

## Case Studies in the Research Process Related to Management Sciences

Henryk Dźwigoł

Silesian University of Technology, Gliwice Poland, London Academy of Science and Business, London United Kingdom, Sumy State University, Sumy Ukraine

### ABSTRACT

**Purpose:** The aim of the article was to diagnose the impact of the use of case studies on the analysis of the research problem by verifying a set hypothesis.

**Design/methodology/approach:** The verification was carried out through the performance of quantitative research by means of a questionnaire. The survey questionnaire was addressed to the theoreticians of management sciences.

The survey questionnaire, used for carrying out the research, was distributed among the target group comprising:

- 93 domestic universities,
- 2307 domestic academics,
- 272 foreign universities,
- 21024 foreign academics.

**Findings:** In conclusion, it should be pointed out that the usefulness of case studies is limited to a certain type of hypotheses being tested and is gradual, and that their application should be the second or third choice within the research strategy rather than the first.

The conclusions from the analysis of the research results clearly confirm that: the case study provides an opportunity to analyse the research problem in depth. Moreover, qualitative methods in research processes should be supported by case studies.

**Research limitations/implications:** It should be pointed out that case studies also have their limitations, e.g.: they are related to the research objectives to which case studies can be applied.

**Practical implications:** The essence of the case study is determined by the use of exploratory methods that will allow an in-depth understanding of the phenomenon under consideration. Neither the size nor the given characteristics of the object are relevant here since the research subject can be a single decision, process, cluster or the whole country.

**Social implications:** Generalizations, which are among the most creative elements of case studies, require an ability to think synthetically, a lot of intellectual effort and a deep understanding of the problem being analysed;

**Originality/value:** The conclusions of the literature analysis and own research unanimously confirm that:

- He case study provides an opportunity for an in-depth analysis of the research problem,
- Qualitative methods in research processes should be accompanied by case studies.

### \*Corresponding author

Henryk Dźwigoł, Silesian University of Technology, Gliwice Poland, London Academy of Science and Business, London United Kingdom, Sumy State University, Sumy Ukraine. E-mail: henryk.dzwigoł@poczta.fm

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### Introduction

In the social science methodology one can distinguish two research approaches: nomothetic and idiographic. The nomothetic approach involves seeking general laws and rules existing in nature. Typical research procedures as to the approach in question are: experimenting, inspecting and correlating, whereas the approach-related characteristic methods are the following: interviews, surveys, observations, experiments and tests. The idiographic approach is based on explaining phenomena in such a way as to identify external events that may shape the said phenomena in a qualitative way. As far as the latter is concerned, a case study is the right research procedure to this end, whereas the methods involved are as follows: document analyses, interviews, observations or projective tests [1].

According to W. Windelband and H. Rickert, the fact that the idiographic approach was mentioned is a result of one's focus on seeking characteristic traits which distinguish the given phenomena from the others [2].

The importance of case studies for the development of management-related science has been recently highlighted. The most widespread achievements in this area are the works by [3,4,5,6,7]. The use of case studies in published works revolves around the level of fewer than one in ten of the published works, but this level may be misleading, as some studies, e.g. on organisational bonds and the two-handedness of organisations make significant use of this method [8]. Therefore, the usefulness of case studies at an early stage of the recognition of a scientific problem is often pointed out.

The essence of the case study is determined by the use of exploratory methods that will allow for an in-depth understanding of the phenomenon under analysis. Neither the size nor the given

characteristics of the object are relevant here since the research subject can be a single decision, process, cluster or the whole country [9]. In this context, argue that according to some authors it is the interpretative methods that determine the essence of the case [10].

Research methodology is a general way of dealing with a particular class of problems, and the research procedure involves specific research. The research procedure for conducting a case study is as follows:

The formulation of a research problem where ignorance is the starting point for studying case studies and should be validated by literature studies. Research questions can be of explorative, descriptive or explanatory nature, of which the latter is most common. The appropriate formulation of the research question should meet two conditions: the first one, related to its position in the existing state of knowledge and the second one, related to the anticipated results [11].

