The BPM Governance Supporting Factors and Implementation Barriers – The Experience of a Public University

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Abstract. The positive impact associated with the implementation of process solutions in private-sector organizations has been signaled in the literature on the subject. From the cognitive perspective, assessment of the vulnerability of BPM and BPM Governance implementation in public sector organizations, with particular emphasis on public universities, is of significance. The research gap, meaning the small number of publications presenting implementation of BPM Governance elements in these organizations, needs to be underlined here. The article's originality lies in the focus on describing the empirical experience associated with strategy reconfiguration and resulting from the implementation of characteristic process organization solutions at a higher education institution. The main aim of this paper is to present the factors supporting and hindering implementation of BPM Governance at a public university. As a result of the research carried out using the methods of systematic literature review and participant observation, a catalog of the factors supporting and rigidifying the implementation of BPM Governance elements was developed. The article additionally describes the Authors' experience in identifying the university stakeholders, the processes architecture, and the formalization of selected processes using authorial IT tools.

Keywords: BPM governance · BPM initiatives · Public university · Public organization

1 Introduction

Public universities and their activity constitute an important element of a society's civilizational development. Accordingly, a university's involvement in the development of world science plays an important role from the perspective of the university stakeholders, as it can allow them to discount the benefits resulting from maintaining such development. In the context of the challenges faced by public universities in Poland, it is crucial to answer the question of whether the current organizational system enables achievement of such a goal. One of the systemic solutions increasing an organization's flexibility in responding to exogenous and endogenous factors entails implementation of Business Process Management (BPM) and the resulting focus of the organization's

activities on processes by identifying them as the key objects of its structure. This results from the cross-functional and the inter-business nature of BPM [1, 2]. In the aftermath of the dynamic changes taking place in the university environment, such structural features as centralization, specialization and formalization have expanded in a relatively short time, which has rigidified processes by transforming them into procedures. Since the changes were adaptive in character, and the functioning system, including the structural solutions, were modified in an evolutionary and fragmentary manner (in various areas), the efficacy of the organizations' operating systems decreased. The review of BPM and BPM Governance literature, carried out for the purpose of this article, allowed identification of the research gaps (RG). RG1: Small quantity of publications analyzing the implementation of BPM and BPM Governance in public universities. RG2: Scarcity of well-established in the scientific literature theory, illustrating concepts, as well as design and reconfiguration methods for university structural solutions aimed at flexibility (processization). RG3: Scarcity of publications presenting implementation of the integrated information and communication systems supporting the strategic and operational dimensions of university management. RG4: Lack of a set of good practices regarding BPM implementation at public universities. The research problem has been formulated as four research questions (RQ). RQ1: How can BPM and BPM Governance be integrated in a public university at the stage of its strategy and BMP-implementation-aimed activity formulation? RQ2: Which of the BPM Governance elements identified can be implemented at a public university? RQ3: What are the barriers and limitations to BPMG implementation at a public university? RQ4: What steps should be taken, considering the reality of the organizational system functioning at universities, in order to discount the processization outcome using BPM Governance? The article mainly aims at presenting the factors supporting and hindering implementation of BPM Governance at a public university. Secondarily, partial objectives, intersecting at three planes: the epistemological (EO), the methodological (MO), and the utilitarian (UO), were outlined as a result of the research problem posed and the main objective formulated: EO1: Identification of BPM Governance elements and assessment of their possible implementation at a public higher education institution. EO2: Outlining the framework of common-ground BSC, BPM and BPM Governance implementation at a public university. MO: Presentation of BPM and BPM Governance implementation at a public university. UO1: Presentation of a catalog of recommendations for BPM implementation at a public university. In order to achieve the objectives formulated, the methods of systematic subject literature review and participant observation were used. UO2: Development, based on the set of the supporting and hindering factors presented, of utilitarian recommendations regarding reconfiguration of a public university's organizational structure.

