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SELECTING METHODS WITHIN A RESEARCH PROCESS – SCIENTIFIC AND PRACTICAL CONSIDERATIONS

Abstract. The article ponders on selecting methods within a research process, in terms of management sciences and management-related practice. The author discusses the relation between science and practice. Research methods and research-related approaches are described. The author presents approaches, procedures, methods and techniques in research processes.

Keywords: research method, procedures, techniques

WYBÓR METODY W PROCESIE BADAWCZYM – NAUKA I PRAKTYKA

Streszczenie. W artykule przedstawiono zagadnienia związane z podejściem do wyboru metody w procesie badawczym w kontekście nauki i praktyki zarządzania. Omówiono związek nauki z praktyką. Scharakteryzowano metodykę badawczą i podejście do badań. Przedstawiono podejścia, procedury, metody i techniki w procesie badawczym.

Słowa kluczowe: metoda badawcza, procedury, techniki

Introduction

Research studies constitute complex processes aimed at solving given problems. Their results may be, *sensu stricto*, of cognitive character. Nonetheless, research may be carried out in order to achieve determined practical goals. Performed in all branches, research consists of fixed elements, i.e. analysis and synthesis. The contribution of particular elements depends on the character of the phenomena being examined.

Empirical research methods are proper methods for management sciences. It needs to be underlined that one should employ proper methods allowing to verify research hypotheses and answer research questions. Deductive methods, analogical reasoning, complemented with intuition should be a source of research hypotheses or a basis for formulating research questions. Carrying out research as to management sciences requires more research discipline than the above-mentioned intuition¹.

Research methods and techniques have been, over past years, subject to thorough changes and developments. In management sciences, one can observe a trend of rejecting traditional thinking in favour of combinative thinking. Traditional thinking is based on standard patterns limited to determining goals and classifying them as general (main) and detailed ones, to establishing goal review systems and providing them with formal structures.

A starting point for each marketing research is to determine a sample size. Since each research addresses a different need as to decision-making process, there are no two identical research. Each research consists of a few stages which form a certain closed cycle. Each step requires different courses of actions in the research process.

While defining a research problem, it is difficult to select a single method that would allow to fully diagnose a given problem. It is necessary to employ various research methods providing answers to the said problem. Thus, one needs to have recourse to several research methods and approaches.

A properly elaborated research process allows to achieve results of scientific value. Achieving scientifically valuable findings also depends on a researcher's skills to select and make use of research methods².

A researcher should put a particular emphasis on creating a correct research methodics, while distinguishing basic notions used in the management sciences. The basic notions are as follows:

Method – a conscious, model, systematically applied set of activities, enhancing the efficiency and cost-effectiveness of actions. The method in itself includes a normative element. It imposes how actions are to be performed, in the sense that it deals with a notion of “good labour”³.

Research method – in management sciences – it is a method which is systematically and repeatedly used in order to study various problems. One uses the results of the said research to create theoretical generalisations and empirical principles of practical nature. It is a set of activities and methods used to solve scientific problems and assess the research results⁴.

Methodology – a branch of knowledge about methods used in science. It is reduced to the analysis of a research process. The methodology comprises the following methods: deductive

¹ Niemczyk J.: Metodologia nauk o zarządzaniu, [in:] Czakon W. (ed.): Podstawy metodologii badań w naukach o zarządzaniu. Oficyna a Wolters Kluwer business, Warszawa 2011, p. 19-20.

² Sudoł S.: Nauki o zarządzaniu. Węzłowe problemy i kontrowersje. Dom Organizatora TNOiK, Toruń 2007.

³ Hejduk Z.: Ogólna metodologia nauk. Lublin 2000, p. 103.

⁴ Pieter J.: Zarys metodologii pracy naukowej. Warszawa 1975, p. 40.

and inductive methods, analysis and synthesis. The methodology is a theory of proficient, effective and economic methods of cultivating science⁵. The methodology of management sciences is aimed at elaborating systematic and effective procedures for recognising and developing organisations and their management. Basic issues refer to both epistemological and pragmatic apparatuses⁶.

