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Article

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Economic and Environmental Studies (E&ES)

Provided in Cooperation with:

Opole University

Suggested Citation: Gębczyńska, Alicja; Wolniak, Radosław (2019) : The impact of quality management systems on the effects of the process approach implementation, Economic and Environmental Studies (E&ES), ISSN 2081-8319, Opole University, Faculty of Economics, Opole, Vol. 18, Iss. 4, pp. 1235-1260, <https://doi.org/10.25167/ees.2018.48.4>

This Version is available at:

<https://hdl.handle.net/10419/284672>

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The impact of quality management systems on the effects of the process approach implementation

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Abstract: The article provides a discussion on results of extensive empirical research conducted in 2016 on a sample of 495 local government authorities, using the CAWI questionnaire technique supported by the CATI survey. The results thus obtained were verified in statistical terms and then critically analysed in a manner enabling final conclusions to be drawn. The purpose of the article is to analyse the impact of the quality management system (QMS) on the advantages and disadvantages identified as those which arise from the process approach implementation in public administration. Therefore the following principal research question may be posed: Is there a positive impact of the QMS on how well the process approach functions and to what extent does it affect the benefits and barriers involved in the process approach implementation?

It has been observed that implementation of the quality system does not automatically guarantee any external benefits resulting from the process orientation. The research results imply that efficiency of the quality management systems implemented in the local government authorities subject to the survey is questionable, particularly in terms of their improvement.

Keywords: process approach, public administration, benefits and barriers of the process approach

JEL codes: D73; H55; H83

DOI: <https://doi.org/10.25167/ees.2018.48.4>

1. Introduction

The process approach concept is one of the major principles of quality management, and therefore its application is indispensable while implementing certified quality management

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systems (QMS). The process approach idea may function equally well in organisations which have not deployed the QMS. Consequently, it would be interesting to investigate whether the QMS can exert a positive impact on how well the process approach functions as well as on the extent to which it affects the benefits and barriers involved in the process approach implementation. The purpose of the article is to analyze the impact of the quality management system (QMS) advantages and disadvantages which arise from the process approach implementation in public administration. Therefore the following principal research question may be posed: is there a positive impact of the QMS on how well the process approach functions within the organization and to what extent does it affect the benefits and barriers involved in the process approach implementation?

2. Characteristics of quality management systems (QMS)

The term *process approach* first appeared in the requirements laid down in the ISO 9001 standard in the amendment of 2000. Implementation of the process concept was intended to ensure improved functioning of organisations through concentration on fulfilment of customer needs and their consistent satisfaction at individual stages of product development. The primary goal behind introducing this approach was increased customer satisfaction. “Implementation of the process approach in quality management was a consequence of having established that a quality management system was in fact a set of elements and relationships emerging between processes, where the former determine the product quality in pre-production, production and post-production phases” (Kliciniński, 2009).

Introducing the process approach into the requirements of the ISO 9001 standard was particularly important for changing the previous perspective of how organisations function (Haber and Brouer, 2017). “The transfer from structural thinking towards process-based thinking gave birth to a new philosophy of management, the very essence of which is susceptibility to changes and departure from linear perception of an organisation in favour of the regularity of flow” (Bitkowska, 2009; Hawrysz and Hys, 2013).

Not only did the consecutive amendments of 2009 and 2005 not remove the process concept from quality management systems, but they in fact strengthened its significance, thus confirming its efficiency. A process was recognised as the foundation upon which the QMS was

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to be built, stressing the necessity of appropriate interpretation of the process approach understood as systematic defining and managing of processes and connections between them, so that one could achieve the intended objectives in line with the quality policy and strategic targets of the organisation (EN ISO 9001:2015). Implementation of the process approach in an organisation should follow the PDCA cycle, where the relevant risks and opportunities are taken into consideration. The process concept currently plays an important role in quality management systems, since it provides grounds for analysis of process flows, identification of nonconformities and continuous improvement.

In accordance with the ISO 9001 standard, the process approach is a concept which invokes identification and interactions between processes, yet the efficiency of its application depends on process management capabilities. Identification of processes is prerequisite, but it does not suffice to manage processes in an efficient manner. Process management focuses on “achieving goals of the organisation through improvement, management and control of processes” (Jeston and Nelis, 2008).

Enterprises which face up to the challenge of the quality management system implementation typically finalise this process by applying for ISO 9001 certification. Therefore, one may claim that the number of certificates issued reflects the level of interest in quality management systems. Table 1 provides a summary of data concerning the number of ISO 9001 certificates granted in Europe, in Poland and in public administration worldwide.

Table 1. Number of ISO 9001 certificates granted in Europe, in Poland and in public administration worldwide

	2009	2010	2011	2012	2013	2014	2015
Europe	500.286	532.896	457.654	466.929	458.814	453.628	439.477
%	6.5%	6.5%	-14%	2%	-2%	-1%	-3%
Poland	12.707	12.195	10.984	10.105	10.527	9.574	10.681
%	-4%	-4%	- 10%	-8%-	4%	-9 %	11.5%
Public administration worldwide	7.938	5.399	6.468	7.428	8.039	7.732	6.580
%	-32%	-32%	20%	14%	8%	-4%	-15%

Source: ISO Survey, 2017.

The data collated in Table 1 are based on results of the ISO Survey of Certifications to Management System Standards – Full Results prepared by www.iso.org. The statistics used for purposes of this publication concern the popularity of the QMS conforming with the requirements of ISO 9001 in Europe, in Poland as well as in public administration analysed globally over the years 2009-2015. The situation in Poland has recently been rather optimistic, and even though one could observe considerable slumps in terms of the number of certificates issued in the years 2011 and 2014, the negative trend was discontinued in 2015, thus improving the results reported in comparison with previous periods. What may be alarming is the fact that European statistics imply an overall decline in the interest in certified QMS which corresponded to ca. 3% of the total number of ISO 9001 certificates granted in 2015 compared to the preceding year. The situation of public administration perceived globally is analogous, since one could even observe a larger setback (-15%) in the number of certificates granted against the previous reporting period.

