SILESIAN UNIVERSITY OF TECHNOLOGY PUBLISHING HOUSE

SCIENTIFIC PAPERS OF SILESIAN UNIVERSITY OF TECHNOLOGY 2025
ORGANIZATION AND MANAGEMENT SERIES NO. 232

IMPLEMENTATION OF WORK EFFECTIVENESS MONITORING SYSTEMS IN PUBLIC ADMINISTRATION: OPPORTUNITIES AND CHALLENGES

Marek MAGDOŃ[1], Seweryn TCHÓRZEWSKI[2*]

[1] University of Economics in Katowice; marek.magdon@ue.katowice.pl, ORCID: 0000-0003-3517-4329
[2] Silesian University of Technology; stchorzewski@polsl.pl, ORCID: 0000-0002-7039-1276
* Correspondence author

Purpose: The aim of the work is to present a practical example of the process of defining and implementing the guidelines of monitoring work effectiveness in a selected public administration entity.
Design/methodology/approach: The analyzed materials include the developed work models in the selected organization (case study), notes from meetings of the team supervising the implementation, also post-implementation comments collected during personal observations (participant observation) and discussions with people directly carrying out the work (in-depth interviews).
Findings: The publication presents a model that was developed for organizing the process of collecting information about the work performed by employees of the selected entity. The model was analyzed and critical elements that should be improved were identified.
Practical implications: The development process and critical analysis of the obtained results for a model for implementing the guidelines of monitoring work effectiveness in selected organizational units of a large public administration entity are presented. Given the intended implementation of the solution across the entire entity, the model was subjected to critical analysis (good and bad practices were inventoried during the work).
Originality/value: The presented experiences are shown from the perspective of the team preparing and implementing the developed solution, demonstrating a methodical approach to the entire process and the need for individualized treatment of different areas of the organization. The authors believe that the developed solution, despite its limitations resulting from its location within a specific organization, can be widely used in implementing similar systems in other entities, both in Poland and abroad.
Keywords: work effectiveness, implementation of management procedures, work productivity, management systems.
Category of the paper: Research paper, Case study.

1. Introduction

Every human action is viewed through the prism of its effectiveness. It's no surprise, then, that effectiveness is a crucial management issue for any organization, impacting all aspects of its operations, including achieving defined goals, effective resource utilization, organizational image, and employee motivation. Effectiveness is a measure of the degree to which appropriate goals are set and achieved. In other words, it informs how well assigned tasks are performed (Stoner et al., 1999).

An organization's success or failure depends largely on the level of individual employee effectiveness. Organizations use employee effectiveness information in various aspects of their operations, such as strategy, administration, communication, and development. Knowledge about employee effectiveness enables them to provide constructive feedback, plan development activities, reorganize employee work, and make decisions about resource allocation (Grobelny, 2023; Sauermann, 2023).

In an era of advancing digitalization and increasing pressure on the efficiency and accountability of public institutions, monitoring work effectiveness is gaining particular importance. Despite being widely studied in the private sector (e.g., Franco-Santos et al., 2012; Kalischko, Riedl, 2024; Vuong, Nguyen, 2022), this topic still lacks in-depth research that accounts for the specific characteristics of public administration.

This article presents experiences collected during the implementation of a systemic approach to collecting and utilizing information about tasks performed by employees of selected organizational units of a public administration entity in Poland. A dedicated implementation model for selected areas is presented for this entity, which could be implemented across the entire organization in the future. Based on the collected experience, critical conclusions are drawn that allow for the improvement of the proposed model.

The originality of this paper lies in the combination of a theoretical perspective with practical experience gained from implementing a work effectiveness monitoring system in a specific public administration entity. The proposed model, based on a real case study, may serve as a reference point for other institutions seeking effective tools to enhance performance. In this way, the article contributes to the ongoing discourse on modern public management, providing both theoretical insights and practical value.

