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## Paradigm of empirical research of tools determining management of contemporary economic organisations with the use of the Delphi method

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**Paradigm of empirical research of tools determining  
management of contemporary economic organisations  
with the use of the Delphi method**

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## **Paradigm of empirical research of tools determining management of contemporary economic organisations with the use of the Delphi method**

**JEL Classification:** *B41, D22, D23*

**Keywords:** *economic and financial tools, methods, organisational tools, strategy*

**Abstract:** This article contains a model of a practical conduction of empirical research with the use of the Delphi method deriving from the group of inventive methods. Research material includes tools which directly determine management and operation of contemporary economic organisations. Identification of strategic spheres of operation of business entities was the starting point for the determination of research material. The five most important spheres were selected for this article and then described. The identification of the most important tools determining operation of each of them was made on the basis of the selected strategic spheres. As a result, identification and systematisation of economic and financial and organisational tools in the exogenic and endogenic aspect, determining the operation and development of modern economic entities was made. Subsequently, methodological guidelines were developed and practical use of the Delphi method concerning the research of identified economic and financial as well as organisational tools was presented.

### **Introduction**

The operation of the economic organisations on the modern market is both a complex process and “the art” of using all chances and avoiding or minimizing threats which occur. First of all, the process of development relies on the use of the arsenal of tools which appear in the market economy. These tools directly influence the operation of business entities. The appropriateness of an adequate way of development of the modern economic organisation depends on the professional identification of the

tools. They are crucial in the appropriate recognition of the market and allow their users to distinguish malfunctions in organisations, occurring development opportunities as well as threats in the operation and development of business entities. They constitute basis to create both a strategy of survival in the periods of crisis as well as to create the strategy of development and what is the most important, the arsenal of implementation tools of these strategies and a total process of strategic management. The purpose of this article is to identify the above-described tools which determine the operation of the modern economic organisations and the selection of adequate method of their study.

### **Methodology of the research**

The method of analysis and Delphi method were used as the research method in order to achieve the aim.

The determination of the most important (strategic) spheres of the operation of business entities was a starting point to identify the tools which influence the operation of the modern economic organisations. The identification of the economic and financial as well as organisational tools in the exogenic and endogenic aspect, which influence the opportunities of the operation and development of the modern economic organisations, was made on the basis of the selected strategic spheres.

Taking into account that the majority of the identified tools have qualitative character, they were studied with the use of the Delphi method, which derives from the group of inventive methods. The primacy of this method over other results from the specifics of the studied issue (dominated with its qualitative character) as well as from the assumption that as the consequence of the interaction among specialists, it is possible to create the effect of interdisciplinary synergy, which appears in the inventive approach implemented by the group of experts.

The creation of the model (an example) of the practical use of the method of opinion of specialists in the empirical research of the identified economic and financial as well as organisational tools in the aspect of their influence on the development of economic organisation is the final effect of this article.

### **The determination of the strategic spheres of the operation of the modern economic organisations**

The value chain was used in this article to determine strategic spheres of the operation of the modern business entities. This tool launched by M.E.

Porter allows us to present in a sequent form all elementary collections of functions occurring within the enterprise (from business concept, through shopping, manufacturing of goods, service, distribution and sales, to the achieved profit) (Porter 1990).

As a result of mutual interactions and connections, functions being parts of value chain allow us to determine strategic spheres of operation, i.e. elements of dynamic structure, in which there are processes deciding directly about the development of enterprise and its position on the competitive market.

The core spheres include: Sphere of finance which is connected with the collection of criteria and rules of procedure subordinated to the current operation and the implementation of the strategic development. They are used by the managers of an enterprise while making decisions concerning acquiring funds on the financing current and future needs as well as determining directions and methods of the use of these means taking into consideration existing opportunities, limitations and connections with the surrounding.

The sphere of management is aimed basically at the generation of decisions in the four most important functions of the management: planning, organising, motivating and controlling. The sphere of management directly determines the operation of the remaining strategic spheres and the whole enterprise.

The sphere of staff whose task include: acquiring, deploying, encouraging the development and motivating employees who are necessary for an enterprise to pursue its objectives. The staff fulfils simultaneously or alternately two basic roles: a generator of aspirations, needs, initiatives reacting on the company in order to get some beneficial changes as well as a maker of strategies, functions and tasks which constitute the essence of the operation of the business entity.