The identified unfavourable trends showing the decline in the number of ISO 9001 certificates granted in Europe, in Poland and in public administration worldwide imply that the interest in the QMS has been decreasing. Hence the question which phenomena affect the current state of matters. Results of the studies addressed in this article may shed some light on the problem and make it possible to answer the foregoing question.

3. Specificity of the research subject – POLISH PUBLIC ADMINISTRATION

On account of the necessity to seek more efficient ways to operate, the public administration consequently became interested in the solutions applied in business, such as informatisation or implementation of quality management systems. The use of business practices and methodologies in public administration was characteristic of the New Public Management (NPM). The disappointment of NPM directed the public sector towards the Neo-Weberian State (Pollitt and Bouckaert, 2017). The Pollitt and Bouckaert model consists of two groups of postulates - "old" postulates derived from the Weberian model and "new" ones drawing on the output of new public management (Sześciło 2014). The process approach falls under the NPM trend, as the former enables synchronisation of the emerging flows in terms of materials, documentation and information, which proves particularly important for the public administration that still struggles

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with issues of bureaucracy and excessive formalisation (Koźmiński, 2016). The specificity of public administration opens a wide spectrum of opportunities for standardisation of selected processes and for managing them in line with a pre-assumed operating strategy. It would also be interesting to investigate to what extent the public administration succeeds in utilising potential effects of the process concept in practice. The foregoing requires detailed analysis of the opinion about the process approach implementation lingering on among representatives of public administration.

The Polish public administration comprises different agencies of government administration (principal, central, provincial, district, combined and non-combined), self-government administration (territorial, professional, economic) and other state administration bodies (e.g. National Labour Inspectorate, National Broadcasting Council etc.) (Słownik, 2008).

In line with the three-level administrative division of the Polish state, the local government units (Wytrązek http://pracownik.kul.pl/files/11992/public/Podstawowe_pojecia_TOZ_w_org_publ.pdf) are provinces (Polish singular *województwo*), administrative districts (Polish singular *powiat*) and communes (Polish singular *gmina*). As of 1 January 2016 (Central Statistical Office, *Powierzchnia i ludność w przekroju terytorialnym w 2016 r.*), Poland is divided into 16 provinces, 314 districts and 2,478 communes (including 303 urban communes (municipalities) out of which 66 are towns with *powiat* rights, i.e. communes with the status of a municipality which, at the same time, perform the duties of a *powiat*, also referred to as *powiat grodzki*, 616 urban-rural communes and 1,559 rural communes.

4. Literature review regarding the effects of the process approach implementation in public administration

Based on the literature review (Szumowski, 2009; Kruczkowski and Bildziukiewicz, 2013; Olesiński, 2016; Corradini et al., 2011; Tregear and Jenkins, 2007; Ruževičius et al., 2012; Wieczorkowski, 2015; Potemska, 2015; Flieger, 2016; Corrigan, 2009; Knežová et al., 2016; Morgan, 2013; Niehaves et al., 2013; Gullidge and Sommer, 2002), the potential benefits and barriers involved in the implementation of the process approach and process-oriented management in public administration have been identified (Table 2). Having analysed and

verified them, one could establish the main strengths and barriers of the process concept, being the subject of the research.

Table 2. Potential benefits and barriers involved in implementation of the process approach in the public administratio

Benefits	Barriers
<ul style="list-style-type: none"> • Internal benefits: C1.1. Standardisation of the organisation's operations C1.2. Orienting the organisation towards customer satisfaction C1.3. Identification of components in need of streamlining C1.4. Capacity to assess and influence the organisation's efficiency C1.5. Increased involvement of employees by extending their influence on the results attained C1.6. Capacity to reduce operating costs C1.7. Increased flexibility of operations C1.8. Increased traceability of changes C1.9. Improved allocation and utilisation of resources C1.10. Ensuring resources required to manage changes in a dynamic environment C1.11. Ensuring comprehensive perception of the business model C1.12. Reduced error rate C1.13. Understanding how input data can become a value for the client C1.14. Improvements to the measuring system C1.15. Improved financials C1.16. Improved coherence of management or increased speed of response to changes C1.17. Creating new services or re-designing the existing ones C1.18. Enhanced management of information resources C1.19. Risk management C1.20. Simplified implementation of the quality management system. • External benefits: C2.01. Adaptation to changes in the legal framework C2.02. Adaptation to requirements of superior 	<ul style="list-style-type: none"> B1. Lack of support from the management, B2. Poor communication, B3. Inappropriate management style, B4. Lack of funds, B5. Lack of time for implementation, B6. Poor IT infrastructure, B7. Lack of unambiguous method for the process approach implementation, B8. Resistance to changes among employees, B9. Lack of motivation among employees, B10. Misunderstandings between employees, B11. Lack of theoretical foundations, B12. Inappropriate corporate culture, B13. Dispersed budgets, B14. Process management considered equivalent to IT solutions exclusively.