2   BMP and BPM Governance in the Public Sector - Theoretical Background

The years of neglect, including the belittling of the role implementation of new management concepts in public organizations plays, have led to an accumulation of a full spectrum of disturbances within the sphere of governance, causing emergence of an aura of 'silent' acceptance for the defective dimension of the organizational structure along

with the amassing of a wide spectrum of pathologies, the catalog of which begins, inter alia, with bureaucracy and suppressed, centralized decision-making [3]. The managerial deficiencies that had accumulated over the years in public universities were, in many cases, relatively effectively eliminated by the dominant competitive position of this type of organizations. Private sector organizations, unlike the public sector, focus their activity on obtaining and maintaining competitive advantage in terms of profit maximization [4]. As long as private educational entities did not pose a serious threat to the public entities in Poland, the motivation for pensive and systemic changes in the art of university management was rather modest [5]. The polarity reversal occurred as a result of the dynamic increase in the importance of private universities as well as due to the unfavorable demographic trends and the COVID-19 pandemic, which have virtualized science globally, causing traditional education to be put on hold in at least 120 countries [6]. The aggregated impact of this chain of events has accelerated what might have seemed inevitable, namely the increasingly pronounced tendency to revise the ineffective management concepts applied at public universities. The very idea of process management (BPM) is a concept offering particular streamlining potential. This approach, in recent years, has been gaining increasing approval within the broadly understood public sector, as a potential way to boost the agility and the ability to compete on the progressively decentralized markets [7]. The relatively low popularization of BPM at public entities (particularly at universities) results from numerous doubts and from the generally unjustified fear of potential implementation difficulties. The research diagnosing the BPM implementation potential, carried out in Brazilian state entities, proved that the factor hindering implementation entails, inter alia, the lower-level (linear) personnel's poor awareness, the general unpreparedness, and the lack of willingness to understand the benefits arising from reconfiguring the existing status-quo into a process-oriented dimension [8].

When assessing the BPM implementation potential in public organizations, attention should be given to the aspect public and private entities have in common, i.e., the six core elements of BPM, which affect successful implementation of the process approach [9]. Reflecting on the conclusions formulated by M. Rosemann and J. vom Brocke, the Authors' observations follow. The six factors that are fundamental to the BPM concept constitute the common denominator for both public and private entities. Due to this underlying similarity, public organizations should not be stigmatized as those unable to fully implement BPM. This observation should induce revision of the opinion treating public entities, virtually in a top-down manner, as impermeable and 'difficult' objects of potential processization. This mental simplification is, according to the Authors, a view that impoverishes diffusion of scientific and economic practice. This contributes to the slowing down in public entity (here: university) improvement, and thus to this sector's low propensity for implementation of the process approach, which in turn results in a decrease in the quality of the services provided.

The growing interest in this method of management is currently noticeable among the representatives of both the academic community and the business practice [7, 10]. Despite the raising interest in the BPM method, signs of problems associated with the incomprehension of this organizational management method can be noticed [2, 11]. Such a state of the matter results in unsuccessful attempts to implement BPM, which

may result from the lack of understanding of the BPM framework assumptions, as well as from the orientation of management activities on the ad hoc and atomized initiatives that are aimed at improvement of individual processes or their stages, without viewing the problem through the prism of the entire organization [12, 13].

As emphasized in the works [1, 2, 7, 14–18], BPM Governance is identified as a critical factor determining the success of the BPM initiatives carried out in an organization. A.F.L. Santana et al., based on a systematic literature review of the works [14, 16, 18–24], propounded a catalog of BPM elements, which includes: business process standards, business process roles and responsibility, business process objectives, tasks, assessment methods, control methods, governance structures, as well as architecture and infrastructure [7].

Summing up, the fact that the research questions formulated are clearly related to the needs reported in the contemporary literature on the subject constitutes the strong point of the study. These needs are related, among others, to the issue of BPM implementation outside the business sector, since its application potential is noticeable, inter alia, also in in the field of education [25].

3   Materials and Methods

3.1   Research Object

The object of the empirical research is one of the largest public universities in Poland. Its organizational structure includes 11 faculties, representing 21 scientific disciplines that are subject to periodic parametric evaluation for scientific quality (excellence) assessment purposes. The university's structure is also expanded by satellite units, including its own library, a publishing house, and special purpose vehicles established to commercialize the research workers' knowledge. The university employs nearly 3 000 persons, 60% of which are research and teaching personnel. The university's strategic goals have been defined within four perspectives addressing its mission via assurance and development of: (1) the highest level of university education; (2) the highest quality of scientific research and innovation; (3) openness, social responsibility and the university's commitment to, inter alia, cooperation with the socio-economic environment; and (4) the highest level of university managerial efficiency. The university's management activity defined necessitated, in particular, implementation of a management methodology that would grant highest priority to process management.

