positive opinions on the organization and the service catalogue it offers. The process of selecting service suppliers consists of several stages, those include:

- Becoming aware of the needs
- Evaluating the information;
- Identifying the ways of satisfying the need, looking for a research entity/a research laboratory
- Evaluating the available solutions of the issue
- Deciding whether to purchase the service/test
- The behaviour after the service is completed by the research laboratory (impression, evaluation).

The manufacturers who need to acquire a service, wonder how to satisfy it. Therefore, in order to make the best choice, the offers of selected research laboratories are compared, and the choice itself is very difficult and it brings a high risk. The contract signing phase is the crucial stage in the process of choosing a service.

The need to purchase a specific kind and extent of an agricultural machine test results from the willingness to fulfil or to use certain functions, which can be divided into five criterion categories (Fig. 1).

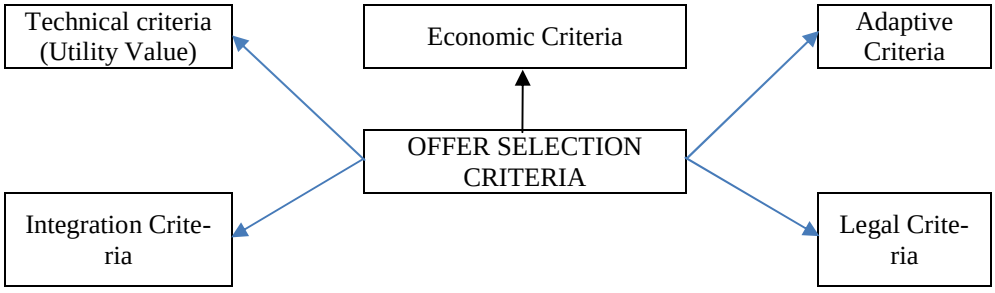
The technical criteria refer to the factors related to the implementation of the service (e.g. speed, quality, scope, comfort). The economic criteria refer to the amount of money, time, and effort, which must be devoted during the acquisition or the completion of the service; and the adaptive criteria are used to overcome the uncertainty which is usually connected with its acquisition process. The legal criteria are related to the accreditation and certificates that contribute to the fulfilment of the legal requirements, and the integration criteria affect the evaluation of a research laboratory according to its affiliation with, and support from other machinery manufacturers, achieved thanks to a high level of tests provided and to adhering to the desired own image, and to the sense of integration.

3. Determinants of selecting research laboratory – constructing a model

3.1. Aim, subject matter, and research method

By reconstructing and interpreting Polish and foreign subject matter literature, a number of factors determining the selection of a research laboratory was identified. Such action – in the project dimension – made it possible to compile a research tool in the form of an assessment sheet being a resultant of the literature study, and of a discussion among deliberately selected experts.

The qualitative studies were intended to identify these determinants. Their purpose was to understand the causes of specific perception, in particular to understand and correctly interpret the action and thinking scheme. The information collected in this way is presented in a descriptive form. The phenomenological (based on experiments) - qualitative studies – made it possible to identify opinions, impressions, and associations, which were caused in the case being analysed by a number of factors related to the issue of choosing the provider of a testing service. Based on the qualitative research findings, the guidelines for quantitative testing were determined. The studies conducted helped to design the scheme of the next study, formulate the problems, and the key issues. They provided interesting information on the language used by "the industry experts" to describe the phenomena being the subject of interest. The authors believe that this made it possible to avoid errors at the level of constructing questions, and to adjust the language to the Companies being surveyed.



