INTERNAL AUDIT AND MANAGEMENT REVIEW IN ISO 9001:2015

Radosław WOLNIAK
Politechnika Śląska, Wydział Organizacji i Zarządzania, Instytut Ekonomii i Informatyki; rwolniak@polsl.pl,
ORCID: 0000-0003-0317-9811

Purpose: The aim of the paper is to analyze the problems connected with internal audit and management review within the organization in the ISO 9001:2015 implementation process.

Design/methodology/approach: Critical literature analysis. Analysis of international literature from main databases and polish literature and legal acts connecting with researched topic.

Findings: To achieve good functioning level of Quality management system we need to do periodically the internal audits and management reviews. Audit is the examination or inspection of various books of accounts by an auditor followed by physical checking of inventory to make sure that all departments are following documented system of recording transactions. Audits are very useful tool to analyses the organization functioning and improve it’s performance. On the basis of the conducted analysis we can say that the main activities needed in the internal audit process are: interview personnel, observe operations, review documents and records and examine records. In the audit process is especially important for auditor to have appropriate qualities. They should be according to ISO 19011 requirements. The best solution for the analysis of the performance of ISO 9001 system can be done when we not only use internal audits but also management reviews in our managerial practice.

Originality/value: Detailed analysis of all subjects related to internal audits and management reviews in ISO 9001:2015.

Keywords: quality management, ISO 9001:2015, ISO 9001, audit, management review.

Category of the paper: literature review.

1. Introduction

To achieve good functioning level of Quality management system we need to do periodically the internal audits and management reviews. Audit is the examination or inspection of various books of accounts by an auditor followed by physical checking of inventory to make sure that all departments are following documented system of recording transactions (Horodecka, and Wolniak, 2015; Pacana, 2014; Pacana et al., 2014, 2017; Pacana, and Stadnicka, 2006, 2017; Wolniak, 2011; Wolniak, and Sułkowski, 2015, 2016; Wolniak et al.,
2019; Wolniak, and Skotnicka-Zasadzień, 2008, 2011, 2019; Novakova et al., 2016; Stawiar ska et al., 2020). It is done to ascertain the accuracy of financial statements provided by the organization (Hillson, 2001; Gębczyńska, and Wolniak, 2018; Juszczak-Wiśniewska, and Ligarski, 2015, 2016; Łuczak, and Wolniak, 2016; Sułkowski and Wolniak, 2016, 2018; Szczucka-Lasota, and Wolniak, 2018). Audit can be done internally by employees or heads of a particular department and externally by an outside firm or an independent auditor. The idea is to check and verify the accounts by an independent authority to ensure that all books of accounts are done in a fair manner and there is no misrepresentation or fraud that is being conducted (ISO 9001:2015; Chen et al., 2016; Cholewicka-Goździk, 2016; Łagowski and Żuchowski, 2016; Wolniak, and Hąbek, 2015; Wolniak, and Skonicka-Zasadzień, 2010; Wolniak, and Sułkowski, 2015; Wolniak, 2020).

The aim of the paper is to analyze the problems connected with the audit and management review within the organization in the ISO 9001:2015 implementation process.

2. Internal audit

To assess the functioning of the implemented quality management system organization should conduct internal audits at planned intervals to provide information on whether the quality management system (ISO 9001:2015, Egonsson et al., 2013):

- conforms to:
  - the organization’s own requirements for its quality management system;
  - the requirements of this International Standard;
- is effectively implemented and maintained.

Internal audit is a very strong tool by which an organization can make substantial improvement in its systems and performance. The sincerity of the management and staff in religiously following the process of internal quality audit is the key factor for getting the full advantage of the system (Purushothama, 2015). Basic definitions connected with auditing quality management system are in the table 1.
Table 1.
Terms connected with auditing quality management systems