The study entailed a non-random sampling technique, incorporating deliberate choice, used for selecting the study participants. 230 university employees took part in the procedure. The selection criterion primarily concerned the competences and the knowledge associated with the activities carried out as part of the processes identified.

3.2   Characteristics of BPM and BPM Governance Implementation at a Higher Education Institution

The article's empirical layer presents the stages of process solution implementation, using the example of a multi-faculty university in Poland, as well as outlines the directions of further activities aimed at increasing the level of process maturity and BPM

Governance implementation. The propounded and described BPM and BPMG implementation methodology propounded and described has been formulated based on the current state of the work on modifying the university's strategy and implementing the BPM solutions and the BPMG elements identified as the factors supporting its processization. Appropriately, the project team responsible for the BPM implementation formulated 8 transition stages constituting the authorial BPM implementation methodology propounded:

1. Formulation of a new strategy for the application of a system of measures and the execution of BSC implementation,
2. Identification of the university process's stakeholders,
3. Verification, in cooperation with the process implementers, of the university process architecture identified and the grouping of the processes into X areas,
4. Identification of the degree of digitization, the improvement potential, and the complexity (number of the functional areas involved in the process implementation) of the university's processes. Identification of processes requiring reconfiguration based on the evaluation criteria adopted,
5. Recreation of the current organizational structure and roles, as well as assessment of the capacity for reconfiguration of the structural solution towards processes,
6. Analysis of the identified processes' trajectory through the functional areas (the university's organizational units),
7. External and internal identification of the suppliers and the clients (recipients) in the processes identified,
8. Formalization of the process group selected.

The above description of the activities derives from the consultations and the workshops carried out by the Authors at the university under the supervision of the Rectoral team. It constitutes a proposal indicating the activities aimed at gradual (evolutionary) processization of a public organization. The sequence of actions adopted in such fashion allows, inter alia, to mitigate the barriers associated with the excess of the administrative structures and the human factor's resistance, as well as to gradually change the organizational culture. It, of course, entails a multi-year process. This process has been - owing to the co-development, in cooperation with the representatives of all organizational units, of new process solutions - strengthened through the use of the participatory model. The study carried out was of action research character (it combined research with broad reflection on the practice) [26].

4   Results and Discussion

4.1   Characteristics of BPM, BOMG and BSC Implementation Stages

Formulation a New a New Strategy for the Organization's Processization and the Implementation of a Measure System
When formulating a new strategy for a public higher education institution, one should take the barriers resulting from the current system of functioning (including the process

architecture) into account, including the degree of centralization, formalization, and organizational-structure specialization. This means that reconfiguration of the strategic solutions calls for trainings and employee activation in the terms of their comprehension of the changes being introduced. Conversely, within the dimension of the functioning system, the main element of which is the process, it is important to consider the role of the stakeholders who, through the structure of their expectations, should have real impact on the shape of the process effect, and indirectly on the course thereof. Considering the public space of universities, this mainly applies to the clients, in internal terms. In order to perform such an assessment, it is, at first, necessary to: diagnose the current state of organization (e.g., through the so-called mapping and prioritization of the processes being implemented); identify and assess the capacity for the use of the good practices developed in this area; take the goals and the expectations (internal and external) that have been set for the organization into account.

Identification of the University's Process Stakeholders/Stakeholder Engagement
In order to effectively use the knowledge accumulated in the organization, with the aim to increase the level of the process recipients' satisfaction with the way their needs are met, a diversified group of stakeholders was invited to participate in the diagnostic and design work. As not to omit any of the important processes being implemented at the organization, a list of processes was developed in cooperation with intentionally selected (indicated by the Rectoral team) representatives of various organizational units, who had the knowledge of and experience with the activities carried out at the university. The analysis of the processes being carried out was preceded by a thorough breakdown of the process stakeholders, so as to enable both the process recipients and the implementers, as well as any other persons who have impact on the course of a given process, to be invited to participate in the assessment. Due to the specificity of higher education institutions' activity, identification of the processes implemented by the unit was carried out with regard to the following eleven areas: (1) scientific corpus management; (2) teaching body management; (3) education of the future; (4) finance, administration and budgeting; (5) infrastructure management; (6) human resources; (7) client – the students; (8) client – the society; (9) client – the economy; (10) promotion; (11) internationalization.