Methodics – is a methodologically correct set of directives, showing manners of working and methods of operation. Methodics stipulates actions not only for a given area of scientific research, but also for practical applications⁷.

Organisational Methodics – indicates what methods and techniques are used to complete specified organisational tasks⁸.

Typology of methods and management techniques is a science about types. It encompasses the process of ordering, grouping and dividing research methods and tools, used in management sciences.

In order to discuss methods necessary for execution of scientific research as to management sciences, one needs to define basic notions. Among basic notions, one might include research methods, research processes or classification of research methods.

In the article the Author attempts to analyse various approaches to choosing a research method. The chosen research method is to reliably and explicitly influence the carrying out of the research process, while maintaining the process correctness and credibility with regard to theoretical and practical aspects of management.

1. Science and practice in the research process

There exists a significant relation between science and practice. The root of the relation is the fact that research is always or in most cases triggered and carried out as a result of an occurrence of a problem or phenomenon in the real world. Taking into consideration the existing relation between science and practical actions of human beings, the science, or more specifically, research can be divided into:

- theoretical sciences,
- practical sciences.

Theoretical sciences strive to learn about the environmental and social world, without reflecting on how people may make use of research findings in their actions. On the other hand, practical research originally focuses on finding solutions or describing a practical problem or

⁵ Such J.: Wstęp do metodologii ogólnej nauk. Poznań 1969, p. 7.

⁶ Sułkowski Ł.: Epistemologia w naukach o zarządzaniu. PWE, Warszawa 2005, p. 14.

⁷ Pszczołkowski T.: Mała encyklopedia prakseologii i teorii organizacji. Wrocław 1988, p. 119.

⁸ Ibidem.

a phenomenon. That is why the theoretical layer should be complemented with the practical layer and vice versa.

Since the science itself and science-related research are more connected to the practical economy than they used to be⁹, it is thus necessary that research studies, carried out within the scope of management sciences, should be set in both theory and practice. It needs to be underlined that the relation between management sciences and economic practice is both bilateral and complex¹⁰. One needs to bear in mind that management sciences were developed and modified in compliance with changes affecting the economy; thus management sciences are said to have addressed the needs of the economy. The economic development has caused and still causes that the reality and operating environment of companies are getting more and more complex. Therefore, one can draw a conclusion that management sciences originated from practical aspects. The more complicated the economic and social life is, the more changeable and complex the conditions underlying the economic and social actions are. As a result, the practice needs the science more and more. It may be concluded that management sciences in modern economy often constitute a key for the companies to develop and achieve their competitive edge.

Unfortunately, a main drawback of management sciences is a short life of statements. This impermanence results mainly from the fact that¹¹:

- the research refers to variables that change over time e.g.: as a result of changed active, atmospheric, legal, social, environmental conditions, and the like,
- researched objects (e.g. companies) are significantly varied and complex,
- it is necessary to take into account qualitative factors, while the factors are difficult to be measured up,
- the advocated and applied methods are subject to various opinions of theoreticians and practitioners, depending on a given period of history,
- there are problems with verifying research findings,
- they have normative character,
- statement verification takes place only after research findings are put into practice.

Despite of the above-mentioned impermanence, the co-operation between science and practice should play a strategic role in the management of the 21st century companies.

One can distinguish the following relations between management-related science and practice:

- inseparability of theory and practice. „Theory, in principle, results from the needs of practice. Practice poses questions to theory, whereas theory requires from practice to be implemented”¹².

⁹ Koźmiński K.A.: Tradycyjna antynomia nauki i zarządzania. „Nauka”, No. 1, 2000, p. 63-65.

¹⁰ Gabara W.: Nauka o organizacji i zarządzaniu. Kierunki i tendencje. PWB, Warszawa 1989.

¹¹ Jokieli G.: O celach nauki organizacji i zarządzania, [in:] Jagoda H., Lichtarski J. (eds.): Nowe kierunki w zarządzaniu przedsiębiorstwem – celowość, skuteczność, efektywność. Wrocław 2006, p. 57.