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institutions C2.03. Improved collaboration with suppliers C2.04. Improved collaboration with clients C2.05. Increased trust of external entities towards the public office C2.06. Increased reliability C2.07. Positive image created C2.08. Improved external communication	
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Source: based on Gębczyńska, Wolniak, 2018: 39-42

5. Research methodology

The research results discussed in the paper form a part of a larger project, one of the areas of which was identification of benefits and barriers involved in implementation of the process approach in the Polish public administration, especially in the context of whether or not the given organisation had deployed an ISO 9001 compliant quality management system. The relevant studies were conducted in September 2016 in local government offices. Based on the administrative division of the country, the survey covered marshal's offices, district governor's offices, urban commune offices, urban-rural commune offices and rural commune offices. The respondents selected for the survey were local administration officers responsible for quality or process management as they had the suitable competence and knowledge in the field of the research.

The information on the number of local government authorities operating in Poland (2,808 entities) was used to calculate the relevant population based on which, following the principles of statistics, the minimum sample size was estimated at 495 (confidence level = 0.95, maximum error = 4%). It was assumed that the respondents would be selected by stratified sampling, thus ensuring representativeness of the population. In each strata of the population we use random sampling method. By application of the CAWI technique supported by the CATI method, a quantitative questionnaire survey was conducted. The CAWI (Computer Assisted Web Interviews) method is all about fulfilling single-handedly an online questionnaire by the respondents. This method is supported by a computer program that saves all responses. This solution makes it possible to examine a very large number of respondents in a relatively short time. CATI (Computer Assisted Telephone Interview) is a method used to conduct telephone

interviews using the Internet. Respondents are asked to complete an electronic questionnaire and also in that case the replies are automatically recorded in the database. CATI represents a more personal approach as it is based on a telephone conversation and therefore allows attaining reliable and upright test results. This method was used in all cases where the CAWI proved to be ineffective and the respondents did not send back a completed questionnaire. The adopted compilation of methods led to a successful examination of the estimated sample. CAWI and CATI were developed using CATISYSTEM's modern research panel. The survey questionnaire, which was developed for the purpose of the study, was built on the basis of closed questions in which respondents confirmed or denied the occurrence of the researched phenomenon. For some questions, the respondents indicated one possible answer variant, best characterizing their opinions. Most of the questions were evaluated on a scale of 0-1. In the case of 'zero', the respondents did not confirm the occurrence of the investigated event, indicating 'one' was equivalent to acceptance.

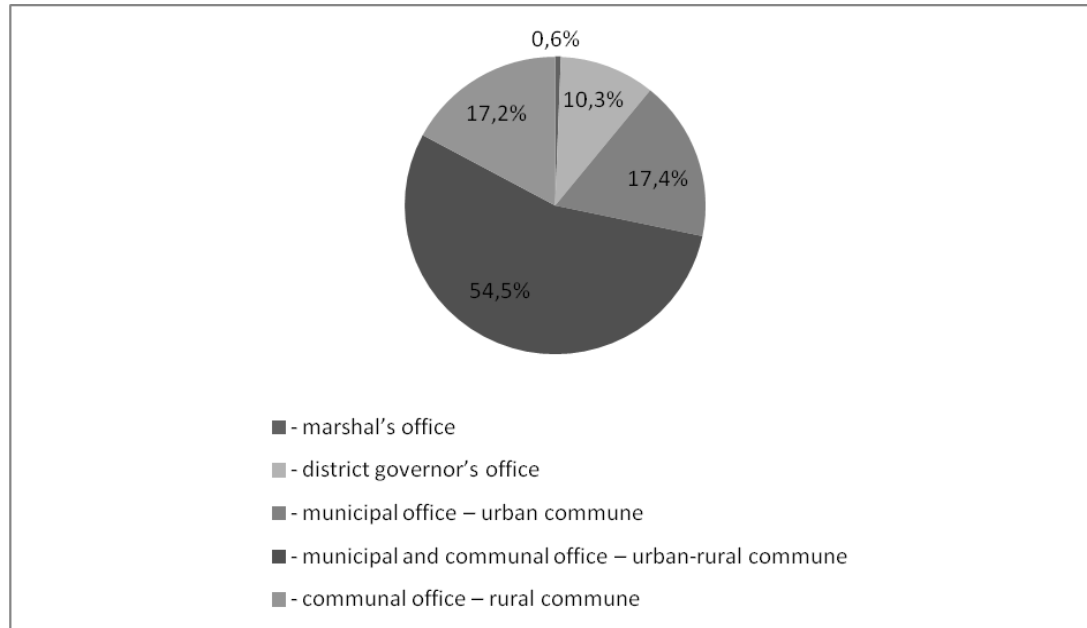
The research material acquired was statistically verified, and the results thus obtained, provided grounds upon which conclusions were formulated. The purpose of the survey was to investigate the impact of the QMS on the identified advantages and disadvantages of implementation of the process approach in the public administration.

5.1 Characteristics of the respondents

More than a half of the local government authorities (LGA) (54.5%) which took part in the survey were communal offices of rural communes. The survey implies that municipal offices based in urban communes and municipal-communal offices in urban-rural communes represented a similar share (i.e. 17.4% and 17.2%, respectively). The least numerous agencies of public administration subject to the survey were marshal's offices (0.6%) and district governor's offices (10.3%). The share of individual local administration offices corresponded to their quantities in the survey population.