Process Identification and Prioritization at the University Under Examination
The process identification stage was divided into three substages. In the first stage, the project team attempted to identify the main and the auxiliary processes implemented at the University of Gdańsk. An attempt was then made to assess the degree of interaction between the processes within the architecture identified. For this purpose, a matrix was created, in which the impact of the process A outputs on the process B inputs was assessed. In this substage, a 5-point measurement scale was used (0 - a given process has no impact on another; 1 – a given process has little impact on another; 2 – a given process has average impact on another; 3 – a given process has above-average impact on another; 4 – a given process has significant impact on another; 5 – a given process has great impact on another). Subsequently, based on the data obtained, an attempt was made to identify those process pairs, which are characterized by the highest dependency. This procedure allowed for initial reconstruction of the process architecture and enabled discussion about the blending of processes or the division thereof into smaller ones. By analyzing

the anonymized expert assessments, which determine the value of individual process pairs, the processes that may be of the greatest significance for the implementation of other processes were identified. Simultaneously, a multi-criteria method of process evaluation was developed as part of the diagnostics, incorporating the following criteria: (1) the number of employees involved in the implementation of a given process, the process significance, measured by the number of the persons it directly concerns; (2) the degree of process formalization; (3) the process digitization potential, with particular emphasis on electronic document circulation; (4) the level of the domain solution's independence from the system solutions; (5) the potential to improve the processes, the paste of change implementation (achievement of an acceptable level); (6) the number of the organizational units involved in the process implementation.

Process Formalization

The stage associated with the formalization of the processes identified was preceded by identification of the group of the processes characterized by the highest potential for digitization and implementation of electronic document circulation, and by the highest complexity, defined by the number of the functional areas implementing a process. Consequently, two processes were qualified for further work: the handling and settlement of the purchases made under and outside the provisions of the Public Procurement Law (P1), as well as the University-wide planning and allocation of the teaching loads (P2). It should be noted here that during the work, attempts were made to reconfigure the processes into an end-to-end category. Both the functional area representatives who declared implementation of these processes as well as the process recipients (external and internal clients) indicated were invited to participate in this stage. First, the real process proceedings were recreated using a BOC Adonis tool. Following the study results, a set of supporting factors and those hindering the implementation of selected BPM Governance elements at the university under examination is presented in Table 1.

As indicated in Table 1, implementation of BPM Governance solutions in a public university is primarily limited by the lack of prior activities that would be aimed at implementing BPM. On the structural solution level, despite the high activation of the university employees and the recognition of the necessity to implement changes, as confirmed by the study, that would enable a flexible response to the external and internal factors, the highly hierarchical functional organizational structure constitutes a limiting factor. The lack of previous activities aimed at BPM implementation did not result in the focus on the effects of the processes and their compliance, in terms of external and internal aspects, with the client's needs. What is more, the faculties' high autonomy causes BPM implementation at a multi-faculty university to be problematic, due to the lack of full strategic managerial support for BMP. Faculties maximize their own goals at the operational and tactical levels, rather than the strategic level of the entire university. The activities associated with the verification of the research-generated effects (scientific) and the didactic processes were usually carried out as a result of the inspections conducted by the decision-making bodies (e.g., the ministry). This has made the necessity to implement these processes in accordance with predefined standards quite obvious, which in turn resulted in an increase in the level of process standardization and in occasional measurement thereof (measurements performed for the needs of the

Table 1. Factors supporting and hindering BPM Governance implementation at a public university

Elements of BPMG	Supporting factors	Hindering factors
Business process standards	• University authorities' openness to the transfer of the good BPM and BPMG practices derived from the private sector • Comprehension of the process standardization level's gradeability that is dependent on the prerogatives of the implementers	• Lack of BPM training • Incorrect understanding of the concept of a process and its identification with such notions as a procedure or a function
Business process roles and responsibility	• Activation of employees in the context of the process improvements proposed • Comprehension of the shortcomings resulting from the high hierarchization of the university's organizational structure	• High level of specialization • The phenomenon of area sub-optimization in relation to the organization • Failure to identify the customer-supplier relationship in internal approach
Business process objectives	• The implementation of process solutions has been included in the university's new strategy	• The strategic goals did not concern the processes implemented previously • Lack of a measurement system for university processes
Assessment methods	• Application of the knowledge accumulated in the organization enables elaboration of the indicators reflecting the essence of the changes taking place in the organization	• Lack of measurement of the added value generated in the processes
Control methods	• The search for solutions aimed at achievement of the requirements designed by decision-making bodies (the Ministry, etc.)	• Lack of identified management processes • Lack of a self-diagnosis mechanism