The sphere of production of goods is characterised by: suprastructure and machinery condition, the level of their usage, organisation of production, diversification actions regarding the extension of the range of goods as well as, most importantly, the quality of goods. The most important element of the enterprise, a product, is generated in this sphere. Therefore, the appropriate choice of factors of production together with their adequate use, taking into consideration effectiveness, influences the operation and development of the enterprise on the market.

The sphere of marketing includes actions referring to the analysis of the current situation, market and company research, creation of distribution channels as well as promotion in its wider sense.

Each strategic sphere which influences the operation and development of the modern economic organisations has its own specific tools which determine it.

### **The identification of the tools which determine the operation of the modern economic organisations**

The identification of the tools which determine the operation of the modern business entities was made on the basis of the analysis of the most important functions of each previously-determined strategic spheres as well as up-to-date knowledge from the theory of organisation and management. Hence, the economic tools in both external and internal dimension were identified in the sphere of finance. Whereas, the organisational tools were identified in the spheres of management, staff, marketing and production of goods (Łobejko & Pierścioneek, 2011, p. 186).

Clarifying the determination of the economic tools by virtue of the range of their usage and their specifics, they may be called the economic and financial tools. A real flow of money is a direct result of the operation of these tools and it determines the operation of the modern economic organisations, Cash flow is the result of functions pursued by economic and financial tools which include:

- a redistributive function connected with the distribution of goods through the transfer of funds. It involves the fiscal function which relies on the supplying the income by the state authority which is necessary to cover planned expenses relating to the non-productive sphere,
- a regulation function means capability to create funds which stay in the economic organisations in such a way to be sufficient to cover requirements of these organisations, especially in the aspect of basic and developed reproduction,
- a motivational function relies on the use of interest of the management and employees in net profit through the use of the adequate economic and financial factors.

Identifying the economic and financial tools in accordance with the pursued functions, they should be divided into:

- the external economic and financial tools reacting on the economic entities which are under the control of state (they result from the redistributive function),
- the internal tools which determine the operation of business entities which are primarily under the control of the managers of the company (they result from the regulation and motivational function).

Exogenic economic and financial instruments are unambiguously included to the factors of economic reaction of the state to the economic organisations. Tools of direct investments from budget or subsidy are considered as regulators of supply in conditions of the market economy. Support of enterprises with financial tenders from the budget is a direct result of their influence. Instruments burdening activity of business entities i.e. tax instruments both in the form of tax burden such as: VAT and excise, CIT, property tax, VED and quasi taxes as payments from profit, State Fund for Rehabilitation of Handicapped People (Polish Abbreviation PFRON), social security contribution for employees as well as various charges are of different nature. Identified exogenic instruments such as: customs, tariffs, exchange rate, interest rate determine demand and supply and shape market conditions as well as enable rational allocation of manufacturing factors.

The internal economic and financial tools are typical instruments of the market economy generated in the economic organisation or tools whose use depends on people who manage these entities. The identified economic and financial tools are presented in Table 1.

**Table 1. A summary of economic and financial tools**

<b>The economic and financial tools</b>	
<b>Exogenic economic and financial tools</b>	<b>Endogenic economic and financial tools</b>
Direct investments from government budget	Prices
Subsidies	Depreciation
VAT and excise	Investments
CIT	Profit allocation
Property tax	Supplier credit
VED	Overdraft
Payments from profit	Receiver credit
State Fund for Rehabilitation of Handicapped People	Mortgage loan
Labour Fund contribution	Bill discount facility
Social security contribution for employees	Factoring
Charges	Long term loans
Customs	Shares
Tariffs	Bonds
Exchange rate	Venture Capital
Interest rate	Leasing

Source: Own study.

Price of manufactured goods is a basic endogenic tool. This factor allows us to: make profit (a fundamental, synthetic factor of the effectiveness of management), compete in particular segment of the market, create a pricing strategy. The allocation of profit giving managers the possibility to have at disposal this part of profit which remains in the enterprise after deducting the part of compulsory taxes and charges given to the state as well as investments and depreciation connected with new or enlargement existing objects belonging to assets constitute identified derivatives of the above-mentioned tool. Endogenic instruments include also financing of the business activity i.e. achievement of capital or its disposals, starting from long-term loans and supplier credit, receiver credit, overdraft, mortgage loan, bill discount facility to obtainment of capital in the form of crediting through shares and bonds connected with capital market and venture capital – capital with higher risk. Leasing and factoring are also endogenic instruments of the sphere of finance.