| Term            | Definition                                                                                                                                                                                                 |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Audit           | Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled. Internal audits, sometimes called first party audits, are conducted by the organization itself, or on its behalf, for management review and other internal purposes (e.g. to confirm the effectiveness of the management system or to obtain information for the improvement of the management system). Internal audits can form the basis for an organization’s self-declaration of conformity. In many cases, particularly in small organizations, independence can be demonstrated by the freedom from responsibility for the activity being audited or freedom from bias and conflict of interest. External audits include second and third party audits. Second party audits are conducted by parties having an interest in the organization, such as customers, or by other persons on their behalf. Third party audits are conducted by independent auditing organizations, such as regulators or those providing certification. |
| Audit criteria  | Criteria set of policies, procedures or requirements used as a reference against which audit evidence (3.3) is compared.                                                                                         |
| Audit evidence  | Records, statements of fact or other information which are relevant to the audit criteria and verifiable.                                                                                                       |
| Audit findings  | Results of the evaluation of the collected audit evidence against audit criteria.                                                                                                                                 |
| Audit conclusion| Outcome of an audit, after consideration of the audit objectives and all audit findings.                                                                                                                                 |
| Audit client    | Organization or person requesting an audit.                                                                                                                                                                |
| Auditor         | Person who conducts an audit.                                                                                                                                                                               |
| Audit team      | One or more auditors conducting an audit, supported if needed by technical experts.                                                                                                                        |
| Technical expert| Person who provides specific knowledge or expertise to the audit team.                                                                                                                                       |
| Observer        | Person who accompanies the audit team but does not audit.                                                                                                                                                  |
| Audit plan      | Description of the activities and arrangements for an audit.                                                                                                                                               |

Source: own work on basis: (ISO 19011:2011. Guidelines for auditing management system, Hoyle, 2009; Locher, 2008).

The internal audit has four primary objectives (Philips, 2015; Misztal, 2013):
- To verify conformance to applicable standards.
- To verify conformance to documented processes and procedures.
- To verify effectiveness of business processes.
- To identify opportunities to improve the quality management system.

The objectives of audit can be based on (ISO 19011:2011; Mitra, 2016):
- management priorities;
- commercial and other business intentions;
- characteristics of processes, products and projects, and any changes to them;
- management system requirements;
- legal and contractual requirements and other requirements to which the organization is committed;
- need for supplier evaluation;
- needs and expectations of interested parties, including customers;
- auditee’s level of performance, as reflected in the occurrence of failures or incidents or customer complaints;
- risks to the auditee;
• results of previous audits;
• level of maturity of the management system being audited.
In this case organization should (ISO 9001:2015; Natarjan, 2017; Novakova et al., 2016):
• plan, establish, implement and maintain an audit programme(s) including the frequency, methods,
• responsibilities, planning requirements and reporting, which shall take into consideration the importance of the processes concerned, changes affecting the organization, and the results of previous audits;
• define the audit criteria and scope for each audit;
• select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;
• ensure that the results of the audits are reported to relevant management;
• take appropriate correction and corrective actions without undue delay;
• retain documented information as evidence of the implementation of the audit programme and the audit results.

The audit programme should include information and resources necessary to organize and conduct its audits effectively and efficiently within the specified time frames and can also include the following points (ISO 19011:2011; Pokosińska et al., 2002):
• objectives for the audit programme and individual audits;
• extent/number/types/duration/locations/schedule of the audits;
• audit programme procedures;
• audit criteria;
• audit methods;
• selection of audit teams;
• necessary resources, including travel and accommodation;
• processes for handling confidentiality, information security, health and safety, and other similar matters.

Internal auditors often only rely upon documents and records as evidence of process conformity and don’t adequately interview personnel and observe operations (Szkiel, 2016). To change this and attain conformity internal auditors should use four activities described in the table 2.

There is no perfect number of auditors an organization must have to perform effective internal audits (Vogt, 2010). Some organizations, particularly those in the medical and aerospace industries are fortunate enough to have full-time internal auditors. most, however, call on employees who are already fully utilized in other roles. The number of auditors the organizations should to use depend on several facts (Philips, 2015):
• The size of the organization.
• The type of product or service produced.
How you define the scope of each audit. Auditors and the person managing audit programme should (ISO 19011:2011):

- perform their work with honesty, diligence, and responsibility;
- observe and comply with any applicable legal requirements;
- demonstrate their competence while performing their work;
- perform their work in an impartial manner, i.e. remain fair and unbiased in all their dealings;
- be sensitive to any influences that may be exerted on their judgement while carrying out an audit.