(continued)

Table 1. (*continued*)

Elements of BPMG	Supporting factors	Hindering factors
Governance structures	• Support for interdisciplinary forms of work • Employees' openness for sharing the knowledge regarding the activities implemented	• The main object of organizational structure building is departments, rather than teams • Lack of a Process Management Office unit and organizational process roles (e.g. process owner) • High structure hierarchy
Architecture and infrastructure	• Implementation of an ERP tool • Recognition of the need for digitization • Preparedness for adaptation of the IT department (the role of programmers) to the current university processization activities	• Diffused decision-making centers use domain-specific IT tools that are not complementary to other systems

Source: own elaboration.

controlling institutions). One important factor supporting the BPM Governance implementation entailed the understanding of the need for digitization and an ERP class tool implementation on the part of the university authorities and employees. It should be emphasized here that, within the IT dimension, activity should be undertaken to replace the scattered IT tool and develop a university management IT system. Figure 1 shows the actual cognizance of the processes at the university under examination.

Fragmentary perception of the processes is noticeable on the part of the implementers. It should be underlined here that the functional organizational structure constitutes an important hindering factor in the BPM and BPM Governance implementation. Figure 2 shows the work objective, aimed at changing the scope of the implementers' process identification, taking a holistic outlook on the entire process into account, with focus on identifying the suppliers and recipients, in external and internal terms, including the understanding of the significance of the process outputs generated, which in turn power other processes in the organization.

The plan for further actions assumes conduction of trainings, modification towards reduction of the functional areas implementing processes, increased prerogative of the process implementers, and digitization of the activities characterized by a high level of repeatability and standardization (e.g., document approval in the process of public procurement, using electronic document circulation).
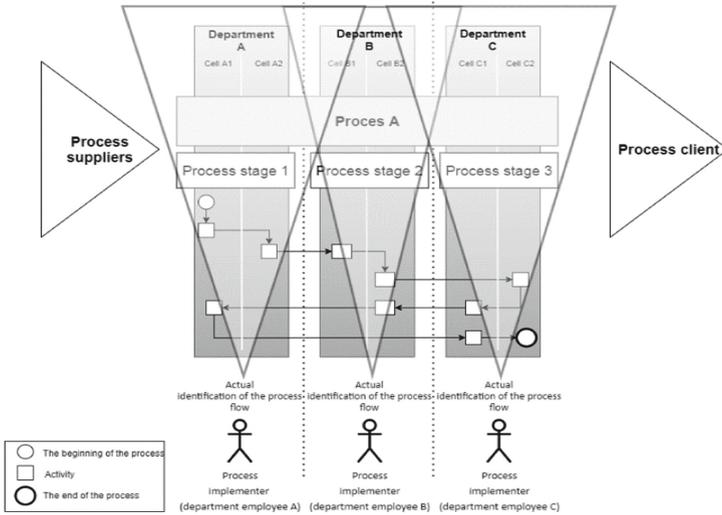
Fig. 1. Diagram of the deficiencies in the current management formula against the implementation of process organization elements
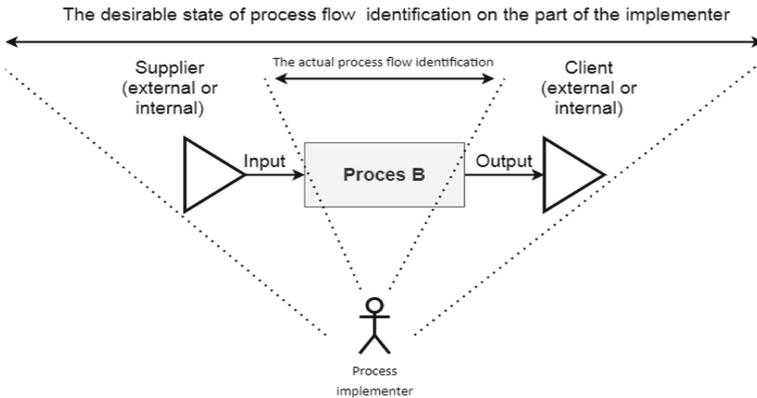