While assessing the above-identified economic and financial tools, which determine the operation of the modern economic organisations from the perspective of the microsphere of economic relationships, one should indicate that a main role of these tools should rely on:

- necessity of alleviating factors which burden business entities and creating independence terms strictly connected with self-financing of these entities,
- simplification of the tax system and making it clearer, readable and convenient to a tax payer,
- keeping relative stability of the rules of operation of the necessary external and internal factors,
- creation of conditions for the development of effectiveness of management of production factors.

The organisational tools which determine the operation of the modern economic organisations should be regarded as a group of the tools of management which are to create and shape forms of the operation of the economic organisation. Decisions which determine frameworks in the identified strategic spheres, i.e. staff, marketing, production of goods and management are a direct consequence of their interaction. These frames are determined by the entities which create economic policy with the use of adequate tools which are independent from the business entities and factors under the control of the management of the economic organisations.

The organisational tools were identified taking into consideration the same division into the external and internal factors as in case of the economic and organisational tools.



Taking into account this retrospective assumption, it is a group of noneconomic instruments which are under the control of the entities which create economic policy. As nonparametric tools, they may have legal, administrative or informative form. A detailed statement of the organisational tools is presented in Table 2.

**Table 2. A summary of organisational tools**

<b>The organisational tools</b>	
<b>Exogenic organisational tools</b>	<b>Endogenic organisational tools</b>
Legal	<b>In the sphere of staff</b>
Administrative	Selection of staff
Informational	Evaluation of employees
	Motivation
	Education
	Remuneration
	<b>In the sphere of marketing</b>
	Market research
	Company research
	Distribution
	Promotion
	<b>In the sphere of manufacturing</b>
	Organisation of production
	Diversification of operation
	Quality of offered goods
	<b>In the sphere of management</b>
	System of information
	Organisational structure
	Planning
	Control
	Effectiveness of management

Source: Own study.

The legal form refers to: normative acts which refer to the organisational, functional and ownership structure of entities and systems as well as technical standards connected with the construction and exploitation of the fixed assets. The administrative form involves orders and resolutions of the authority of imperative nature; concessions, limitations, licenses, permissions; location decisions etc. The informative form is connected with: prospective forecasts of growth of the state;

information on planned structural, functional, supply changes; information on demand and supply situation, preferences of users, quality assessment; information on expected balance of income and expenses covered by the population etc.

The identified internal organisational tools are tools which are determined by the market but they are under the control of the managers of the modern economic organisations. As tools which depend on them, they should be used in such a way to support current operation and the adopted strategic assumptions in the most effective way.

In the sphere of staff, obtainment, deployment, support of development and motivating employees to realise targets of the enterprise with the usage of following instruments: selection of staff, motivation, evaluation of employees, education and remuneration is a priority task of the identified instruments.

The sphere of marketing includes the following identified instruments: market research, company research, distribution and promotion. Actions in this sphere are connected with analysis of the current situation, market research and company research as well as with improvement of existing and creation of new distribution channels of goods and promotion in a broad sense.

Instruments in the sphere of manufacturing, namely: organisation of production, diversification and quality determine directly: suprastructure and machinery stock, level of their exploitation, organisation of process of production, diversification activities as well as improvement of the quality of offered goods.

The sphere of management with its main processual target, i.e. generation of decisions in the four most important functions of management, namely: planning, organisation, motivating and control directly determines functioning of remaining strategic spheres and at the same time whole economic organisation. Identified tools of this sphere consist of: system of information, organisational structure, planning, control and effectiveness of management (Gajda, 2014, pp. 333-335).

### **The selection of method for empirical research of economic and financial as well as organisational tools which determine the development of the modern economic organisations**

The selection of the adequate procedure, which should be correlated with a problem being solved, appears to be a basic determinant which has a significant effect on the quality of the final result.

Solving problems is, from methodological perspective, a process consciously aimed at the implementation of some final changes into the situation. Etymologically, a term “method” derives from Greek “*meta hodos*” and means a road to the goal, moving, following or chasing somebody. Plato understood the method as a doctrine. Aristoteles as a research doctrine. Descartes wrote: “the method that tells us to follow the correct order, and to enumerate exactly all the relevant factors, contains everything that gives certainty to the rules of arithmetic.” A. Apanowicz (2005, p. 54) identifies the method with a systematic action emphasising that it is a way of making a complex action relying on the specific selection and order of particular sub-actions. The author pays attention to the repetition of the course of action as well as to the need to of modification and adoption of it to the problem which is being solved. The course of action is determined by the composition and order of its stages.