Figure 1. Office type

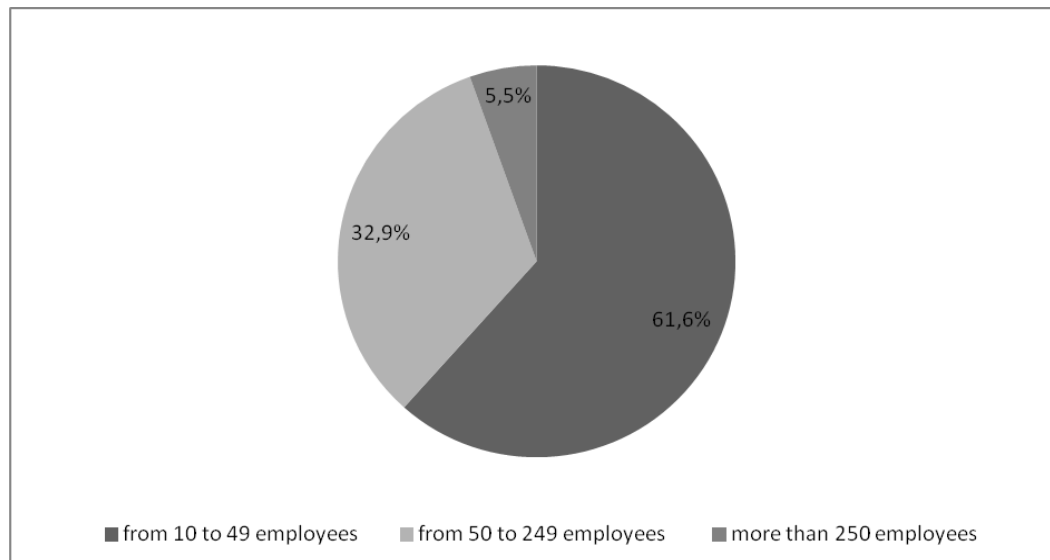
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Source: Author's own elaboration.

Most of the organisations surveyed were offices of low headcount (61.6%), employing from 10 to 49 persons. The least numerous ones were offices with more than 249 employees (5.5%).

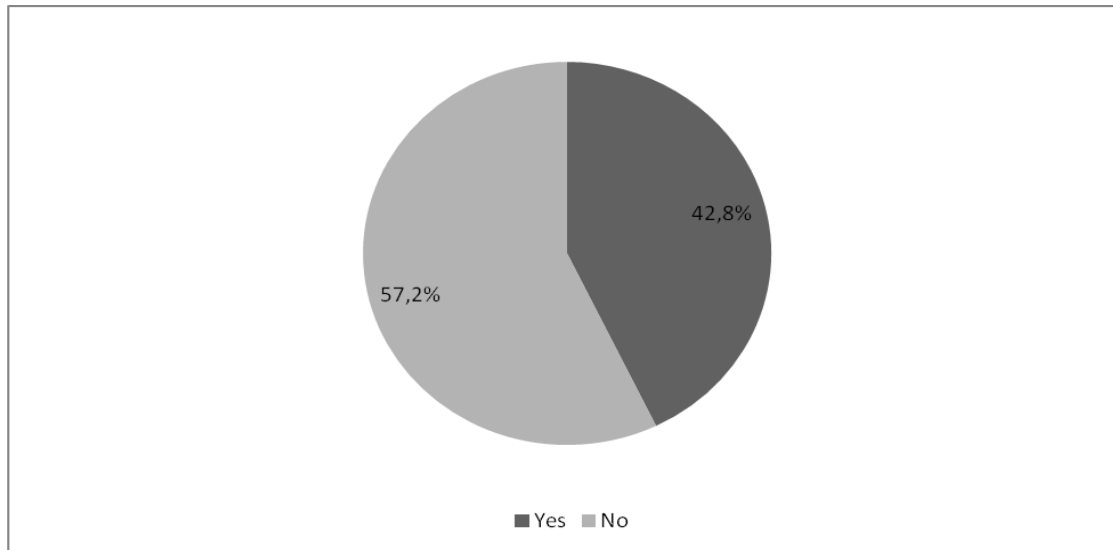
Figure 2. Office size



Source: Author's own elaboration.

In order to compare the results and establish to what extent the QMS affected the benefits and barriers involved in the process approach implementation in the Polish public administration, the survey intentionally covered offices which had deployed the QMS as well as those which lacked one.

Figure 3. Information on whether the quality management system has been implemented

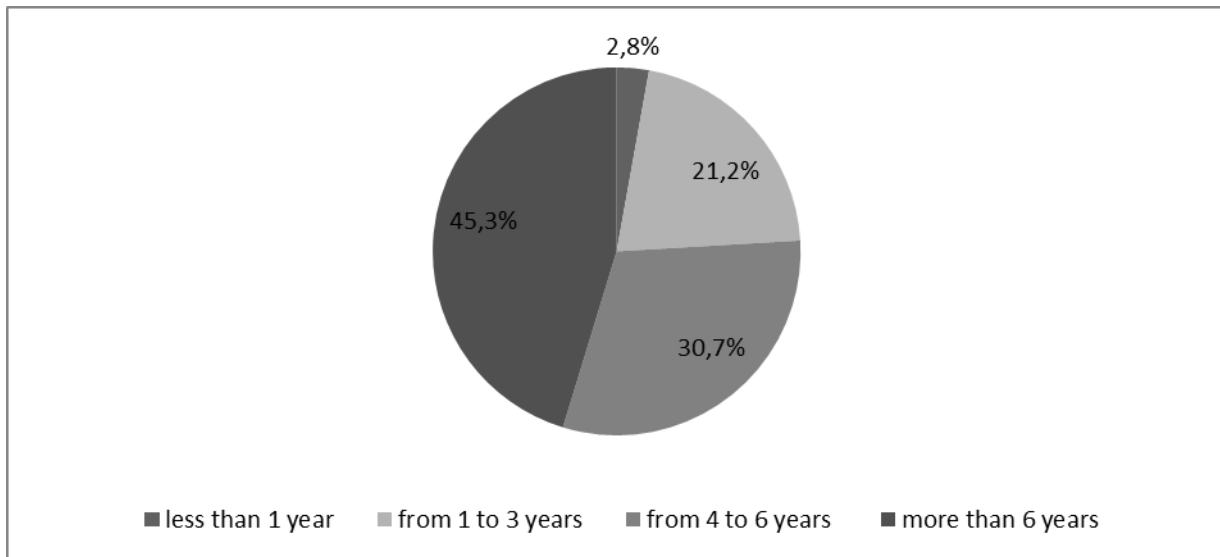


Source: Author's own elaboration.