¹² Pytkowski W.: Organizacja badań i ocena prac naukowych. PWN, Warszawa 1981.

- It takes a lot of time to determine a problem, analyse it, find a solution and implement it, which affects the solution effectiveness and chances of assessing it.
- It is a frequent occurrence that achieved findings can be applied solely in single cases.

The co-operation between science and practice should play a strategic role in the management of the 21st century companies.

2. Research methodics and research-related approach

Methodics can be defined as a set of ways, rules and principles regarding how a given job needs to be done. Nonetheless, one needs to ponder on specific character of methodics related to management sciences. Management sciences are underdeveloped as far as methodology is concerned. This underdevelopment is caused, among others, by anti-methodological character of main trends¹³.

There exists a relatively reduced methodological base as to management sciences; it is equally difficult to acquire knowledge, methods and techniques from other branches of science¹⁴.

One has to face methodological pluralism; the latter states that in order to solve a research problem, one needs to be ready to apply other research methods derived from various theoretical disciplines and approaches. It means that diverse points of view are combined with a diversity and variety of research ways, methods and techniques, as well as attempts to transform the world¹⁵. However, these proceedings result very often in anarchism and methodological eclecticism. With reference to the foregoing, in order to achieve reliable research findings, it is necessary to meticulously analyse a problem being researched and to select such research methods that would allow to curb the above-mentioned phenomena.

Among qualitative research, M. Kostera distinguishes ethnography, which is a type of approach to inductive field research. Three related methods were also stipulated: case studies, ethnomethodology and grounded theory. An extended case study virtually corresponds, from ontological and epistemological point of view, to ethnography. Its purpose, alike the purpose of the grounded theory, is to generate a more general theory as opposed to ethnography. In a nutshell, the research involves reinforcing empirical data with a researcher's earlier knowledge; thus it is not, *sensu stricto*, inductive methodology. A researcher focuses on an existing theory¹⁶. Any symptoms of the theory being inapplicable are treated not as a reason to reject the theory, but as a reason to reconstruct it. A popular way of applying it in practice is to

¹³ Koźmiński A.K., Oblój K.: Zarys teorii równowagi organizacyjnej. PWE, Warszawa 1989.

¹⁴ Krzyżanowski L.J.: O podstawach kierowania organizacjami inaczej: paradygmaty, metafory, modele, filozofia, metodologia, dylematy i trendy. PWN, Warszawa 1999.

¹⁵ Ibidem.

¹⁶ Kostera M.: Antropologia organizacji. Metodologia badań terenowych. PWN, Warszawa 2003, p. 48.

complement a gap detected in the theory. Ethnographic methods are employed in extended case studies; however, the empirical studies are intertwined with literature studies (ethnography concentrates solely on empirical research)¹⁷. The sole focus of ethnography involves empirical research¹⁸. This is a typically inductive method, based solely on empirical reasoning, therefore no research hypotheses should be formed within the scope of the given research¹⁹.

The case study is a basic method in research processes. K. Konecki stipulated goals that determine which cases are selected for a given research process:²⁰

- inherent/essential case studies – analysed in order to get a better understanding of a simple case, selected deliberately due to its unique properties, while the properties are of interest for a researcher,
- instrumental case studies – a researched case plays an auxiliary role; it allows to comprehend other superior or more general problems,
- multiple case studies – it is an instrumental case study, extended with a number of researched cases, in order to get a better comprehension or create better generalisations.

As S. Sudoł states – the scope of practical use of quantitative methods in management sciences is relatively limited. He underlines, among others, a typical (as management sciences are concerned) difficulty in selecting and maintaining a required size of samples of researched objects²¹. The latter is of particular importance for acquired findings, and they have to meet determined criteria²².

3. Approaches, procedures, methods and techniques in research processes

In the 21st century it is necessary to elaborate methods, techniques and research-related approaches that would allow for a wider comprehension of a research problem and the credibility of research findings.