Using the above-mentioned deliberations we may assume that the method is a way of solving a problem, characterised by some methodical rules used in a particular procedure. Hence, the method of action requires the correlation of two qualitatively different elements. The first group involves principles which implicate methodological rules connected with particular variants and specified equipment which is used when the operation is limited. The second group contains a procedure. It involves the course of use of the elements of methodological requirement which are correlated with the problem. These elements are ordered in a particular way which determines the efficiency of the given method in relation to the problem being solved.

The Delphi method (use of the opinion of experts), which derives from the group of inventive methods, was used in this study to conduct empirical research into the tools which determine effective management and development of the modern economic organisations (Perycz, 2009, p. 88). The score-based assessment is used as a technique in the implementation of the considered research problem. As it was mentioned in the introduction, the advantage of the chosen method over other possible solutions is the result of the specifics of the studied problem dominated by the qualitative character of the majority of considered tools as well as of the assumption that, in case of the inventive approach implemented by the group of experts, it is possible to create an effect of the interdisciplinary synergy which is the result of the interaction between these specialists. The effect relies on the mutual support of the considered aspects of solutions, cumulation and qualitative increase of the intellectual effort of the group. Particular solutions stimulate the creation of subsequent points of view and at the same time allow us to multiply points of view on the basis of which

the exploration of the research problem is made (Stankiewicz, 1998). The fulfilment of basic methodological rules and acceptance of the adequate procedure of action, in accordance with the above-accepted definition of the method, is necessary for this effect to exist and for the selected method to solve the strategic problem.

Hence, the appropriate selection of experts, who create a team of co-creators of the research and interact in a proper way, is a basic determinant of the use of the Delphi method. The method assumes that the experts should be selected among professionals on issues substantively connected with the subject matter of the research in order to represent all the fields of knowledge and experiences which considerably refer to the problem. Fulfilling requirements of this condition, representatives of the management board and the financial sphere of the enterprise (managers, chief accountants, directors, finance specialists) should be selected to the research into the economic and financial tools which determine effective management and development of the modern economic organisations. Whereas, the organisational tools should be analysed and assessed by the team which represents the remaining strategic spheres of the enterprise, i.e. human resources, marketing, goods production as well as management (i.e. managers, directors/managers of HR departments, marketing and production).

The selection of this body allows us to fulfil the other condition which refers to the adequate level of competences among the group of experts. The matter of the level of competences is the result of the theory of chosen method which assumes that the object of study includes most frequently a lot of issues which are in a diversified relation to knowledge and experience of particular experts. In practice, there is a view that it is possible to choose experts to the problem in such a way that all of them are competent. It is used in studying the problems which have clear and substantially compact structure in which the criteria of selection of specialists together with their knowledge and experience tackle the whole substantial subject matter of study. It happens in the case of the research into the economic and financial as well as organisational tools. The experience of the selected experts in this matter should be the result of the range of their duties whereas their knowledge from schools of business they left and life experience they have gained (Kołodko (Ed.), 2014).

The selection of the adequate form of interaction and communication between specialists is the first issue in the chronological order of necessary settlement. Generally, there are three solutions: correspondence, stationary and tele computer version which occur in the literature on subject dedicated to the Delphi method. The stationary version is valid to conduct research

into the solution of strategic problems dominated by the qualitative aspects. In this version a group of specialists is gathered in one place and time. “The technology” of the iteration should take place in accordance with one of the plans presented below. In case of the former, the experts are informed about the aim, manner, subject matter as well as the results of following iterations. They aim at aligning scores to the adequately prepared questionnaires which are treated as verdicts and are regarded as expert opinions. The opinions are justified by the specialists, directly on the stage of discussion which is an integral part of a given interaction. In the latter, the experts are informed about the aim and manner. However, the results of iteration are given in questionnaires in which cumulative studies of justification are collected. The experts discuss directly with each other only in matters relating to the unification of notions and, possibly, agreements of the limitations of the research problem. It is recommended to use the first form of communication and interaction between experts (Stankiewicz, 1998).

The method of beginning the process of solving the problem is very important for the findings in the Delphi method. It is highly correlated with the above-presented interactions which occur among experts. The beginning of this process implies three possible solutions:

- solution of the problem begins from the determination of the list of research hypotheses and research topic;
- the introductory list of hypotheses and topics which has open character is presented to the experts, their task is to complete the list and/or exclude some elements from it during the first iteration;
- the ready, closed list of hypotheses and topics is presented to the experts, the first iteration has to bring verdicts which describe the problem.