Most of the respondents (76.0%) representing offices with the QMS in place declared that their system had been functioning for at least 4 years. The least frequent reply (2.8%) was that they had been using a quality management system for less than 1 year. Based on such grounds, one may conclude that most of the organisations surveyed, where the QMS had been deployed, were considerably experienced in implementing and maintaining the quality management system as well as in applying the process approach.

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Figure 4. Duration of the quality management system use



Source: Author's own elaboration.

The analysis was carried out in the scope of benefits and barriers accompanying the implementation of the process approach identified on the basis of the literature review, contained in table 2. Barriers were supplemented by element B.15. None of the foregoing.

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The following four hypotheses (H1-H4) were formulated for the purposes of the research:

- H1. There is the statistically significant relationship between the benefits resulting from implementation of the process-oriented approach in the Polish public administration and deployed the QMS in the particular office.
- H2. There is the statistically significant relationship between the benefits resulting from implementation of the process-oriented approach in the Polish public administration and the time for which the office has applied the QMS.
- H3. There is the statistically significant relationship between the barriers involved in implementation of the process-oriented approach in the Polish public administration and deployment of the QMS in particular office.
- H4. There is the statistically significant relationship between the barriers involved in implementation of the process-oriented approach in the Polish public administration and the time for which the office has applied the QMS.

7. Research results

The initial problem tackled in the survey was to determine the extent to which the internal benefits which were studied occurred as a consequence of whether or not the given office had deployed the quality management system (Table 3). In order to investigate the relation between individual variables, the non-parametric Mann-Whitney U test was applied. Using this test at the statistical significance level of $\alpha=0.05$ made it possible to establish that statistically significant differences occurred for two of the populations studied, i.e. understanding how input data can become a value for the client and improvement of the measuring system.

With regard to the understanding how input data can become a value for the client, the benefit occurred in 55.7% of the offices with the quality management system deployed, and only in 42.4% of those which had no such system at their disposal. The benefit corresponding to the measuring system improvements was reported by 58% of the offices having the quality management system in place and by 47% of those public administration offices where the system had not been implemented.

Table 3. Relations between internal benefits resulting from the process approach implementation and the fact of having deployed the quality management system

Internal benefits	Quality management system deployed n=212	Quality management system not deployed n=283	Probability
C1.01. Standardisation of the organisation's operations	73.6%	67.5%	0.321
C1.02. Orienting the organisation towards customer satisfaction	82.5%	77.0%	0.423
C1.03. Identification of components in need of streamlining	84.0%	78.1%	0.243
C1.04. Capacity to assess and influence the organisation's efficiency	77.4%	74.9%	0.563
C1.05. Increased involvement of employees by extending their influence on the results attained	65.1%	68.2%	0.432
C1.06. Capacity to reduce operating costs	55.7%	57.6%	0.493
C1.07. Increased flexibility of operations	49.5%	46.3%	0.485

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C1.08. Increased traceability of changes	64.6%	59.4%	0.324
C1.09. Improved allocation and utilisation of resources	64.6%	56.9%	0.453
C1.10. Ensuring resources required to manage changes in a dynamic environment	34.9%	40.3%	0.192
C1.11. Ensuring comprehensive perception of the business model	28.8%	27.6%	0.438
C1.12. Reduced error rate	72.6%	68.6%	0.423
C1.13. Understanding how input data can become a value for the client	55.7%	42.4%	0.038
C1.14. Improvements to the measuring system	58.0%	47.0%	0.035
C1.15. Improved financials	34.9%	41.7%	0.129
C1.16. Improved coherence of management or increased speed of response to changes	72.2%	67.5%	0.198
C1.17. Creating new services or re-designing the existing ones	42.5%	40.6%	0.512
C1.18. Enhanced management of information resources	56.1%	58.7%	0.432
C1.19. Risk management	72.2%	65.0%	0.348
C1.20. Simplified implementation of the quality management system	62.7%	54.1%	0.429

Source: Author's own elaboration.

The foregoing results imply that the fact of having deployed the quality management system by the given public administration office is positively correlated with whether or not the internal benefits of process orientation occur. An organisation with the quality management system in place has typically put all the documentation in order, which then translates into the simplified system development and makes it easier to introduce changes and thoroughly understand the role of customer requirements in the system. Based on such grounds, one can conclude that the fact of having a quality management system in place at the given office is indeed a factor which makes it easier to implement the process-oriented approach. It is easier for organisations with the quality management system in place to ensure that customers' requirements are understood and fulfilled, which is reflected in the level of their satisfaction. The foregoing results from a number of aspects, including the fact that the ISO 9001 standard imposes an obligation of continuous customer satisfaction monitoring upon organisations.

Owing to the test solution applied, one may also establish that, at the aforementioned significance level, there is no statistically significant relation between external benefits drawn by the organisation from the process approach implementation and the fact of having deployed the quality management system (Table 4). The foregoing implies that whether or not a public administration office has the quality management system in place exerts no statistically significant effect on what external benefits of the process approach implementation will occur. Therefore, in this case, one cannot speak of any significant marketing effect on the public administration offices surveyed which have deployed the quality management system.