The selection of cases, which is a crucial stage in case studies and on which the entire model or whole suggestions for generalisations are based. This choice involves the use of specific data sources to ensure the reliability of research results. Although a deliberate and theoretical case selection is emphasised, most of the cases are purposeful (apart from using case studies to test theories) [12]. A deliberate selection is described using five criteria [13]. Availability of data, clarity of the case, depicting the extremes but allowing for unambiguous interpretations, analysis of regularities, diversity, concerning the analysis of many cases which illustrate different or opposing circumstances, and which, as indicated by, should range from four to ten cases, a critical phenomenon whose abnormality or extremity makes it possible to identify a generalisation, and a metaphor which directs the researcher towards a given course of a particular phenomenon and enables a given research position to be taken [14]. Each time a deliberate choice requires justification, which becomes an integral part of the case study and an area of evaluation of methodological rigour [15].

The development of data collection tools, where the periodicity of the data collection procedure is typical, as well as the diversity of data sources (obtained by triangulation) to ensure the reliability of studies. Qualitative data include: interview, observation, participatory observation, photographs, archived materials [16].

Conducting field studies aimed at collecting primary data. The methodological rigour of case studies requires the use of a deliberately prepared data collection protocol. The researcher is, however, open to unexpected information, and such research methods as: semi-free interview, observation or participant observation enable him/her to access the nature of phenomena and the perception of the phenomena by their participants [17].

Analysis of the collected data, which includes both quantitative and qualitative data. With regard to the qualitative data, it should be noted that access to a large number of data ordered to a small extent requires ordering at the stage of data collection, which can be carried out using one of seven techniques of ordering and analysing data (narration, quantification, various patterns, well-established theory, mapping and visualisation, extraction in time, synthesising). As a result, the aim is to obtain a possibly synthetic presentation of the abundance of empirical data by selecting a pattern (logical, temporal or spatial) and then analyse it [18].

The formulation of generalizations, which is one of the most creative parts of the case study and requires the ability to think

synthetically, combined with a great intellectual effort and a deep understanding of the problem analysed.

confrontation with literature, the aim of which is to compare models or explanations available in the literature with generalizations resulting from the analysis of empirical data and to illustrate the contribution of the study to the development of knowledge, as well as to increase the credibility and reliability of the conducted research [17].

Closure of the study - a generalisation which is to define sentences defining features, relations or patterns of event dynamics and takes the form of so-called proposals. In the event that the researcher concludes that these proposals require further testing using quantitative methods, he/she should formulate them in the form of hypotheses, which are the basis for future research [15]. Iterations of individual steps are possible, except for the first and the last [15].

It should be pointed out that case studies also have certain limitations. The first is related to the objectives of the research to which case studies can be applied. For it is common practice to expect that the results of a case study will be confirmed on a set of results. Such an allegation, however, results from superficial knowledge of the case study procedure.

Nonetheless, in the case of certain types of hypotheses, it is possible to test with the use of individual cases. Research practice in management science leads, therefore, to the conclusion that case studies usually result in hypotheses or theories, which are then tested using quantitative methods [19]. The second limitation of case studies concerns qualitative methods. Several criticisms are raised in this respect, including: non-systematic analysis of data or failure to meet the criterion of intersubjective verifiability.

However, a rigorous conducting of a case study procedure makes it possible to avoid them [20]. The third limitation is related to the case study procedure, as some of its important stages, such as case selection, formulation of generalizations, may reduce the cognitive value of test results or decrease their reliability [21]. Therefore, it is necessary to refer to the criterion of the research reliability, the evaluation of which, in the case of a case study, may be the same as that of a qualitative study, i.e. using criteria such as fidelity, transitivity, robustness and verifiability [15]. It should be noted that, despite the existence of criteria for assessing the rigour of the examination of case studies, the authors using this method in works published in the highest-ranking English-language journals in the years 1995-2000 refer to positivist evaluation criteria, i.e. accuracy and reliability [12]. This ambivalence in the assessment of case studies underlines the need to take into account their particularities and, on the other hand, confirms the concern to meet the traditional requirements of scientific [22-59].

### Research method

Conclusions from the literature analysis on the use of case studies in the research process in management sciences indicate the need to diagnose the impact of the case study method on the analysis of the research problem. Therefore, the article poses the following research questions:

Q1. Should qualitative methods in research processes be supported by case studies?

Q2. Does the case study provide an opportunity for an in-depth analysis of the research problem?

Answering such research questions will allow for the following hypothesis to be verified: 'The case study provides an opportunity

for an in-depth analysis of the research problem’.