Fig. 2. Identification of the actual and the desired cognizance of a process and its suppliers and recipients

5   Conclusion

The study's partial aim was to prove that these limitations are often apparent, because the similarities existing between private and public entities (in terms of the BPM approach application) are not characterized by such a high dispersion. According to the Authors, the element that binds the public and the private spheres, in terms of process approach applicability, entails the Six Core Elements of the BPM model. The Authors' experience with BPM management and BPM Governance implementation, described in this article, has been outlined within the scope of five generalizing conclusions: First,

identification and reduction of the proceedings in the processes (elimination of double-executed activities and elimination of excessive decision gates) allows for exclusion of many intermediate decision-making links, which reduces the number of the decisions made in the organization, which, in turn, positively affects the process runtime. Secondly, the phenomenon of responsibility dispersion (and avoidance) can be observed in public entities. In order to minimize the responsibility for potential errors, processes are often migrated between the cells, which repeatedly approve individual stages of implementation - this causes the blurring of the responsibility for errors, in the event of problems. The last conclusion: recognition of the need to parallelly implement IT and communication techniques as well as ERP-class tools, with the purpose of data collection and exploration, including electronic document circulation. This means that achievement of a state in which conscious implementation of an ERP tool follows from the actions aimed at increasing the level of the university's process maturity. The above-presented results of the empirical procedure reflecting the activities that have been carried out so far with the aim of implementing BPM and BPM Governance at universities exhibit, just as other studies, certain limitations. The lack of a project activity stage that would be aimed at identification of the degree of a higher education institution's exposure to BPM and BPM Governance implementation has been classified as such a limitation. The limitation identified constituted an incentive for designation, within the area of the issues discussed, of a new research direction associated with the design of a descriptive model of maturity, adapted to the specificity of the organization analyzed and enabling objectified assessment (based on the symptoms of processability) of the current degree of maturity. Despite the fact that this stage was not taken into account prior to the process identification and formalization in the organization under analysis, in the Authors' opinion, the supporting and hindering factors identified in this article allow for better formulation of such a model. What is more, the Author's previous experience with BPM implementation at a public university has delineated another research direction associated with implementation of BPM ambidexterity assumptions, including consideration of processes in operational and exploratory distribution. Within the context of social implication, the fact that the solution proposed pertains to a wide range of beneficiaries constitutes an undoubted advantage. The changes developed through dialogue lead to an optimization of the domain solutions, which in turn results in the reduction of costs or an increased work efficiency and quality. The general society, which in many countries (including Poland) finances the higher education sector, thus benefits from the increased efficiency and quality of university operation. The internal stakeholders, such as the employees, who improve the conditions of their work by co-developing new solutions and ameliorate the processes in which they participate, must be taken into consideration as well. As such, a culture of cooperation develops, which can also bear fruit in other areas. Other beneficiaries here are the stakeholders, i.e., the students, business environment institutions, entrepreneurs whose perspective (as the recipients of the processes reconfigured) constitutes the key element of the changes designed.