Table 4. Relations between external benefits resulting from the process approach implementation and the fact of having deployed the quality management system

External benefits	Quality management system deployed n=212	Quality management system not deployed n=283	Probability
C2.1. Adaptation to changes in the legal framework	64.6%	63.3%	0.423
C2.2. Adaptation to requirements of superior institutions	50.9%	56.2%	0.109
C2.3. Improved collaboration with suppliers	43.4%	37.8%	0.113
C2.4. Improved collaboration with clients	86.8%	82.7%	0.354
C2.5. Increased trust of external entities towards the public office	86.3%	86.6%	0.598
C2.6. Increased reliability	73.1%	67.5%	0.137
C2.7. Positive image created	84.4%	77.4%	0.198
C2.8. Improved external communication	74.5%	72.4%	0.175

Source: Author's own elaboration.

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The survey results discussed in the paper have partially confirmed hypothesis H1 concerning the relation between the benefits resulting from implementation of the process-oriented approach in the Polish public administration and the fact of having deployed the quality management system. It has been found that the internal benefits of the process-oriented approach implementation in the public administration depend on whether or not the given entity has deployed a quality management system certified for compliance with the requirements of the ISO 9001 standard, yet the same relation does not apply to external benefits. Another problem the survey was intended to examine was the relation between the benefits resulting from implementation of the process-oriented approach in the Polish public administration and the period of time for which the given public office had been using the quality management system. This relation has been summarised with reference to internal and external benefits in Table 5 and Table 6, respectively. It should be noted that only organisations which had deployed the quality management system were subject to the analysis.

In order to investigate the relation between two populations, the non-parametric Kruskal-Wallis ANOVA test was applied on statistical significance of $\alpha=0.05$. Having used this testing method, one could successfully determine that there are no statistically significant relations between any of the variables tested, irrespective of whether internal or external benefits following the process orientation of Polish public administration bodies are taken into consideration.

The survey implies that, insofar as the very fact of having a fully operational quality management system in place has an effect on the internal benefits resulting from the process orientation, no such impact is exerted by the time for which the system has been in use. What matters most is whether the system works properly, whereas how long ago it was implemented is of secondary importance. A poorly functioning quality management system does not have a positive influence on the benefits attained, regardless of the time when it was deployed in the given organisation. On the other hand, a properly functioning system should evolve and occasionally guarantee additional benefits stemming from its evolution. Consequently, the survey results imply how significantly limited the analysed quality systems are in the scope of their adaptation to the changes taking place in the organisation. The fact that hypothesis H2 has not been confirmed also suggests low flexibility of the systems, which may result from ossification

of the solutions once implemented as well as from having neglected their continuous improvement.

Based on the research results obtained, one may disprove the hypothesis H2 which assumes that the period of QMS implementation is not correlated with the benefits resulting from the implementation of process orientation in the Polish public administration.

Table 5. Relations between internal benefits resulting from the process approach implementation and the time for which the office has been using the quality management system

Internal benefits	Less than 1 year n=6	1-3 years n=45	4-6 years n=65	More than 6 years n=96	Probability
C1.01. Standardisation of the organisation's operations	83.3%	73.3%	75.4%	67.5%	0.245
C1.02. Orienting the organisation towards customer satisfaction	66.7%	75.6%	89.2%	77.0%	0.342
C1.03. Identification of components in need of streamlining	83.3%	82.2%	81.5%	78.1%	0.245
C1.04. Capacity to assess and influence the organisation's efficiency	66.7%	75.6%	83.1%	74.9%	0.621
C1.05. Increased involvement of employees by extending their influence on the results attained	66.7%	60.0%	66.2%	68.2%	0.243
C1.06. Capacity to reduce operating costs	33.3%	66.7%	47.7%	57.6%	0.247
C1.07. Increased flexibility of operations	50.0%	51.1%	56.9%	46.3%	0.376
C1.08. Increased traceability of changes	66.7%	62.2%	64.6%	59.4%	0.385
C1.09. Improved allocation and utilisation of resources	83.3%	60.0%	63.1%	56.9%	0.374
C1.10. Ensuring resources required to manage changes in a dynamic environment	33.3%	42.2%	30.8%	40.3%	0.245
C1.11. Ensuring comprehensive perception of the business model	33.3%	26.7%	27.7%	27.6%	0.412
C1.12. Reduced error rate	66.7%	73.3%	73.8%	68.6%	0.196
C1.13. Understanding how	50.0%	51.1%	56.9%	42.4%	0.287

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input data can become a value for the client					
C1.14. Improvements to the measuring system	66.7%	55.6%	55.4%	47.0%	0.325
C1.15. Improved financials	33.3%	48.9%	29.2%	41.7%	0.419
C1.16. Improved coherence of management or increased speed of response to changes	66.7%	71.1%	70.8%	67.5%	0.487
C1.17. Creating new services or re-designing the existing ones	66.7%	42.2%	52.3%	40.6%	0.462
C1.18. Enhanced management of information resources	50.0%	60.0%	58.5%	58.7%	0.465
C1.19. Risk management	50.0%	66.7%	73.8%	65.0%	0.345
C1.20. Simplified implementation of the quality management system	50.0%	60.0%	66.2%	54.1%	0.378

Source: Author's own elaboration.