In order to carry out the research, a survey questionnaire was used, which was distributed among the target group that included:  
 - 93 domestic higher education institutions,  
 - 2307 domestic academics,  
 - 272 foreign universities,  
 - 21024 foreign academics.

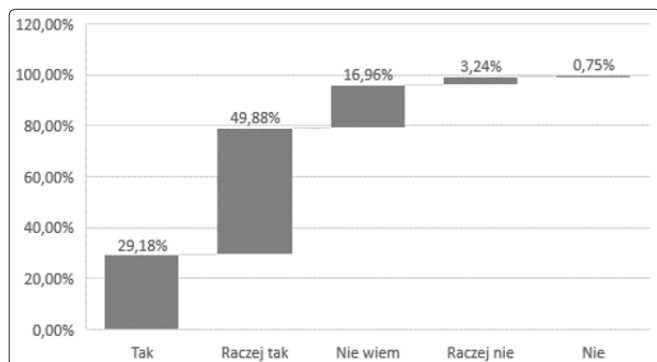
The time scope of the research covered the period from October 2016 to April 2018, during which 401 received questionnaires were analysed.

Respondents answered the questions in writing during scientific conferences and on-line on the basis of a database of e-mail addresses. The questionnaire included questions based on the five-point Likert scale and open and ranked questions.

The questionnaire contained a total of 41 questions, including 5 questions on the relevance of research processes, approaches, and techniques and methods, 33 questions related to the problem of the research process, and the last 3 questions were related to demographics.

## Research findings

### Should qualitative methods in research processes be supported by case studies?



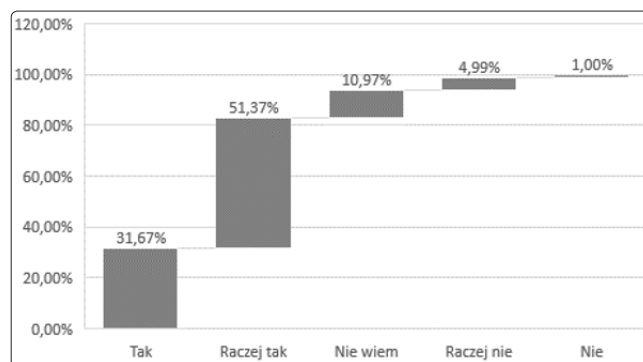
**Figure 1:** Research findings: Q1. Should qualitative methods in research processes be supported by case studies? The Author’s own research

When analysing the results obtained, the vast majority of respondents (79.06%) believe that qualitative methods in research processes should be supported by case studies. A research object may be, on the one hand, an individual decision, some kind of business process of an organisation and on the other hand, a cluster (e.g. Silicon Valley) or the whole country [9]. [60,61]. For this reason, it must not be assumed that the size or characteristics of the object shall decide whether the object is to be treated as a case for study. Unlike quantitative studies, where the features and size of a sample and its selection methods are the most important, the nature of a case study is determined by the use of (multiple) exploratory methods in order to gain as much understanding as possible of the studied phenomenon. Some researchers point out that the essence of the case is determined by the use of interpretative methods [10].

Testing of theories in the management sciences shall be considered as the quantitative determination of the hypothetical regularity of the relationship between variables using statistical techniques. That is, to obtain correlation coefficients and, consequently, to confirm the relationships identified in the hypothesis.

Falsification is the basic argument supporting the use of case study theory for testing. It involves falsifying a theory by means of case studies that contradict it or indicate that theoretical explanation does not make it possible to understand organisational reality.

Another argument for the relevance of case studies concerns the nature of the hypotheses being tested, since testing a theory is actually a juxtaposition of hypothetical relationships between variables and the actual behaviour of those variables. In conclusion, it should be pointed out that the usefulness of case studies is limited to a certain type of hypothesis being tested and is gradual, and that their application should be the second or third choice of research strategy rather than the first.



**Figure 2:** Research findings: Q2. Does the case study provide an opportunity for an in-depth analysis of the research problem? The Author’s own research.

When analysing the results obtained, the vast majority of respondents (83.04%) believe that the case study provides an opportunity to analyse the research problem in depth. Case studies involve an in-depth analysis of phenomena and processes in their real environment [63,64]. It does not attempt to test theories, except to falsify existing hypotheses. Nonetheless, it contributes to a better understanding of the research subject [15]. The essence of the application of case studies is not to achieve any universal patterns, but to predict the impact of the environment and circumstances on the shape of the obtained findings. The context of the case study entails consequences [15].