2. Effectiveness: the concept and importance of measurement

Effectiveness is one of the main subjects of interest in both management sciences and economics (Samuelson, Nordhaus, 1999; Stoner et al., 1999; Ziębicki, 2010; Szymańska, 2010; Zbierowski, 2017). According to P. Drucker (2006, p. 167) effectiveness has become „[…] crucial to a man's self-development; to organization development; and to the fulfilment and viability of modern society". It is a measurable, gradable and relative category, used to make assessments and value judgments (Malik, 2004). Depending on the approach adopted, both the criteria and the measures used for its assessment will differ – the static approach is based on the principle of rational management, while in the dynamic approach, the category of scarcity plays a key role. The essence of the static approach to effectiveness is the degree of achieving the assumed goals and improving performance, while the point of the dynamic approach is the ability to acquire and properly utilize resources. In the literature, the static approach is also referred to as the purpose-oriented, while the dynamic approach is referred to as the systemic approach (Malik, 2004).

In the static approach, the evaluation criteria include effectiveness (maximizing the compliance of achieved results with established goals), management efficiency, understood as profitability (maximizing the difference between achieved results and incurred costs), and cost-efficiency (optimizing the relationship between results and costs). Evaluation measures, in turn, may include: added value, profit, return on investment (ROI) and the degree of goal achievement. In the case of dynamic effectiveness, the evaluation criteria include the ability to acquire optimal amounts of resources to maximize the organization's market position and the performance of the organization itself. A measure of effectiveness understood in this way may be the maximization of income generated in relation to available resources (Malik, 2004; Kowal, 2013; Becla et al., 2024).

In the case of a public administration entity, the Act of 27 August 2009 on public finances (consolidated text published in Journal of Laws of 2024, item 1530) obliges to measure effectiveness at the level of the organization as a whole, defining management control and indicating its objectives (Article 68) (Sakowicz et al., 2014). However, the effectiveness analysis may concern various organizational levels, such as (Skowron-Mielnik, 2009):

– individual employee (individual effectiveness),
– team of employees (group effectiveness),
– separate organizational units (department, division, unit),
– the organization and its employees as a whole.

The further the work effect is from its direct performer, the more difficult it is to indicate specific reasons for the improvement or deterioration of results and to justify the decision to increase or decrease the expenditure incurred on these effects (Skowron-Mielnik, 2009).

Management science generally emphasizes the importance of performance measurement and analysis – effective management requires accurate performance measurement, because only then can managers make appropriate decisions and assess the organization's progress. Without monitoring and measurement, how could managers gain knowledge about how organizational units and the teams under their control are performing?

It turns out that many organizations don't measure their results on an ongoing basis and are therefore unable to manage their performance. Therefore, effectiveness measurement seems crucial to improving productivity and ultimately ensuring organizational sustainability (Sookdeo, 2019). Effectiveness measurement involves collecting data on the performance level of a specific unit over a specific period of time and assigning a numerical value to that level. This assignment is performed on a specific scale, and the numerical data is collected using indicators – an indicator is a key element of the measurement process (Grobelny, 2023). Work effectiveness is a complex process that cannot be based only on one indicator, therefore the use of various methods and tools allows for a more complete picture of effectiveness, taking into account both quantitative and qualitative aspects of work (Evans, 2023). Monitoring and assessing the effectiveness of work performed is a standard management activity whose origins date back to the pre-industrial era – back then it was carried out through direct "observation from behind" (Woźniak, 2021).

Measuring work effectiveness can bring tangible benefits, including (Mierzenie wydajności pracowników…, 2024):

- increasing operational effectiveness – monitoring effectiveness enables the detection of areas requiring improvement, which makes it possible to optimize operational processes, which in turn leads to an improvement in the overall effectiveness of the organization,
- better work planning – measuring effectiveness helps in effective human resources management by matching the number of employees to the current needs related to the implementation of tasks, provides specific data for effective work planning depending on changing conditions,
- quick response to changes in processes – regular monitoring allows management to quickly respond to emerging problems and make appropriate changes in the distribution of tasks between teams to ensure process continuity and timely completion of tasks,
- optimization of financial resources – measuring effectiveness allows us to identify areas where financial resources are used inefficiently, optimizing these resources leads to improving the way funds are spent,