### Table 2.
**Activities in audit to ensure conformity**

| Activity                              | Characteristic                                                                                      |
|---------------------------------------|-----------------------------------------------------------------------------------------------------|
| Interview personnel                   | Based on your audit planning and checklist questions, ask employees about their jobs. Listen to what they tell you and see if their explanations match the defined process. Use open-ended questions to elicit more complete responses. Do not be afraid to challenge and probe or follow an audit trail to see where it leads you. Talking to people is the best possible way to test their understanding and knowledge about the processes and sub-processes in which they are involved. |
| Observe operations                    | Aid your own understanding of the process by watching it being performed. See if the observed practices comply with requirements. You will discover the persons being interviewed are more relaxed when you allow them to demonstrate their jobs. In addition, internal audits will be less disruptive since work is actually being completed. |
| Review documents and records          | Ask the persons being interviewed what documents and records are used in their work. You may find documents, records and forms beyond those identified in your audit planning. See if the documents are adequately controlled and available for use. Refer to the documents and records to help you follow the work being shown. Verify the records described in the documents are being properly collected and controlled. Also challenge the need for documentation and always try to find better and more effective ways of managing and controlling the processes being audited. |
| Examine records                       | Auditors cannot interview every person, observe every activity, look at every document, and evaluate every record. You should strive for representative samples that allow you to make informed judgements. Since audits are limited due to sampling, non-conformities may continue to exist in the system beyond those identified and reported. However, with time and well planned audits you can feel confident that you have thoroughly reviewed your system and its performance. |

Source: own work on basis: (ISO 9001, 2020).

The ISO 19011 standard specifies the required auditors qualities (ISO 19011:2011):

- Ethics: An auditor will possess personal characteristics like credibility, integrity, and honesty and provide reliable information and results regarding the unit the auditor is auditing.
- Open-minded: An auditor will be willing to listen, learn, and accept new ideas and to reflect them on the situations or requirements. Sometimes auditor may encounter new approaches or opinions. An auditor must have the ability to assess and accept different points of view as long as they achieve the requirements.
- Diplomatic: An auditor will be polite and well-mannered; an auditor serves as the representative of the top management.
- Observer: An auditor will have the ability to recognize and evaluate what he or she sees and to understand and interpret events without deep interrogation.
- Perspective: An auditor will have the ability to evaluate situations beyond the person’s appearance, with a systematic view of things, and will have the ability to understand the organizational consequences of the evidence he or she finds.
- Versatile: An auditor will have the ability to mobilize from one situation to another without losing direction. One moment the auditor may audit one field; the next moment it may be another. An auditor must be able to stay focused.
- Structured: An auditor will advance and progress the audit according to a defined method or plan and within the boundaries of the scope.
- Persistence: An auditor must be persistent with their objectives, so that when they ask a question, they must receive an answer to it and not be diverted by interferences or disturbances.
- Independent: An auditor shall have their own opinions on things, will not be influenced by the environment, and will be free from conflict of interest.
- Decisive: An auditor must be ready to make decisions even when they are hard or will not satisfy the auditee.

Any findings during the audit shall be indicated with one of the following classifications (Abuhay, 2017):
- Conformity – the process or product sampled was in accordance with the relevant requirements and criteria.
- Opportunity for improvement – in the auditor’s opinion, an improvement can be applied to the matter, and the organization may or may not adopt this opportunity and submit it to the control of opportunities as required in clause —Actions to address risks and opportunities.
- Nonconformity – the process sampled was not according to the requirements and the audit criteria.
- If the organization feels the need to add another classification suitable to its nature or processes, it may do that.