The determination of the method of calculation of results of particular iterations is another significant aspect during the adaptation of the Delphi method. Classical recognition assumes the creation of histograms of the distribution of answers and calculation of medians as well as the interquartile range whose minimisation is the purpose of the following interactions. This recognition is adequate to analyses and interpretations of the verdicts of experts which regard values which are possible to quantify and sort according to the qualitative criteria. However, using percentage in giving the results is a more useful method when the research refers to the dynamic or quantitative issues, while finding and interpreting the results, than using complex statistic functions (Stankiewicz, 1998).

### **The paradigm of the practical use of the Delphi method in case of the empirical research into the identified tools**

After the fulfilment of the conditions of the use of the Delphi method, the following procedure was accepted. The questionnaire which involves the identified economic and financial as well as organisational tools should be presented to the experts.

During the first iteration, in order to the use of the technique of score-based assessment, the groups of experts should identify a maximal number of criteria with the use of which it is possible to assess all the identified instruments in the aspect of development. Subsequently, the specialists must choose the most important criteria of importance. They give weight to each criterion and their total sum is one, e.g. economic weight of the instrument – 0,40; intensity of reaction – 0,35; susceptibility to influences – 0,25.

During the second iteration, the experts use score-based assessment and assess particular economic and financial as well as organisational tools. They may give from 1 to 10 scores to each of the presented criteria. This multi-criteria assessment should be applied to scalar by adding the products of weights and scores applied to them. Calculated and added weight averages, for each of the criteria, determine the position of particular tools in the importance rank after the second iteration. A statement of the rank of tools of particular experts, calculation of averages and then, the creation of the rank which is based on the all results of the experts who take part in the research, is the following stage of the classification.

The presentation of the generated rank to experts, who in the following iteration work in a team and agree the final classification of the economic and financial as well as organisational tools which have a significant impact on the development of economic organisation, is the final part of the study.

### **Conclusions**

It is necessary for the economic organisations, which want to be successful on the modern market of dynamic character, to recognise and use the modern arsenal of the analytical and implementation tools during the creation of the operation and development plans having at the same time creative (lateral) approach of the managerial staff to the strategic problems.

The economic and financial as well as organisational tools of the most important spheres of the operation of the modern economic organisations identified in this article are the key to be a successful business entity on the market. Particular spheres determine objectives of the organisation which

are then transmitted into the functional programs of operation within accepted partial strategies. They, in turn, determine a target strategy. The identified economic and organisational tools, which operate on the modern competitive market and are created there, are descriptors of both partial strategies and global economic organisations on the stage of their creation and implementation processes.

The economic organisations, which are aware of the multitude of the instrument at disposal and know the rules which govern them, will be able to use them efficiently in practice depending on the needs and current situation. They may pursue their objectives confidentially and optimistically monitor their future development.

The content and scientific value of this study refers to: the concrete connection of the theory with economic practice; the original approach to the identification of the instruments which determine the operation of the enterprises on the basis of the strategic spheres of the operation of the enterprises; the innovative, uncommon in literature identification of the economic and financial as well as organisational tools which influence the development of the enterprise and the practical presentation of the paradigm of the empirical research of these tools in the aspect of the opportunities of the development of the economic organisation. Taking everything into consideration, it may be said that the accepted aim was fully pursued.

## References

- Apanowicz, J. (2005). *Metodologiczne uwarunkowania pracy naukowej*. Warszawa: Difin.
- Gajda, W. (2014). *Wykorzystanie instrumentów ekonomiczno-finansowych i organizacyjnych w przedsiębiorstwach o trudnej sytuacji strategicznej - na podstawie wyników badań*. In D. Zarzecki (Ed.), *Zarządzanie finansami przedsiębiorstw i jednostkach samorządu terytorialnego*. Szczecin: Wyd. Naukowe Uniwersytetu Szczecińskiego.
- Gierszewska, G., & Romanowska, M. (2014). *Analiza strategiczna przedsiębiorstwa*, Warszawa: PWE.
- Kołodko, G.W. (Ed.). (2014). *Zarządzanie i polityka gospodarcza dla rozwoju*. Warszawa: Poltext.
- Łobejko, S., & Pierścioneek, Z. (2011). *Zarządzanie strategiczne w praktyce polskich przedsiębiorstw*. Warszawa: Oficyna Wydawnicza SGH.
- Perycz, E. (2009). *Strategiczne prognozowanie, modelowanie i symulacja*. Warszawa: Wyższa Szkoła Zarządzania i Prawa.
- Porter, M.E. (1990). *Competitive Advantage*. London: Collier Macmillan Publishers.

Stankiewicz, M.J. (1988). *Metody inwentyczne w rozwiązywaniu problemów strategicznych*. Toruń: UMK.