- motivating employees – knowing that their performance is monitored encourages employees to be more engaged and focused,
- individual employee development – measuring effectiveness allows to detect strengths and areas requiring improvement in individual employees, on this basis, it is possible to adapt training programs to their individual development needs,
- fair employee evaluation – regular performance monitoring provides reliable and objective information that can be taken into account when assessing an employee; recorded data, based on specific indicators, can influence the bonus process, which gives employees a sense of fairness and influence on results, and consequently increases their motivation,
- development of organizational culture – regular evaluation of employee performance contributes to the creation of a positive organizational culture in which achievements are appreciated and encountered difficulties are treated as opportunities for development and improvement,
- replicating good practices – comparing performance data across teams or locations enables the identification of effective practices that can be implemented in other parts of the organization, fully utilizing the potential of all employees,
- identification of potential leaders – analysis of the results helps to detect people with high potential to fulfill leadership roles, constituting a valuable source of information when planning staff development, professional career and succession.

A. Gębczyńska and R. Brajer-Marczak (2020), based on their literature review, indicate that publications in the field of efficiency management in public administration focus on three areas: methods of measuring efficiency, the increased use of information derived from efficiency (including performance) measurement, and the impact of performance management on achieved results. Other authors (Hammerschmid, Löffler, 2015; Kohtamäki, Olsson, 2018) address the issue of implementing an effectiveness management system not at the level of a single institution, but at the national level – across the entire sector, on a macro scale. They present legislative solutions, the size of the public sector, the scale of public spending, and similar factors. However, the literature review revealed no studies addressing a model for implementing work monitoring guidelines in a public administration entity, nor the associated difficulties, opportunities, and challenges. This article aims to fill that research gap.

3. Methods

This article presents the results of research collected during the implementation of effectiveness measurement guidelines in a selected public administration entity. The organization's developed principles and reference model were assessed, ultimately serving to systematically implement the adopted solution across the organization. The research process included the following stages:

1. Describing the implementation model for work effectiveness assessment guidelines implemented in the selected entity (case study).
2. Testing the correctness of implementing this model in practical application with a critical analysis of the obtained results conducted in the form of personal observation (participant observation) and interviews with people implementing the adopted solution (IDI).
3. Proposing modifications to the target/reference solution.

During the research, the following were used: internal documentation of the organization, such as organizational regulations, implementation documentation, and results of interviews with the entity's employees.

3.1. Premises for introducing an effectiveness monitoring system

The analyzed public administration entity carries out tasks aimed at providing citizens of a selected area of Poland with access to a range of support, control, and administrative decision-making services. Over the past ten years, the growing number of responsibilities and the increasing amount of funds distributed by the entity have led to its expansion. The number of employees and the size of the structure have led to a noticeable increase in the inertia of intra-organizational processes and a lack of clarity regarding the status of ongoing tasks. The number of existing departments has increased, contributing to the typical "silo-ing" of the organization by carrying out their specialized tasks. At the same time, the number of decision-making levels increased, hindering internal communication and monitoring the effects and outcomes of assigned tasks. Consequently, the decision was made to implement a solution that would enable effective management of the organization, where "effective" meant providing citizens with the best possible results, for example, quick access to information. Considering the factors mentioned above, the following requirements and goals were defined for the system being developed:

1. Improving the monitoring of the pace and degree of achievement for the goals set for entity individual organizational units.
2. Support for the management process of individual organizational units of the entity – based on numerical data, it will be possible to draw conclusions and take actions in the context of planning, organizing, managing human resources and controlling the implementation of assigned tasks.
3. Assessment of work effectiveness in individual organizational units of the entity – indicators enabling measurement are to be introduced (minimizing the subjectivity of the assessment).
4. Support for the decision-making process in relation to the allocation of human resources, including decisions on the number and type of tasks delegated to individual employees – management decisions will be made on the basis of indicators/numerical values.
5. Support for the decision-making process in relation to the bonus system – decisions will be made on the basis of numerical, measurable and verifiable indicators/values.

Due to the previously mentioned growth of the organization, it was assumed that, in principle, the study of the effectiveness of processes implemented in the organization should take into account three levels:

1. Employee level – this level measures the work performed by a specific employee on a specific working day and time. This is not computer tracking, but rather a conscious employee service activity – reporting will involve recording the types of tasks performed by a given organizational unit and recording the time it takes to complete them.