References

1. Rosemann, M., vom Brocke, J.: The six core elements of business process management. In: vom Brocke, J., Rosemann, M. (eds.) Handbook on Business Process Management 1. IHIS, pp. 107–122. Springer, Heidelberg (2010). https://doi.org/10.1007/978-3-642-00416-2_5
2. Markus, M.L., Jacobson, D.D.: Business process governance. In: vom Brocke, J., Rosemann, M. (eds.) Handbook on Business Process Management 2, 1st edn., pp. 201–222. Springer, Heidelberg (2010). https://doi.org/10.1007/978-3-642-01982-1_10
3. Martin, B.R.: What's happening to our universities? Prometheus **34**(1), 7–24 (2016)
4. Colley, C.L., Doyle, J.L., Logan, G.W., Stettinius, W.: What is Corporate Governance? McGraw-Hill Companies Inc., USA (2005)
5. Woźniak, P.: Podejście procesowe w systemie zarządzania uczelnią. Konferencja Innowacje w Zarządzaniu i Inżynierii Produkcji, Polskie Towarzystwo Zarządzania produkcją (2014). http://ptzp.org.pl/files/konferencje/kzz/artyk_pdf_2014/T2/t2_481.pdf. Accessed 26 Mar 2021
6. Shahzad, A., Hassan, R., Aremu, A.Y., Hussain, A., Lodhi, R.N.: Effects of COVID-19 in E-learning on higher education institution students: the group comparison between male and female. Qual. Quant. 1–22 (2020)
7. Santana, A.F.L., Alves, C., Santos, H.R.M., Felix, A.L.C.: BPM governance: an exploratory study in public organizations. In: Halpin, T., et al. (eds.) BPMDS/EMMSAD-2011. LNBIP, vol. 81, pp. 46–60. Springer, Heidelberg (2011). https://doi.org/10.1007/978-3-642-21759-3_4
8. Valenca, G., Alves, C.F., Santana, A.F.L., de Oliveira, J.A.P., Santos, H.R.M.: Understanding the adoption of BPM governance in brazilian public sector. In: ECIS 2013 Completed Research, p. 56 (2013)
9. Rosemann, M., vom Brocke, J.: The six core elements of business process management. In: vom Brocke, J., Rosemann, M. (eds.) Handbook on Business Process Management 1. IHIS, 2nd edn., pp. 105–122. Springer, Heidelberg (2015). https://doi.org/10.1007/978-3-642-45100-3_5
10. Syed, R., Bandara, W., French, E., Stewart, G.: Getting it right! Critical success factors of BPM in the public sector: a systematic literature review. Australas. J. Inf. Syst. **22**, 1–39 (2018)
11. Niehaves, B., Plattfaut, R., Budde, M., Becker, J.: Business process governance: theorizing and empirical application. In: Proceedings of the Seventeenth Americas Conference on Information Systems (2011)
12. Trkman, P.: The critical success factors of business process management. Int. J. Inf. Manag. **30**(2), 125–134 (2010)
13. de Bruin, T., Rosemann, M.: Using the Delphi technique to identify BPM capability areas. In: ACIS 2007 Proceedings, p. 42 (2007)
14. Korhonen, J.: On the lookout for organizational effectiveness – requisite control structure in BPM governance. In: 1st International Workshop on BPM Governance – WoGo (2007)
15. Bandara, W., Indulska, M., Sadiq, S., Chong, S., Rosemann, M., Green, P.: Major issues in business process management: an expert perspective. Department technical report. School of Information Technology and Electrical Engineering, The University of Queensland (2007)
16. Jeston, J., Nelis, J.: Business Process Management – Practical Guidelines to Successful Implementations, 2nd edn. Elsevier/Butterworth-Heinemann (2008)
17. Ravesteyn, P., Batenburg, R.: Surveying the critical success factors of BPM-systems implementation. Bus. Process. Manag. J. **16**(03), 492–507 (2010)
18. Rosemann, M., de Bruin, T.: Towards a business process management maturity model. In: Proceedings of the 13th European Conference on Information Systems, ECIS (2005)

19. Harmon, P.: BPM governance. BPTrends **3**(3) (2005). http://www.bptrends.com/publicationf iles/bptemailadvisor020805.pdf. Accessed 26 Mar 2021

20. Harmon, P: Best practices in the governance of business process management. BPTrends 1–23. http://www.bptrends.com/publicationfiles/05-25-05BPT1HrTalkforIQPCBPMConf-Har mon.pdf. Accessed 26 Mar 2021

21. Kirchmer, M.: Business process governance for MPE. In: Kirchmer, M. (ed.) High Performance Through Process Excellence From Strategy to Operations, pp. 69–84. Springer, Heidelberg (2009). https://doi.org/10.1007/978-3-540-77825-7_5

22. Spanyi, A.: Business process management governance. In: vom Brocke, J., Rosemann, M. (eds.) International Handbook on Business Process Management 2 - Strategic Alignment, Governance, People and Culture, pp. 223–238. Springer, Heidelberg (2010). https://doi.org/10.1007/978-3-642-01982-1_11

23. Richardson, C.: Process governance best practices: building a BPM center of excellence. BPTrends (2006)

24. Paim, R., Nunes, V., Pinho, B., Santoro, F., Cappelli, C., Baião, F.A.: Structuring a process management center of excellence. In: Proceedings of the 2009 ACM Symposium on Applied Computing - SAC 2009, p. 281. ACM Press, New York (2009)

25. Tuček, D., Basl, P.J.: Using BPM principles to increase the efficiency of processes in higher education in the CR, p. 47 (2011)

26. Somek, B.: Action Research: A Methodology for Change and Development, p. 6. McGraw-Hill Education, Open University Press, England (2006)