### 3. Management review

Next method of assessment quality’s management system functioning is management review. In this case top management should to review the organization’s quality management system, at planned intervals, to ensure its continuing stability, adequacy, effectiveness and alignment with the strategic direction of the organization (Ząbek, 2016; Żemigła, 2017).
The management review shall be planned and carried out taking into consideration following points (ISO 9001:2015):

- the status of actions from previous management reviews;
- changes in external and internal issues that are relevant to the quality management system;
- information on the performance and effectiveness of the quality management system, including trends in:
  - customer satisfaction and feedback from relevant interested parties;
  - the extent to which quality objectives have been met;
  - process performance and conformity of products and services;
  - nonconformities and corrective actions;
  - monitoring and measurement results;
  - audit results;
  - the performance of external providers;
- the adequacy of resources;
- the effectiveness of actions taken to address risks and opportunities;
- opportunities for improvement.

The outputs of the management review shall include decisions and actions related to:\n
- opportunities for improvement;
- any need for changes to the quality management system;
- resource needs.

The main inputs to analyze in the management review were characterized in the table 3:

| Input                                      | Characteristic                                                                 |
|--------------------------------------------|-------------------------------------------------------------------------------|
| Actions from Previous Reviews              | The outputs of management review are mostly in the form of action points, assigned to relevant process owners with time schedule for completion. The status of the action points of the previous management reviews is discussed until they are closed. Evidences for the implementation of the action points are maintained. |
| Changes in External and Internal Issues    | Monitoring the changes in external and internal issues that are relevant to organization is assigned to appropriate process owners during management reviews. The results of monitoring the issues are presented by the process owners during the reviews. The results are discussed and appropriate actions are decided for improving the quality management systems of organization. |

1 ISO 9001:2015. Quality management systems – Requirements.
Results of Performance Evaluation | Information on the performance and effectiveness of the quality management systems is discussed in management review. The sources of information are the outputs of monitoring, measurement, analysis and evaluation, customer satisfaction and internal and external audits.
Monitoring the needs and requirements of external providers is assigned to appropriate process owners during management reviews. Feedback from external providers is presented by the process owners:
- Quality objectives, process performance, conformity of products and services and performance of external providers with monitoring and measurement results.
- Internal audit results and external audit reports.
- Performance of external providers.

Other Inputs | The additional requirements for people, infrastructure, operating environment and enhancing organizational knowledge and competence of personnel are presented by process owners for the implementation of the quality management systems. The effectiveness of the action taken to address risks and opportunities are also presented by relevant process owners. The inputs from process owners are reviewed. New opportunities for improving the quality management systems are identified during the review.

Source: own work on basis: (Natarajan, 2017).

4. Conclusion

Audits are very useful tool to analyses the organization functioning and improve it’s performance. On the basis of the conducted analysis we can say that the main activities needed in the internal audit process are: interview personnel, observe operations, review documents and records and examine records. In the audit process is especially important for auditor to have appropriate qualities. They should be according to ISO 19011 requirements. The best solution for the analysis of the performance of ISO 9001 system can be done when we not only use internal audits but also management reviews in our managerial practice.