   Due to the nature of the work, continuous time reporting down to the minute was not recommended. Although this approach is highly accurate and allows for highly precise verification of employee work time, it comes with administrative costs, including the need to dedicate time to "switching" between tasks and often overly detailed planning of the workday. As a result, in extreme cases, effectiveness can decrease. Therefore, it was proposed that employee time reporting should include some simplifications and rounding. For the pilot study period, it was agreed that the minimum unit would be 15 minutes, with employees able to report their time in full at the end of the day.
2. Team manager level – its task will be to analyze data entered by employees. This will allow to generate summary tables and/or charts indicating how much time was used on specific kind of tasks and how much time team members spent achieving particular work results. This layer will display results in the form of calculated performance indicators, including those compared to previous periods and defined reference values. Access to the data will be limited to employees reporting to a given team manager who has performed similar tasks.

3. Director level – it will be possible to obtain and observe exactly the same information available to a team manager, but without limiting it to employees of a specific team, but for the entire department, divided into teams. Importantly, this level will define reference values for indicators and allow for the addition of new tasks, i.e., expanding the dictionary of existing tasks for the employee to choose from. Collecting and inventorying this data over a longer period (over three months) will allow for the definition/construction of reference values.

   In fact, it is the department directors who will be the main recipients of the entire solution, because based on the inventoried data it will be possible to take actions in the field of assigning tasks, setting bonuses, or in extreme cases, making changes within the organizational structure of the department.

Typical indicators used to analyze recorded work time are presented in detail in the appendix to this publication.

3.2. Initial implementation model of the effectiveness monitoring system

The significant diversity in the content of the monitored activities indicated the need to implement a solution that would be simple and universal enough to be implemented, if not in all, then at least in most of the existing departments. The identified needs were transformed into a plan for implementing changes within the organization (see Figure 1). They were proposed to be implemented in the following order:

1. Developing guidelines for measuring work effectiveness for both quantitative and process-based tasks. Needs and challenges were identified, and existing administrative processes were analyzed, including existing procedures, regulations, organizational structure, and management and organizational solutions in selected organizational units.
2. Selecting three departments to test the proposed solution. This allowed for data collection and information on the existing methods for measuring the effectiveness of administrative processes and human resources management in selected organizational units.
3. Implementation of the proposed guidelines for selected areas, along with the principle of including subsequent areas on a monthly basis, which allowed, based on previously gathered experience, to develop a model adequate to the functioning of the organization, possible to implement in other areas. Evaluation of the collected data for its usefulness and suitability to the specification of selected organizational units.
4. Developing an IT tool that allows for viewing collected data on ongoing tasks. Work on this system was carried out in parallel with the tasks listed in points 2 and 3.
5. Formulating recommendations – based on the identified benefits and limitations, a set of recommendations was developed.