Approaches applied in the research proceedings are as follows:

- the idiographic approach is used with regard to phenomena which, due to their nature, cannot be generalised easily. The research is of individual character; it can however be provided with multiple cases. The said cases should therefore be treated as empirical

¹⁷ Kostera M.: *op.cit.*, p. 49.

¹⁸ *Ibidem*.

¹⁹ *Ibidem*, p. 58.

²⁰ Konecki K.: *Studia z metodologii badań jakościowych. Teoria ugruntowana*. PWN, Warszawa 2000, p. 127-128; cf. Chęłpa S.: *Metody badań problematyki kadrowej*, [in:] Listwan T. (Ed.): *Zarządzanie kadrami*. C.H. Beck, Warszawa 2010, p. 483.

²¹ Sudoł S.: *Nauki o zarządzaniu*. PWE, Warszawa 2012, p. 139.

²² Turek M., Jonek-Kowalska I.: *Zasady tworzenia prac promocyjnych*. Wydawnictwo Politechniki Śląskiej, Gliwice 2008, s. 117-128; Gołata E., Paradyś J.: *Metody statystyczne w badaniach naukowych*, [in:] Sławińska M., Wiczak H. (Eds.): *Podstawy metodologiczne prac doktorskich w naukach ekonomicznych*. PWE, Warszawa 2008, p. 113-114.

facts, i.e. a starting point in the research. Thus, the cases are subject to a separate, in-depth analysis which, in turn, constitutes a basis for generalisations, formulated carefully²³.

- the nomothetic approach is aimed at establishing universal principles and rules that govern phenomena being researched. The variable operationalisation, together with an ensuing type of rating scale, combined with a way a research sample is selected, will all determine which statistical tools are to be selected in order to integrate the acquired data²⁴.
- the comprehensive approach combines two above-mentioned methodological approaches²⁵. Thus, the triangulation is a method of rational objectivising of the researched reality by an emotionally and intellectually imperfect researcher, acting, in most cases, on his/her own²⁶. Triangulation is necessary for research processes in which qualitative methods are used.

Methodological triangulation types²⁷:

- data triangulation – involves using data from various sources,
- investigator triangulation – involves multiple investigators, observers and controllers of research studies and research findings,
- theory triangulation – involves using various theories to interpret a single set of data,
- methodological triangulation – involves using several research methods to examine a single problem, e.g. quantitative and qualitative methods, as was done in case of the assumed research problem.

In methodological triangulation it is necessary to combine related methods, such as: an interview, observation or document analysis. The methods, being of the same equivalence, complement each other²⁸.

Research-related procedures, methods and techniques:

- research procedures – the way in which one organises processes of acquisition, processing and integration of information of essential importance for the settlement of determined categories of research problems²⁹.
- research methods – research activities being performed, aimed at acquiring information that is necessary to execute basic research goals³⁰.
- research techniques – specifying methods and their influence on particular tools used in the given research study³¹.

²³ Szerzej: Chelpa S.: op.cit., p. 472-473.

²⁴ Ibidem, p. 472-479.

²⁵ Ibidem, p. 479.

²⁶ Konecki K.: op.cit., p. 95.

²⁷ Ibidem, p. 86, cf. Kostera M.: op.cit., p. 98; cf. Chelpa S.: op.cit., p. 479.

²⁸ Kostera M.: op.cit., p. 97.

²⁹ Chelpa S.: op.cit., p. 480.

³⁰ Ibidem.

³¹ Ibidem.