Procedural consequences, since the researcher cannot assess the impact of the circumstances at the time of the study, and therefore the case study procedure implies repetitiveness, Cognitive consequences, since the knowledge obtained is of situational character- a given situation may not be repeated, Tool-related consequences, as the research entails taking into consideration not only of the research subject but also of its surroundings and the impact of those surroundings on the object under consideration.

## Summary and research findings

The aim of the article was to verify the following hypothesis: ‘The case study provides an opportunity for an in-depth analysis of the research problem’. Conclusions resulting from the analysis of the literature and the author’s own research clearly confirm that:

- The case study provides an opportunity for an in-depth analysis of the research problem,
- Qualitative methods in research processes should be accompanied by case studies.

Moreover, despite the increase in the number of research projects, publications and doctoral theses that benefit from case studies, this methodology is sometimes considered (also by its enthusiasts) to be easier than quantitative research. In turn, opponents claim that it is characterised by a relatively low level of scientific rigour. Case studies appear quite frequently in scientific and didactic publications, thus this commonly used term seems to be homologous, but in fact it is far from it. The main source of ambiguity is the definition of the case itself.

Applicative case studies must meet several conditions in order to fulfil the role defined above:

The first condition refers to the defining of a managerial problem, determined by the case under consideration. It is about creating a possibility for the manager to adapt this case to the situation in which he/she is (might be). These types of case studies are commonly used at managerial courses and Master of Business Administration (MBA) studies. They use didactic techniques that are primarily based on case studies.

Another condition is related to the way a given case is studied. Descriptive techniques are usually used to this end. Their purpose is to present the circumstances and process of solving the problem in a given context. The applicative case study performs an operational role, highlighting the circumstances which, in this case, yielded the desired effect [65-77].