References

1. Abuhav, I. (2017). ISO 9001:2015. A Complete Guide to Quality Management Systems, London: CRC Press.
2. Chen, C.K., Lee, J.D., Dahlgaard, J.J. (2016). A stepwise ISO-based TQM implementation approach using ISO 9001:2015, Management and Production Engineering Review, 4, 65-75.
3. Cholewicka-Goździk, K. (2016). Struktura normy ISO 9001:2015, podstawowe wymagania. Problemy Jakości, 1, 25-30.
4. Egonsson, E., Bayarsaikhan, K., Ting, Ly, T. (2013). After-sales services and customer relationship marketing: a multiple case study within Swedish heavy equipment machinery industry. Kalmar: Linneus University.
5. Gębczyńska, A., Wolniak, R. (2018). Process management level in local government. Philadelphia: CreativeSpace.
6. Hillson, D. (2001). Effective strategies for exploiting opportunities. Nashville: Tennessee.
7. Horodecka, A.M., Wolniak, R. (2015). Valutazione delle non conformita nell’esempio di un Azienda Italiana. In: J. Kaźmierczak (ed.), Systemy Wspomagania Inżynierii Produkcji. Review of problems and solutions (pp. 18-31).
8. Hoyle, D. (2009). ISO 9000. Quality systems handbook. Boston: Elsevier.
9. ISO 19011:2011. Guidelines for auditing management system.
10. ISO 9001 Quality Management Systems. tips for Internal Auditing, bsi, https://www.google.pl/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0ahUKEwjj0ZOJs63ZAhULKFAKHKD6MQFggzMAA&url=https%3A%2F%2Fwww.bsigroup.com%2FLocalFiles%2Fen-AE%2FPerformance%2FISO%25209001%2FISO%25209001%2520Internal%2520Audit%2520Tips%2520Hi-Res%2520MEA.pdf&usg=AOvVaw0cPzBYm8HY_gfDsuzzy7a0, 17.09.2020.
11. ISO 9001:2015. Quality management systems – Requirements.
12. Juszczak-Wiśniewska, A., Ligarski, M. (2015). Weryfikacja przydatności opracowanego narzędzia badawczego do analizy problemów w systemach zarządzania jakością. Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie, 80, 133-141.
13. Juszczak-Wiśniewska, A., Ligarski, M. (2015). Analysis of the causes the quantitative changes and trends in conferred ISO 9001 certificates in Poland Research based on the data from audits. Systemy Wspomagania w Inżynierii Produkci, 1, 42-50.
14. Juszczak-Wiśniewska, A., Ligarski, M. (2016). Akredytacja i certyfikacja systemów zarządzania jakością w placówkach medycznych w Polsce – wyniki badań. Systemy Wspomagania w Inżynierii Produkci, 2, 163-171.
15. Łagowski, E., Żuchowski, J. (2016). Aktualizacje normy ISO 9001 w aspekcie bieżących potrzeb gospodarczych. Problemy Jakości, 10, 15-22.
16. Ligarski, M. (2013). Problems examination in quality management system. Acta Technologica Agriculturae, 4, 108-112.
17. Ligarski, M. (2014). Diagnoza systemu zarządzania jakością w polskich organizacjach. Problemy Jakości, 5, 14-22.
18. Locher, D. (2008). Value Stream Mapping for Lean Development. New York: Taylor & Francis.
19. Łuczak, J., Wolniak, R. (2016). Integration of quality environment and safety management systems in a foundry. Metalurgija, 4, 843-845.
20. Misztal, A. (2013). When you need validation of the process? Machines Technology Materials, 11, 53-67.
21. Mitra, A. (2016). Fundamentals of Quality Control improvement. New Jersey: Wiley & Sons.
22. Montgomery, D.C. (2009). *Introduction to statistical quality control*. New York: Wiley & Sons.
23. Natarajan, D. (2015). *Reliable design of electronic equipment: an engineering guide*. Bangalore: Springer.
24. Natarajan, D. (2017). *ISO 9001: Quality Management Systems*. Bangalore: Springer.
25. Novakova, R., Cekanova, K., Paulikova, A. (2016). Integration management system – new of requirements of ISO 9001:2015 and ISO 14001:2015 standards. *Production Engineering Archives*, 4, 35-40.
26. Olkiewicz, M., Wolniak, R., Grebski, E.M., Olkiewicz, A. (2019). Comparative analysis of the impact of the business incubator center on the economic sustainable development of regions in USA and Poland. *Sustainability*, 1, 1-22.