Source: own elaboration / Źródło: opracowanie własne

Fig. 1. The offer selection criteria in the process of matching a research laboratory
Rys. 1. Kryteria wyboru oferty w procesie dopasowania laboratorium badawczego

The research technique selected to run the studies and to collect the primary data was in-depth individual interview conducted among intentionally selected experts. During the qualitative research, a respondent was directly contacted by a researcher. The individual interview had the form of a free conversation according to a previously designed scenario. In the first place, general questions were asked, which gradually led to more detailed issues. In the discussion, 19 representatives participated from the agricultural machinery sector, including:

- 8 owners and co-owners – 42.11% of all the surveyed – enterprises operating in the agricultural machinery sector
- 6 managers – 31.58% of all the surveyed – employed based on an employment contract
- 3 representatives of the Industrial Institute of Agricultural Engineering, including the Head of the Agricultural Machinery Research Laboratory (15.79%)
- 1 representative of a higher education school specializing in designing and testing agricultural machinery and devices with the use of modern computer technology (5.26%)
- 1 expert affiliated for over 16 years with manufacturing companies operating in the agricultural machinery sector (5.26%); specialized in: modern computer designing technologies, machinery ergonomics and safety.

Among the surveyed, the group of people with higher education was the biggest: (78.95%); 15.78% experts had high school education, and 5.26% vocational education (Tab. 1).

Table 1. Characteristics of the population being studied according to the education
Tab. 1. Charakterystyka badanej zbiorowości ze względu na wykształcenie

	Education	
	Number of participants	%
Elementary	N=0	0
Vocational	N=1	5.26
High school	N=3	15.78
Higher	N=15	78.95
In total:	N=19	100.00

Source: own elaboration / Źródło: opracowanie własne

The age of those surveyed was between 33-71 years (including 21.05% of the surveyed between 31 to 40 years, 36.84% between 41-50 years, 31.58% between 51-60 years, 10.53% of experts were older than 60 years) (Tab. 2).

Table 2. Characteristics of the population being studied according to the age
Tab. 2. Charakterystyka badanej zbiorowości ze względu na wiek

	Age	
	Number of participants	%
below 30 years	N=0	0
from 31 to 40 years	N=4	21.05
from 41 to 50 years	N=7	36.84
from 51 to 60 years	N=6	31.58
above 60 years	N=2	10.53
In total:	N=19	100.00

Source: own elaboration / Źródło: opracowanie własne

By making the decision on selecting the respondents, a significant criterion was their direct acquaintance with the researchers. This made it possible to determine whether an opinion provider is independent in presenting their views, and whether they are sufficiently knowledgeable and experienced in the field concerned. In addition, due to communication barriers, the persons invited to participate in the survey have direct professional relations with the authors.

Considering the experts' suggestions, a research model was prepared being the basis of a research tool in the form of a questionnaire. The catalogue proposed includes 74 criteria of selecting a research laboratory.

3.2. Research Laboratory Selection Criterion – a research model

The authors of the study assume that research model is a standard set of factors presented in the form of a list, the implementation of which contributes to choosing a specific research laboratory.

The main objective of the presented study was to identify a catalogue of determinants for choosing a research laboratory by a Polish manufacturer of agricultural machines. A fundamental task was to define the areas that are particularly significant from the point of view of the quality and efficiency of a research laboratory's work. To formulate the model, the authors use the basic model creation methods. BY assumption, the model is to constitute the substantive basis of a research laboratory's improvement "scheme", and be, first of all, practically applicable, which means that it is not typically scientific The starting point of the creation of the determinants catalogue being presented was analysis of the subject matter literature, supported by observations and information obtained as a result of in-depth surveys with specifically chosen persons, analyses, and this study authors' own experience.

At this stage of the study, the selected determinants were not differentiated by their validity, assuming that each of them is very significant, and each of those listed should be present in a research laboratory's practice. (The verification of the theoretical model will be the subject matter of the next study entitled "Determinants of Selecting Research Laboratory in the Opinion of the Manufacturers of Agricultural Machines – Assessment of the Significance of Requirements"). The model presented is not a static and closed model, since all the needs and expectations of the enterprise sector cannot be foreseen, even in the nearest future. (Tab. 3).

Under the conditions of constant and growing competition, building long-term cost-effective relations with clients is only possible when they are fully satisfied. It is because this state of mind is an emotion that expresses one's satisfaction or dissatisfaction with their choice. To build long-term relations, it is not enough to sell a service – it is necessary that the client be satisfied with the cooperation. In the context of the above, one determinant for selecting a research laboratory seems to be lasting relations that significantly go outside business operations. The managers of research units, in their daily operations, should practically implement the assumptions of the client relations management strategy. Within the concept of the relationship marketing, which is a concept of management and market operations, according to which the market effectiveness of companies depends on establishing partner relations with market participants, it is highlighted that in the marketing operations, direct contacts (meetings, discussions, joint

fairs, and integration trips) are a significant precondition of achieving market success, and are considered as a long-term process of creating lasting bonds between a research laboratory and businesses.