## References

1. Carminati L (2018) Generalizability in Qualitative Research: A Tale of Two Traditions.
2. Thomae H (1999) The Nomothetic-Idiographic Issue: Some Roots and Recent Trends. *International Journal of Group Tensions* 28: 187-215.
3. Chandler AD (1962) *Strategy and Structure*. Chapters in the History of the American Industrial Enterprise. Boston: MIT Press.
4. Kanter RM (1977). *Men and Women of the Corporation*. New York: Basic Books.
5. Eccles R, Crane D (1988) *Doing Deals: Investment Banks at Work*, Boston: Harvard Business School Press.
6. Eisenhardt K, Zbaracki M (1992) Strategic Decision Making. *Strategic Management Journal*, 13: 17-37.
7. Mintzberg H, Waters J (1985) Of Strategies, Deliberate and Emergent. *Strategic Management Journal*, 6: 257-272.
8. Raich S, Birkinshaw J, Probst G, Tushman M (2009) Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance. *Organization Science*, 20: 685-695.
9. Buck T, Shahrim A (2005) The Translation of Corporate Governance Changes Across National Cultures: The Case of Germany. *Journal of International Business Studies*, 36: 42-64.
10. Dul J, Hak T (2016) *Case Study Methodology in Business Research*. New York: Routledge.
11. Dźwigoł H (2018) Modern Research Processes in Management Sciences. Methodological and Methodical Conditions, in Polish [Współczesne procesy badawcze w naukach o zarządzaniu. Uwarunkowania metodyczne i metodologiczne]. Warszawa: PWN.
12. Dźwigoł H (2018) Współczesne procesy badawcze w naukach o zarządzaniu. Uwarunkowania metodyczne i metodologiczne. Warszawa: PWN.
13. Flyvbjerg B (2004) Five Misunderstandings about Case-Study Research. In: C. Seale, G. Gobo, J.F. Gubrium, and D. Silverman (Eds.). *Qualitative Research Practice*, London-Thousand Oaks: Sage.
14. Eisenhardt K (1991) Better Stories and Better Constructs: The Case of Rigor and Comparative Logic. *Academy of Management Review* 16: 620-627.
15. Czakon W (2016) Zastosowanie studiów przypadków w badaniach nauk o zarządzaniu. In: W. Czakon (Eds.). *Podstawy metodologii badań w naukach o zarządzaniu*, wyd. III. Piaseczno: Wydawnictwo Nieoczywiste.
16. Toshimasa Y. (2017). *An Approach Through Kansei Science. Emotions and Affect in Human Factors and Human-Computer Interaction*, 195-211.
17. Hancock DR, Algozzine B (2017) *Doing Case Study Research: A Practical Guide for Beginning Researchers*. Third Edition. New York and London: Teachers College Press.
18. Morgan SJ, Pullon S R H, Macdonald L M (2016) *Case Study Observational Research: A Framework for Conducting Case Study Research Where Observation Data Are the Focus*. *Qualitative Health Research*, 27: 1060-1068.
19. Thomas G (2017) *How to Do Your Research Project: A Guide for Students*. London: Sage.
20. Walliman N (2017) *Research Methods: The Basics*. London: Routledge.
21. Hair JF, Page M, Brunsveld N (2019) *Essentials of Business Research Methods*. 4th Edition. New York: Routledge, <https://doi.org/10.4324/9780429203374>
22. Dzwigoł H (2020a) Innovation in Marketing Research: Quantitative and Qualitative Analysis. *Marketing and Management of Innovations*, 1: 128-135.
23. Dzwigoł H (2020b) Methodological and Empirical Platform of Triangulation in Strategic Management. *Academy of Strategic Management Journal*, 19: 1-8.
24. Demytyev V V, Kwilinski A (2020) Institutional Component of Production Costs. *Journal of Institutional Studies*, 12: 100-116.
25. Dzwigoł H, Dzwigoł-Barosz M (2020) Sustainable Development of the Company on the Basis of Expert Assessment of the Investment Strategy. *Academy of Strategic Management Journal*, 19: 1-6.
26. Kharazishvili Y, Kwilinski A, Grishnova O, Dzwigoł H (2020) Social Safety of Society for Developing Countries to Meet Sustainable Development Standards: Indicators, Level, Strategic Benchmarks (with Calculations Based on the Case Study of Ukraine). *Sustainability*, 12: 8953.
27. Boiko V, Kwilinski A, Misiuk M, Boiko L (2019) Competitive Advantages of Wholesale Markets of Agricultural Products as a Type of Entrepreneurial Activity: The Experience of Ukraine and Poland. *Economic Annals-XXI*, 175: 68-72.
28. Czyżewski B, Matuszczak A, Miskiewicz R (2019) Public Goods Versus the Farm Price-Cost Squeeze: Shaping the Sustainability of the EU's Common Agricultural Policy. *Technological and Economic Development of Economy*, 25: 82-102.
29. Czakon W, Kawa A, Scott S (2020) Network Orientation of Logistics Service Providers: The Construct, Dimensionality and Measurement Scale. *International Journal of Logistics Research and Applications*, 23: 474-492.
30. Dalevska N, Khobta V, Kwilinski A, Kravchenko S (2019) A Model for Estimating Social and Economic Indicators of Sustainable Development, Entrepreneurship and Sustainability Issues, 6: 1839-1860.
31. Dyduch W (2019) Entrepreneurial Strategy Stimulating Value Creation: Conceptual Findings and Some Empirical Tests. *Entrepreneurial Business and Economics Review*, 7: 65-82.
32. Dyduch, W. (2019). Organizational Design Supporting Innovativeness. *Przegląd Organizacji*, 6: 16-23.
33. Gorynia M, Trąpczyński P, Bytniewski S (2019) The Concepts of Strategy and Business Models in Firm Internationalization Research: Towards a Research Agenda. *International Entrepreneurship Review*, 5: 7-21.
34. Gorynia M (2019) Competition and Globalisation in Economic Sciences. *Selected Aspects. Economics and Business Review*, 5: 118-133.
35. Klimas P, Czakon W, Kraus S, Kailer N, Maalaoui A (2020) Entrepreneurial Failure: A Synthesis and Conceptual Framework of its Effects. *European Management Review*.