Table 6. Relations between external benefits resulting from the process approach implementation and the time for which the office has been using the quality management system

External benefits	Less than 1 year n=6	1-3 years n=45	4-6 years n=65	More than 6 years n=96	Probability
C2.1. Adaptation to changes in the legal framework	33.3%	73.3%	61.5%	64.6%	0.245
C2.2. Adaptation to requirements of superior institutions	33.3%	51.1%	53.8%	50.0%	0.456
C2.3. Improved collaboration with suppliers	33.3%	44.4%	33.8%	50.0%	0.478
C2.4. Improved collaboration with clients	83.3%	86.7%	84.6%	88.5%	0.319
C2.5. Increased trust of external entities towards the public office	83.3%	82.2%	87.7%	87.5%	0.289
C2.6. Increased reliability	83.3%	73.3%	76.9%	69.8%	0.378

C2.7. Positive image created	83.3%	77.8%	83.1%	88.5%	0.498
C2.8. Improved external communication	100.0%	71.1%	70.8%	77.1%	0.347

Source: Author's own elaboration.

The third research hypothesis concerned verification of the relation between the identified barriers emerging while the process approach was being implemented in an organisation and the fact whether the public office had deployed the quality management system (Table 7). Based on the non-parametric Pearson test, the survey results have implied that statistically significant differences for $\alpha=0.05$ occur for two of the variables studied, i.e. absence of support from the management and absence of motivation among employees.

The barrier of the lacking managers' support occurred in 65.6% of the offices with the quality management system deployed, and only in 52.7% of those which had no such system in disposal. The barrier connected with the absence of motivation among employees was found in 68.4% of the offices having the quality management system and in 55.5% of those public administration offices where the system had not been implemented.

Table 7. QMS deployed or its absence versus barriers potentially involved in the process approach implementation in organisations

Barriers	Quality management system deployed n=212	Quality management system not deployed n=283	Probability
B.1. Lack of support from the management	65.6%	52.7%	0.042
B.2. Poor communication	63.2%	59.7%	0.123
B.3. Inadequate management style	57.1%	58.0%	0.245
B.4. Lack of funds	55.2%	63.3%	0.219
B.5. Lack of time for implementation	61.8%	64.3%	0.198
B.6. Poor IT infrastructure	45.3%	48.8%	0.354
B.7. No uniform methodology for the process approach implementation	56.6%	54.4%	0.423
B.8. Resistance to changes among employees	79.2%	73.5%	0.194

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B.9. Lack of motivation among employees	68.4%	55.5%	0.026
B.10. Misunderstandings among employees	42.9%	40.6%	0.145
B.11. Lack of theoretical foundations	43.4%	47.3%	0.198
B.12. Inadequate organisational culture	46.7%	40.3%	0.275
B.13. Distributed budgets	30.2%	30.0%	0.134
B.14. Process management associated with IT solutions only	42.0%	44.5%	0.175
B.15. None of the foregoing	0.9%	0.7%	0.094

Source: Author's own elaboration.

The results suggest that perception of the barriers resulting from the process-oriented approach implementation is connected with whether or not the given public administration office has deployed the quality management system. Managers of organisations with the quality management system in place are more likely to notice the problems of the missing support from the management and absence of motivation among employees which hamper efficient implementation of the process approach. The foregoing conclusions support the thesis that the said obstacles are key elements that limit the process approach implementation. To sum up the above elaboration, one may claim that the actual factors hampering implementation of the process approach primarily include absence of support from the management as well as of motivation among employees. These are the most crucial elements to which special attention should be paid while implementing the process concept, since they were most frequently reported by organisations experienced in implementation of the process-oriented approach.

The survey results also imply that quality management systems do not function properly in the public administration organisations according to the research results. One of the important requirements that organisations are obliged to satisfy as they are implementing the ISO 9001 standard is ensuring sufficient support from the management. Without such support it is far more difficult to meet the requirements of the standard. and one can consequently encounter various obstacles. The fact that organisations which have deployed an ISO 9001 compliant quality management system often report the absence of support from the management suggests that in fact they have failed in meeting one of major requirements of the standard to the full extent. Similarly. the lack of motivation among employees in organisations with the quality management

system in place proves that no adequate incentive schemes have been introduced and that the personnel have not been properly familiarised with the advantages stemming from the system implementation.

The survey has confirmed hypothesis H3 assuming that the implementation of QMS is correlated with the barriers accompanying the implementation of process orientation in the Polish public administration.

The last problem addressed in this publication and examined in the survey was the relation between the barriers involved in implementation of the process-oriented approach in the Polish public administration and the period of time for which the given public office had been using the quality management system. The relevant relations have been summarised in Table 8. The analysis only covered those organisations which had deployed the quality management system.

Table 8. Relations between barriers involved in the process approach implementation and the time for which the office has been using the quality management system

Barriers	Less than 1 year n=6	1-3 years n=45	4-6 years n=65	More than 6 years n=96	Probability
B.1. Lack of support from the management	100.0%	64.4%	60.0%	67.7%	0.234
B.2. Poor communication	66.7%	64.4%	64.6%	61.5%	0.971
B.3. Inadequate management style	66.7%	60.0%	63.1%	51.0%	0.429
B.4. Lack of funds	33.3%	48.9%	66.2%	52.1%	0.144
B.5. Lack of time for implementation	50.0%	55.6%	75.4%	56.3%	0.059
B.6. Poor IT infrastructure	33.3%	46.7%	53.8%	39.6%	0.313
B.7. No uniform methodology for the process approach implementation	50.0%	53.3%	55.4%	59.4%	0.887
B.8. Resistance to changes among employees	83.3%	71.1%	80.0%	82.3%	0.487
B.9. Lack of motivation among employees	66.7%	64.4%	70.8%	68.8%	0.917
B.10.	33.3%	31.1%	49.2%	44.8%	0.264

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Misunderstandings among employees					
B.11. Lack of theoretical foundations	33.3%	46.7%	47.7%	39.6%	0.682
B.12. Inadequate organisational culture	50.0%	40.0%	52.3%	45.8%	0.640
B.13. Distributed budgets	33.3%	28.9%	40.0%	24.0%	0.187
B.14. Process management associated with IT solutions only	33.3%	40.0%	49.2%	38.5%	0.547
B.15. None of the foregoing	0.0%	0.0%	1.5%	1.0%	0.863

Source: Author's own elaboration.