27. Pacana, A. (2014). *Synteza i doskonalenie wdrażania systemów zarządzania jakością zgodnych z ISO 9001 w małych i średnich organizacjach*. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej.
28. Pacana, A., Gazda, A., Bednárová, L. (2014). The impact of quality information on innovatory environment of the public administration. *International Journal of Interdisciplinarity in Theory and Practice*, 4, 25-26.
29. Pacana, A., Ingaldi, M., Czajkowska, A. (2017). *Projektowanie i wdrażanie sformalizowanych systemów zarządzania*. Rzeszów: Wydawnictwo Politechniki Rzeszowskiej.
30. Pacana, A., Lew, G., Kulpa, W. (2017). Rating the quality of implementation of environmental management systems. *Journal of Business & Retail Management Research*, 11(2), 165-169.
31. Pacana, A., Stadnicka, D. (2006). *Wdrażanie i audytowanie systemów zarządzania jakością zgodnych z normą ISO 9001:2000*. Rzeszów: Oficyna Wydawnicza Politechniki Rzeszowskiej.
32. Pacana, A., Stadnicka, D. (2017). *Nowoczesne systemy zarządzania jakością zgodne z ISO 9001:2015*. Rzeszów: Wydawnictwo Politechniki Rzeszowskiej.
33. Philips, A.W. (2015). *ISO 9001:2015. Internal audits made easy. Tools, techniques and Step-by-Step Guidelines for Successful Internal Audit*. Milwaukee: ASQ.
34. Poksińska, P., Dahlgaard, J.J., Marc, A. (2002). The state of ISO 9000 certification. A study of Swedish organizations. *The TQM Magazine*, 5, 297-305.
35. Purushothama, B. (2015). *Implementing ISO 9001:2015*. New Delhi: Woodhead Publishing India.
36. Stawierska, E., Szwajca, D., Matusiek, M., Wolniak, R. (2020). *Wdrażanie rozwiązań przemysłu 4.0 w wybranych funkcjonalnych obszarach zarządzania przedsiębiorstw branży motoryzacyjnej: próba diagnozy*. Warszawa: CeDeWu.
37. Sułkowski, M., Wolniak, R. (2016). Przegląd stosowanych metod oceny skuteczności i efektywności organizacji zorientowanych na ciągłe doskonalenie. Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 67, 63-74.
38. Sułkowski, M., Wolniak, R. (2018). Poziom wdrożenia instrumentów zarządzania jakością w przedsiębiorstwach branży obróbki metali. Częstochowa: Oficyna Wydawnicza Stowarzyszenia Menedżerów Produkcji i Jakości.
39. Szczucka-Lasota, B., Wolniak, R. (2018). Control plan and research supply as a tool in the process of decision making. Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacja i Zarządzanie, 115, 439-447.
40. Szkiel, A. (2016). Orientacja na klienta w wymaganiach normy ISO 9001:2015. Marketing i Zarządzanie, 3, 83-93.
41. Vogt, K. (2010). *Human as an important factor in process production control*. 7th international BAAAM Baltic Conference.
42. Wolniak, R., Sułkowski, M. (2015). Motywy wdrażanie certyfikowanych Systemów Zarządzania Jakością. Problemy Jakości, 9, 4-9.
43. Wolniak, R., Skotnicka-Zasadzień, B. (2014). The use of value stream mapping to introduction of organizational innovation in industry. Metallurgija, 53(4), 709-713.
44. Wolniak, R. (2011). Parametryzacja kryteriów oceny poziomu dojrzałości systemu zarządzania jakością. Gliwice: Wydawnictwo Politechniki Śląskiej.
45. Wolniak, R. (2013). A typology of organizational cultures in terms of improvement of the quality management. Manager, 17(1), 7-21.
46. Wolniak, R. (2013). Normalizacja zarządzania jakością a wymiary kulturowe kraju. Problemy Jakości, 9, 19-25.
47. Wolniak, R. (2013). Projakościowa typologia kultur organizacyjnych. Przegląd Organizacji, 3, 13-17.
48. Wolniak, R. (2013). W kierunku ISO 9001:2015. Problemy Jakości, 2, 10-14.
49. Wolniak, R. (2014). Korzyści doskonalenia systemów zarządzania jakością opartych o wymagania normy ISO 9001:2009. Problemy Jakości, 3, 20-25.
50. Wolniak, R. (2016). Kulturowe aspekty zarządzania jakością. Etyka biznesu i zrównoważony rozwój. Interdyscyplinarne studia teoretyczno-empiryczne, 1, 109-122.
51. Wolniak, R. (2016). *Metoda QFD w zarządzaniu jakością*. Teoria i praktyka. Gliwice: Wydawnictwo Politechniki Śląskiej.