- <https://doi.org/10.1111/emre.12426>
36. Kwilinski A (2017) Development of Industrial Enterprise in the Conditions of Formation of Information Economics. *Thai Science Review*, 85 – 90.
  37. Kwilinski A (2018a) Trends of Development of the Information Economy of Ukraine in the Context of Ensuring the Communicative Component of Industrial Enterprises. *Economics and Management*, 1: 64-70.
  38. Kwilinski A (2018b) Mechanism of Formation of Industrial Enterprise Development Strategy in the Information Economy. *Virtual Economics*, 1:7-25.
  39. Kwilinski A (2018c) Mechanism of Modernization of Industrial Sphere of Industrial Enterprise in Accordance with Requirements of the Information Economy. *Marketing and Management of Innovations*, 4: 116-128.
  40. Kwilinski A, Dalevska N, Kravchenko S, Hroznyi I, Kovalenko I (2019a) Formation of the Entrepreneurship Model of E-Business in the Context of the Introduction of Information and Communication Technologies. *Journal of Entrepreneurship Education*, 22: 1-7.
  41. Kwilinski A, Ruzhytskyi I, Patlachuk V, Patlachuk O, Kaminska B (2019b) Environmental Taxes as a Condition of Business Responsibility in the Conditions of Sustainable Development. *Journal of Legal, Ethical and Regulatory Issues*, 22: 1-6.
  42. Kwilinski A, Volynets R, Berdnik I, Holovko M, Berzin P (2019c) E-Commerce: Concept and Legal Regulation in Modern Economic Conditions. *Journal of Legal, Ethical and Regulatory Issues*, 22: 1-6.
  43. Cyfert S, Glabiszewski W, Krzakiewicz K, Zastempowski M (2020) The Importance of Dynamic Capabilities in the Processes of Alignment of Chemical Industry Enterprises to Changes in the Environment. *Przemysl Chemiczny*, 99: 953-956.
  44. Lakhno V, Malyukov V, Bochulia T, Hipters Z, Kwilinski A, Tomashevskaya O (2018) Model of Managing of the Procedure of Mutual Financial Investing in Information Technologies and Smart City Systems. *International Journal of Civil Engineering and Technology*, 9: 1802-1812.
  45. Miskiewicz R (2018) The Importance of Knowledge Transfer on the Energy Market. *Polityka Energetyczna*, 21: 49-62.
  46. Miskiewicz R (2019) Challenges Facing Management Practice in the Light of Industry 4.0: The Example of Poland. *Virtual Economics*, 2: 37-47.
  47. Miskiewicz R (2020) Internet of Things in Marketing: Bibliometric Analysis. *Marketing and Management of Innovations*, 3: 371-381.
  48. Miśkiewicz R, Wolniak R (2020) Practical Application of the Industry 4.0 Concept in a Steel Company. *Sustainability*, 12: 5776.
  49. Pająk K, Kamińska B, Kvilinskyi O (2016) Modern Trends of Financial Sector Development under the Virtual Regionalization Conditions. *Financial and Credit Activity: Problems of Theory and Practice*, 2: 204-217.
  50. Pająk K, Kvilinskyi O, Fasięcka O, Miskiewicz R (2017) Energy security in regional policy in Wielkopolska region of Poland. *Economics and Environment*, 2: 122-138.
  51. Saługa PW, Szczepańska-Woszczyzna K, Miśkiewicz R, Chład M (2020) Cost of Equity of Coal-Fired Power Generation Projects in Poland: Its Importance for the Management of Decision-Making Process. *Energies*, 13: 4833.
  52. Savchenko T, Basiurkina N, Rodina O, Kwilinski A (2019) Improvement of the Assessment Methods of Product Competitiveness of the Specialized Poultry Enterprises. *Management Theory and Studies for Rural Business and Infrastructure Development*, 41: 43-61.
  53. Tkachenko V, Kwilinski A, Korystin O, Svyrydiuk N, Tkachenko I (2019a) Assessment of Information Technologies Influence on Financial Security of Economy. *Journal of Security and Sustainability*, 8: 375-385.
  54. Tkachenko V, Kwilinski A, Klymchuk M, Tkachenko I (2019b) The Economic-Mathematical Development of Buildings Construction Model Optimization on the Basis of Digital Economy. *Management Systems in Production Engineering*, 27: 119-123.
  55. Tkachenko V, Kwilinski A, Tkachenko I, Puzyrova P (2019c) Theoretical and Methodical Approaches to the Definition of Marketing Risks Management Concept at Industrial Enterprises. *Marketing and Management of Innovations*, 2: 228-238.
  56. Tkachenko V, Kwilinski A, Kaminska B, Tkachenko I, Puzyrova P (2019d) Development and Effectiveness of Financial Potential Management of Enterprises in Modern Conditions. *Financial and Credit Activity: Problems of Theory and Practice*, 3: 85-94.
  57. Trapeczyński P, Gorynia M, Nowak J, Wolniak R (2019) EU Countries from Central and Eastern Europe, and the Investment Development Path Model: A New Assessment. *Argumenta Oeconomica*, 2: 385-406.
  58. Yakubovskiy M, Liashenko V, Kamińska B, Kvilinskyi O (2017) Economy Modernization of Industrial Regions (Based on the Example of Ukraine). In P. Głowski, & O. Kvilinskyi (Eds.), *Economic Transformation in Ukraine: Comparative Analysis And European Experience 12-29*. Warsaw: Consilium Sp. z o.o.
  59. Zastempowski M, Glabiszewski W, Krukowski K, Cyfert S (2020) Technological Innovation Capabilities of Small and Medium-Sized Enterprises. *European Research Studies*, 23: 460-474.
  60. Mintzberg H (1979) An Emerging Strategy of „Direct” Research. *Administrative Science Quarterly*, 6: 582-589.
  61. Dyer J, Nobeoka K (2000) Creating and Managing a High Performance Knowledge-Sharing Network: The Toyota Case. *Strategic Management Journal*, 21 (special issue), 345-367.
  62. Beach D, Pedersen RB (2016) Causal Case Study Methods: Foundations and Guidelines for Comparing, Matching, and Tracing. University of Michigan Press.
  63. Tight M (2017) *Understanding Case Study Research: Small-scale Research with Meaning*. London: Sage.
  64. Chygryn O, Bilan Y, Kwilinski A (2020) Stakeholders of Green Competitiveness: Innovative Approaches for Creating Communicative System. *Marketing and Management of Innovations*, 3: 356-368.
  65. Dźwigoł H, Dźwigoł-Barosz M (2018) Scientific Research Methodology in Management Science. *Financial and Credit Activity: Problems of Theory and Practice*, 2: 424-437.
  66. Dźwigoł H (2019a) Research Methods and Techniques in New Management Trends: Research Results. *Virtual Economics*, 2: 31-48.
  67. Dzwigoł H (2019b) The Concept of the System Approach of the Enterprise Restructuring Process. *Virtual Economics*, 2: 46-70.
  68. Dźwigoł H, Dźwigoł-Barosz M, Zhyvko Z, Miśkiewicz R, Pushak H (2019a) Evaluation of the Energy Security as a Component of National Security of the Country. *Journal of Security and Sustainability Issues*, 8: 307-317.
  69. Dźwigoł H, Shcherbak S, Semikina M, Vinichenko O, Vasiuta V (2019b) Formation of Strategic Change Management