Table 3. Laboratory selection determinants – a study model
Tab. 3. Determinanty wyboru laboratorium – model badawczy

No.	Criteria for selecting a research laboratory
1.	Access to the laboratory's offer – www/leaflets
2.	Opinion among customers (credentials)
3.	Opinion among laboratories
4.	Previous cooperation
5.	Trust towards the entity/the laboratory
6.	The entity's/the laboratory's brand awareness
7.	The period of presence in the market
8.	The laboratory's presence at fairs/exhibitions
9.	The entity's economic and financial situation
10.	The laboratory's location in the entity's structure
11.	Services offered from beyond the laboratory's operational scope
12.	The laboratory's distance from the client
13.	Experience in running tests
14.	Expanding the scope of services
15.	Intermediation in the organization of tests from beyond the laboratory's/the entity's operational scope
16.	Test Impartiality
17.	Test Independence
18.	The laboratory's quality management system
19.	PCA accreditation certificate
20.	Notifications regarding the directives
21.	Agreements with other entities
22.	Generic range of items being tested
23.	The compliance of activities with standards/procedures
24.	Quantitative range of the standards used
25.	Test complexity
26.	The laboratory's technical facilities
27.	Calibrated laboratory equipment
28.	The laboratory's premises
29.	Ability to run tests at the client's
30.	The laboratory personnel's scientific achievements
31.	Access to the entity's management
32.	Access to the laboratory's management
33.	The laboratory personnel's competences
34.	Advisory services offered
35.	Consultation capability – helpdesk
36.	Test methods improvement
37.	Extensive bureaucracy
38.	Offer preparation time
39.	Service/test price
40.	Transparency of the offer
41.	The period of waiting for a contract
42.	Transparency of the contracts
43.	Contractual lead time of orders
44.	The necessity to pay for a service before receiving the results – the terms of payment
45.	The option of introducing additional provisions into a contract
46.	Flexibility allowing to modify an order or change the subject of the tests (attachments)
47.	Service culture
48.	The availability of the laboratory's personnel
49.	The period of waiting for a test
50.	Selecting a research team
51.	Accessing the information about the tests during a contract
52.	Presenting the test plan
53.	Caring for the subject of the test during storage
54.	The ability to observe the tests
55.	Timeliness of the tests
56.	Confidentiality of the tests
57.	The level of the tests' compliance with the contract
58.	Protecting the subject against unjustified damage during the tests
59.	The possibility to remove any non-conformity in the subject during the tests
60.	The completeness of the subject after the tests
61.	The possibility to collect the subject in any time
62.	The quality of the test report
63.	The credibility of the test results
64.	The usability of the test results
65.	The possibility of entering comments into the test results
66.	Presentation of the test results
67.	The method of delivering the test results
68.	Handling complaints/claims
69.	Compensation of any damage caused through the fault of the laboratory
70.	The commitment to Client's needs
71.	Cooperation with entities that certify products
72.	Consulting on product introduction to the market
73.	Training courses in product introduction to the market
74.	Whether the laboratory/entity has a civil liability insurance policy

Source: own elaboration / Źródło: opracowanie własne

The direct interviews conducted by the authors, and the market observations, unambiguously demonstrate that machine testing characterized by a quality higher than that of the competitors' – achieved by the application of proper technologies and test methods – is a significant argument in the decision-making process. In the context of the above, it should be assumed that, regardless of the test method adopted, in any case, high quality, adapted to the specific requirements, must be ensured.