Table 1

Research approaches, procedures, methods and techniques

Approach	Procedures	Methods	Techniques
Idiographic	Case study	Document analysis	Analysis of given lectures and published interviews
			Analysis of minutes taken at staff meetings, reports, memos and regulations
		Observations	Undisguised observation of real critical events
			Disguised observation of simulated stressful situations
		Interviews	Focused group interview
			Situational interview (evaluating behaviours in a given situation)
		Testimonies of other people	Analysis of evaluation reports
			Analysis of customers' informal opinions
		Projective tests	Graphology (personality assessment)
			Thematic apperception test (diagnosing achievement motivation)
Nomothetic	Inspection	Self-monitoring checklists	Introspective analysis of behaviours in difficult situations
			Checklists to assess one's own qualifications and professional behaviours
		Biographical questionnaire	Weighted application form
			Questionnaire of standardised open questions
		Observation	Observation standardised on the basis of rating scales
			Disguised and participant observations
		Interviews	Structured interview (repeated questions, prepared beforehand)
			Structured free-form interview
	Correlation	Survey	Weighted application form
			Anonymous post survey
		Psychography	Rating scales to measure lifestyles
		Ability tests	Vocational skills test
			The Piorkowski Apparatus (diagnosis of visual and motor performances)
		Knowledge tests	Tests related to given areas of knowledge
		Psychological tests	Intellectual aptitude tests
	Temper tests		
	Experiment	Lab experiment	A researcher simulates conditions (controlling and manipulating variables that determine a researched phenomenon) in which the given phenomenon, being subject of the research, persists
		Field experiment (natural)	It is carried out in conditions natural for a researched phenomenon; a researcher manipulates some elements of the environment being of importance for the phenomenon. The researcher also controls remaining elements
		Para-experiments	Probation period at a given post
	Samples of task-related behaviours		

Source: Chępa S.: Metody badań problematyki kadrowej, [in:] Listwan T. (ed.): Zarządzanie kadrami. C.H.Beck, Warszawa 2010, p. 481-482.

Management sciences do not have one commonly accepted paradigm understood as a set of basic cognitive assumptions. If that were the case, these assumptions would set the dominant approach in the discipline and would merge all approaches, trends and schools³². Should one look for such a paradigm in the management sciences?³³

4. Conclusion

Research methods and techniques in the management sciences are aimed at finding out about rules and principles that govern organisations, and at changing the said organisations for better. A method can be defined as a conscious and resolute way in which a researcher acts or behaves in order to achieve a defined goal. A technique, on the other hand, can be defined as an instrument, a tool used to solve appearing problems. However, from the practical point of view it is not easy to distinguish between a method and a technique.

Regardless of a researcher's decision about applying a research method or a research technique, the researcher is always obliged to implement a determined research process. A research process consists of numerous elements; the said elements should be meticulously planned on the basis of continuous choices. The said choices are to be made in consideration of reliability and credibility of research findings³⁴.

The essence of the research process is formulating a research problem; the latter is needed to determine research goals, i.e. what is to be achieved as a result of the research.

According to the holistic approach, phenomena create comprehensible systems. Regarding an organisation as a whole is an element of systems thinking. It is thus necessary to make use of the systems methodology, which requires to design actions collaboratively (in the holistic sense)³⁵. The ensuing results will be to establish proper research methodics.

It is difficult, already at the stage of determining a research problem, to choose one method that would provide for a comprehensive and thorough diagnosis of a problem. It is necessary to have recourse to various research methods that would bring about a detailed answer to a question being posed. The development of cognitive methods and methods related to the company management has made it necessary to adopt a flexible approach, requiring to combine numerous research-related approaches, methods and techniques.

³² Sudół S.: *Nauki o zarządzaniu. Węzłowe problemy i kontrowersje*. Dom Organizatora. Toruń 2007, s. 19.

³³ Jokiel G.: *O celach nauki organizacji i zarządzania*. Prace naukowe Akademii Ekonomicznej, nr 1104. Wydawnictwo Akademii Ekonomicznej, Wrocław 2006, s. 57-63.

³⁴ Babbie E.: *Badania społeczne w praktyce*. PWN, Warszawa 2005.

³⁵ Rokita J.: *Charakterystyczne cechy nauk o zarządzaniu*, [in:] *Współczesne kierunki nauk o zarządzaniu*. Księga jubileuszowa z okazji 50-lecia pracy naukowej i dydaktycznej Profesora Jerzego Rokity. Górnośląska Wyższa Szkoła Handlowa, Katowice 2007, p. 29.

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