- 
- System at an Enterprise. Academy of Strategic Management Journal, 18: 1-10.
70. Dźwigol H, Dźwigol-Barosz M, Miskiewicz R, Kwilinski A (2020a) Manager Competency Assessment Model in the Conditions of Industry 4.0. Entrepreneurship and Sustainability Issues, 7: 2630-2644.
71. Dźwigol H, Dźwigol-Barosz M, Kwilinski A (2020b) Formation of Global Competitive Enterprise Environment Based on Industry 4.0 Concept. International Journal of Entrepreneurship, 24: 1-8.
72. Dźwigol H, Wolniak R (2018) Controlling in the management process of a chemical industry production company [Controlling w procesie zarządzania chemicznym przedsiębiorstwem produkcyjnym]. Przemysł Chemiczny, 7: 114933.
73. Ferran-Ferrer N, Guallar J, Abadal E, Server A (2017) Research methods and techniques in Spanish library and information science journals (2012-2014). Information Research, 22.
74. Kwilinski A (2019) Implementation of Blockchain Technology in Accounting Sphere. Academy of Accounting and Financial Studies Journal, 23: 1-6.
75. Kwilinski A, Vyshnevskiy O, Dźwigol H (2019d) Digitalization of the EU Economies and People at Risk of Poverty or Social Exclusion. Journal of Risk and Financial Management, 13: 142.
76. Kwilinski A, Dźwigol H, Dementyev V (2020e) Model of Entrepreneurship Financial Activity of the Transnational Company Based on Intellectual Technology. International Journal of Entrepreneurship, 24: 1-8.
77. Qualitative Health Research, 28: 2094-2101, <https://doi.org/10.1177/1049732318788379>.

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