It seems that the key to the success consists in identifying and satisfying the manufacturers' needs and preferences by the research laboratory. Long-term relations between the recipient of a service and the service provider mean trust and loyalty. It is exchange of not only tangible or intangible values, but also emotions. A company which applies these rules in practice is defined as market-oriented. Under the conditions of fierce competition, it is not enough for a company to claim that it is client-oriented, but it is necessary to correctly understand the essence of this orientation and to actually apply it in the entity's operations [3]. In the context of the above, the possibility of applying by the laboratory special solutions going beyond the standards, the entity's readiness to implement changes may constitute an important criterion in its selection process. The call to creatively adapt an enterprise to the changing surrounding conditions, and to effectively adapt to the needs of the consumers (current and expected), which makes it possible to correctly and fully satisfy them, as the essence and content of marketing, promoted in the subject literature should be extended by the effectiveness of creating the image by:

- The compliance of the service with specific requirements
- The laboratory's technical facilities
- The timeliness of the tests
- Cooperation flexibility
- Consultation capability – helpdesk
- Price level for particular tests.

A short lead time of a service consistent with the previously specified requirements can compensate for its high price. The studies demonstrate that another selection determinant can be the relation of the quality level to the price of the services offered.

The competence level of the laboratory employees, including the personnel's scientific achievements, is a significant determinant classified in the research model. Attention was paid to a research laboratory's market position, having the status of an accredited entity or a certifying entity, its service culture, the personnel's availability, the time of waiting for a test, the makeup of the research team, and access to the test information during the contract period.

The laboratory's spatial concentration, the ability to run joint activities were recognized as important from the manufacturer's point of view. Also, the following seems to be important:

- The terms of the contracts and test implementation
- The period of a manufacturer's operation in the sector (experience)
- Counselling
- Credentials from other participants of the market
- Geographic location, namely the laboratory's location.

The Authors are aware of the fact that the presented catalogue of factors does not exhaust the complexity of the subject. Its limited volume made it necessary to select them. The study presented in the paper should be regarded as contextual, providing a wider and better understanding of the subject of choosing a research laboratory by the manufacturers of agricultural machines.

Under the conditions of constant and growing competition, building long-term cost-effective relations with clients is only possible when they are fully satisfied. It is because this state of mind is an emotion that expresses one's satisfaction or dissatisfaction with their choice. To build long-term relations, it is not enough to sell a service – it is necessary that the client be satisfied with the cooperation. In the context of the above, one determinant for selecting a research laboratory seems to be lasting relations that significantly go outside business operations. The managers of research units, in their daily operations, should practically implement the assumptions of the client relations management strategy. Within the concept of the relationship marketing, which is a concept of management and market operations, according to which the market effectiveness of companies depends on establishing partner relations with market participants, it is highlighted that in the marketing operations, direct contacts (meetings, discussions, joint fairs, and integration trips) are a significant precondition of achieving market success, and are considered as a long-term process of creating lasting bonds between a research laboratory and businesses.

4. Summary and directions for further research works

The theoretical model of determinants for choosing a research laboratory presented in the study was built in such a way that particular desiderata are correlated, overlap, and supplement each other. The determinants catalogued are not fixed categories – the model was built so that it could be modified and supplemented as required. The authors are aware that the creation of lists is hindered, different researchers create broad lists of criteria, without ranking them, naming and interpreting them differently. In addition, the division of the criteria into differing subsets is always a matter of convention and depends on the needs of the authors or the institution for which it is created.

The authors of the study wanted to demonstrate that the identification of the determinants is not a one-time act, but a periodically repeating process, intended to update, correct, and adapt to the continuously changing surrounding conditions, in which the managers of research laboratories operate.

The issues addressed above require further, more detailed studies. The limited volume made it necessary to select, prioritize, and particularize the problems. The problems addressed in particular chapters may be the subject matter of separate studies. It was impossible to contain in one short paper an exhaustive solution for all the matters concerning the determinants for choosing a research laboratory. The model presented in the paper should be regarded as the basis intended for further research works. The problem areas presented in the paper should be regarded as contextual, providing a wider and better understanding of the problem concerned. The submitted paper is the first part of the studies in the scope of the determinants for choosing a research laboratory for agricultural machinery. In the subsequent paper, findings will be presented (empirical verification of the presented model) resulting from a study conducted on a chosen group of manufacturing enterprises.

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