Having applied Kruskal-Wallis test against the data previously acquired, one could establish that there are no statistically significant relations for any of the tested variables involved in implementation of the process-oriented approach in the Polish public administration bodies.

The survey implies that, insofar as the very fact of having a fully operational quality management system in place has is correlated with the barriers encountered while implementing the process approach, no such correlation was observed with the time for which the system has been in use. Therefore the period for which the QMS has been used in the organisation does not remove the barriers encountered while implementing the process approach.

Based on the research results obtained, one may disprove hypothesis H4 which assumes that the period of QMS implementation is correlated with the barriers accompanying the implementation of process orientation in the Polish public administration.

8. Conclusions

A paradigm which has been responsible for a quantum leap observed in managerial sciences over the recent years is that of process-based thinking. Gradually replacing structural thinking with process-based thinking has given birth to a new philosophy of management, the very essence of which is susceptibility to changes and departure from linear perception of an organisation in favour of the regularity of flow (Bitkowska, 2009). The conclusions provided in this publication

result from the attempt to verify the efficiency of the process approach against the benefits and barriers identified to be involved in the process orientation of the Polish public administration.

The results obtained from the survey have partially confirmed hypothesis H1 concerning the relation between the benefits arising from implementation of the process-oriented approach in the Polish public administration and the fact of having deployed a quality management system conforming with the requirements of the ISO 9001 standard. Hypothesis H1 has been confirmed with regard to the internal benefits and it comprised problems related to understanding how input data can become a value for the client as well as to improvement of the measuring system. Unfortunately, it has been found that the external benefits studied do not depend on whether or not the given office has deployed a quality management system. This fact may imply that the function of quality management systems is not connected with the process concept implementation. Hypothesis H3 has been verified to be true. The remaining hypothesis H2 and H4 have been disproved. Consequently, the survey has implied that the benefits (both internal and external) resulting from implementation of the process-oriented approach in the Polish public administration are not correlated with the time for which particular office has had a quality management system in place.

There is also a statistically significant relation between the barriers involved in implementation of the process-oriented approach in the Polish public administration and the very fact of the office having deployed a quality management system. The foregoing relation has been confirmed for two barriers, namely the absence of support from the management and of motivation among employees. It has also been evidenced that the barriers involved in implementation of the process-oriented approach in the Polish public administration are not correlated with the period of time for which the office has had the quality management system in place.

To recapitulate the foregoing elaboration, one may conclude that the public offices which have deployed the quality management system are more often likely to acknowledge the internal benefits of the client value creation and improvement of the measuring system, being consequences of their organisation functioning under a process-oriented system. Public offices with the quality management system in place also confirm that there are specific barriers involved in implementation of the process-oriented approach more frequently.

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What one may observe is that implementation of the quality system does not automatically guarantee that external benefits are successfully drawn from the process orientation, which may imply inefficiency of quality management systems in terms of the information and marketing function they perform, as it is responsible for dissemination of the process approach idea.

Furthermore, no relation has been confirmed between the period of time for which the office has been using the QMS and the benefits resulting from the process-oriented approach implementation, which suggests adaptation and development issues related to quality systems. Following an assessment of the process management maturity, the duration of the period for which the quality system had been applied should have been reflected in the benefits recognised. At the initial stages of the process concept implementation, which corresponded to the QMS application, the discernible effects of rearrangement of the process system should have been the organisation's reorientation towards customer satisfaction accompanied by understanding how input data can create value for the client. The fact of having the quality management system deployed for a prolonged period of time should have translated into a higher level of process management maturity and, consequently, also into other benefits stemming from the process approach implementation. Moreover, as the QMS had evolved (which typically takes some time), part of barriers involved in the process approach implementation should have been reduced or even eliminated. However, no such regularity was confirmed by the survey. Consequently, the research results obtained imply that efficiency of the quality management systems implemented in the local government authorities subject to the survey is questionable. The results of the survey addressed in this paper support the legitimacy of the trends observed among the European as well as global public administration bodies which reveal their declining interest in quality management systems.

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Wpływ systemu zarządzania jakością na efekty wdrożenia podejścia procesowego

Streszczenie

Artykuł zawiera omówienie wyników szeroko zakrojonych badań empirycznych przeprowadzonych w 2016 r. na próbie 495 jednostek samorządu terytorialnego wykorzystując technikę kwestionariusza CAWI wspomaganą badanie CATI. Uzyskane w ten sposób wyniki zweryfikowano statystycznie a następnie przeprowadzono ich krytyczną analizę formułując wnioski końcowe.

Celem artykułu jest poznanie wpływu SZJ na zidentyfikowane zalety i wady wynikające z wdrożenia podejścia procesowego w administracji publicznej. Główne pytanie badawcze można sformułować w następującej postaci: czy SZJ pozytywnie oddziałuje na funkcjonowanie podejścia procesowego i w jakim stopniu wpływa on na korzyści oraz bariery towarzyszące wdrożeniu podejścia procesowego?

Zaobserwowano, że wdrożenie systemu jakości nie gwarantuje automatycznie żadnych korzyści zewnętrznych wynikających z orientacji procesowej. Wyniki badań sugerują, że skuteczność systemów zarządzania jakością w badanych jednostkach samorządu terytorialnego jest wątpliwa, szczególnie w obszarze ich doskonalenia.

Słowa kluczowe: podejście procesowe, administracja publiczna, korzyści i bariery podejścia procesowego