52. Wolniak, R. (2017). Analiza relacji pomiędzy wskaźnikiem innowacyjności a nasyceniem kraju certyfikatami ISO 9001, ISO 14001 oraz ISO/TS 16949. Kwartalnik Organizacja i Kierowanie, 2, 139-150.
53. Wolniak, R. (2017). Analiza wskaźników nasycenia certyfikatami ISO 9001, ISO 14001 oraz ISO/TS 16949 oraz zależności pomiędzy nimi. Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie, 108, 421-430.
54. Wolniak, R. (2017). The Design Thinking method and its stages. Systemy Wspomagania Inżynierii Produkcji, 6, 247-255.
55. Wolniak, R. (2017). The use of constraint theory to improve organization of work. 4th International Multidisciplinary Scientific Conference on Social Sciences and Arts. SGEM 2017, 24-30 August 2017, Albena, Bulgaria. Conference proceedings. Book 1, Modern science. Vol. 5, Business and management. Sofia: STEF92 Technology, 1093-1100.
56. Wolniak, R. (2019). Context of the organization in ISO 9001:2015. Silesian University of Technology Scientific Papers. Organization and Management Series, 133, 121-136.
57. Wolniak, R. (2019). Downtime in the automotive industry production process – cause analysis. Quality, Innovation, Prosperity, 2, 101-118.
58. Wolniak, R. (2019). Leadership in ISO 9001:2015. Silesian University of Technology Scientific Papers. Organization and Management Series, 133, 137-150.
59. Wolniak, R. (2019). Support in ISO 9001:2015. Silesian University of Technology Scientific Papers. Organization and Management Series, 137, 247-261.
60. Wolniak, R. (2019). The level of maturity of quality management systems in Poland-results of empirical research. Sustainability, 15, 1-17.
61. Wolniak, R. (2020). Design in ISO 9001:2015. Silesian University of Technology Scientific Papers. Organization and Management Series, 148, 769-781.
62. Wolniak, R. (2020). Operations in ISO 9001:2015. Silesian University of Technology Scientific Papers. Organization and Management Series, 148, 783-794.
63. Wolniak, R. (2020). Quantitative relations between the implementation of industry management systems in European Union countries. Silesian University of Technology Scientific Papers. Organization and Management Series, 142, 33-44.
64. Wolniak, R., Sułkowski, M. (2015). Rozpowszechnienie stosowania Systemów Zarządzania Jakością w Europie na świecie – lata 2010-2012. Problemy Jakości, 5, 29-34.
65. Wolniak, R., Grebski, M.E., Skotnicka-Zasadzień, B. (2019). Comparative analysis of the level of satisfaction with the services received at the business incubators (Hazleton, PA, USA and Gliwice, Poland). Sustainability, 10, 1-22.
66. Wolniak, R., Hąbek, P. (2015). Quality management and corporate social responsibility. Systemy Wspomagania w Inżynierii Produkcji, 1, 139-149.
67. Wolniak, R., Skotnicka, B. (2011).: Metody i narzędzia zarządzania jakością – Teoria i praktyka, cz. 1. Gliwice: Wydawnictwo Naukowe Politechniki Śląskiej.
68. Wolniak, R., Skotnicka-Zasadzień, B. (2008). Wybrane metody badania satysfakcji klienta i oceny dostawców w organizacjach. Gliwice: Wydawnictwo Politechniki Śląskiej.
69. Wolniak, R., Skotnicka-Zasadzień, B. (2010). Zarządzanie jakością dla inżynierów. Gliwice: Wydawnictwo Politechniki Śląskiej.
70. Wolniak, R., Skotnicka-Zasadzień, B., Zasadzień, M. (2019). Problems of the functioning of e-administration in the Silesian region of Poland from the perspective of a person with disabilities. *Transylvanian Review of Public Administration, 57E*, 137-155.

71. Wolniak, R., Sułkowski, M. (2016). The reasons for the implementation of quality management systems in organizations. *Zeszyty Naukowe Politechniki Śląskiej. Seria Organizacji i Zarządzanie*, 92, 443-455.

72. Ząbek, J. (2016). ISO 9001:2015. Wybrane problemy zarządzania z perspektywy nowej normy. *Ekonomika i Organizacja Przedsiębiorstwa*, 2, 14-25.

73. Żemigała, M. (2017). Tendencje w badaniach nad normą ISO 9001. *Problemy Jakości*, 3, 2-9.