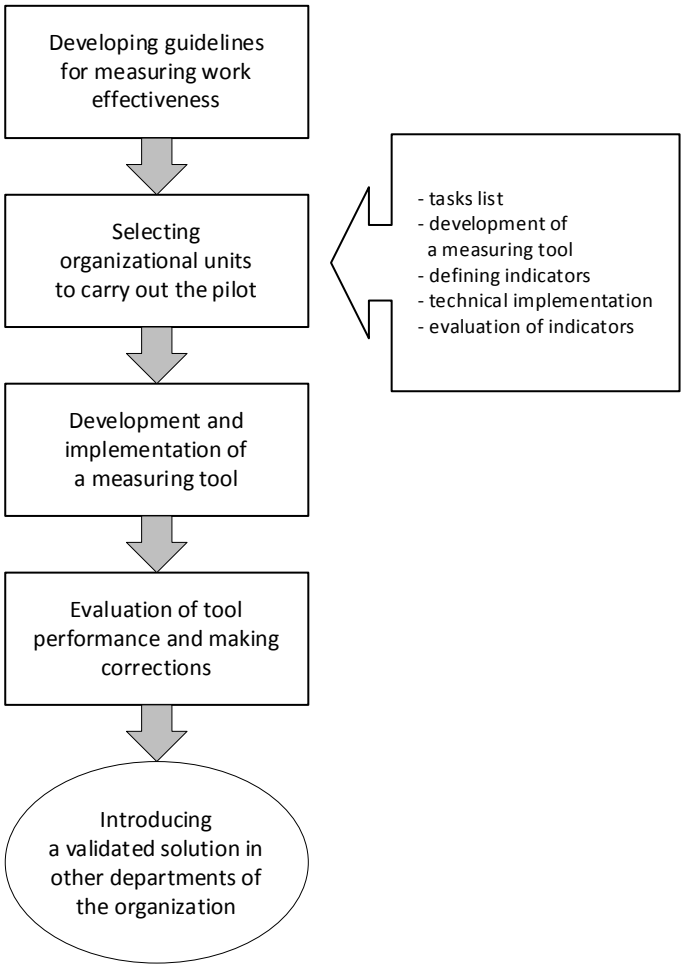

Figure 1. The initial model for implementing work monitoring guidelines in a public administration entity.

Source: authors' own work.

The process of implementing a measurement tool that allows for the assessment of the effectiveness of activities conducted in individual organizational units of a public administration entity using partial indicators will require the following actions:

1. Defining a list of tasks to be performed in individual teams/areas within each department.
2. Developing a department-specific measurement tool.
3. Defining indicators specific to each department.
4. Technical implementation of the measurement tool.
5. Evaluating the achieved indicators and their potential modification, and proposing reference values for subsequent periods.

4. Results

The results of the pilot implementation allowed for the practical confirmation of the possibility of adopting the proposed solution, while taking into account the comments and recommendations for improvement formulated below. Proposed solution functioning scheme is presented on the example of the area related to wages and salaries – one of the indicators presented in the annex (the indicator of the employee's task completion time) was used to analyze the collected data. Next, based on data from one settlement period (e.g. quarter), the target structure of indicators (number, type and structure of individual indicators) used to measure work, as well as the expected reference value allowing for the target measurement of work effects, were to be proposed. Due to the different nature of work in individual areas of each department of the organization and the level of advancement and awareness of employees in relation to performance measurement, it was determined that it is not possible to introduce universal measures for the entire organization – each department requires an individual approach to defining measures. Furthermore, it was proposed that at this stage, attempts to standardize and compare effectiveness not only between entire departments of the organization but also between units within a single department should be abandoned (only when the solution has "solidified" will it be possible to address this issue).

The structure of the form for collecting data by employees (the example uses a measurement tool created in MS Excel) has been adapted to the specific nature of work in the department. Employees completed information regarding, among other things, the type of task performed on a given workday, its start and end time, and the amount of work performed within a given task. A synthetic analysis of the collected data is possible by creating appropriate pivot tables. A summary of sample information useful from the point of view of managing an organizational unit carrying out work in the area of wages and salaries is presented in Table 1. It contains information that allows us to see the amount of specific work performed by each employee of the unit in the analyzed period in relation to the time allocated to these tasks.

Even such a comparison makes noticeable the differences in effectiveness of the same tasks performed by different employees – further calculation and analysis of the indicators will facilitate and speed up the interpretation of the results. For example, the table shows that in the analyzed period employee 2 and employee 4 performed the same task, i.e. "Sick pay - calculation", with employee 2 preparing 100 of these documents in 5.5 hours, and employee 4 preparing 5 documents in 3.58 hours. The indicator of the task completion time by an employee is therefore 3.3 minutes/document for employee 2 and 42.96 minutes/document for employee 4. Such a large discrepancy requires the manager to carry out further, in-depth analysis and explain the reasons for the differences in the obtained results.

Table 1.
An example of an information summary on work input and output for a given period in the area of wages and salaries

Row label	Sum of Working time	Sum of Numbers
Employee 1	**16:54**	**29**
Additional payroll – preparation, printing, circulation	0:54	2
Main payroll	4:00	2
Holiday pay	12:00	25
Employee 2	**8:54**	**111**
Sick pay – payroll	3:24	11
Sick pay – calculation	5:30	100
Employee 3	**9:00**	**151**
Preparing payrolls	8:00	150
Pool – quarterly prizes	1:00	1
Employee 4	**19:05**	**48**
Preparing payrolls	7:30	23
Preparing transfers to the bank accounts of employees, councillors, and to the Tax Office, Social Insurance Institution, State Fund for Rehabilitation of Disabled Persons (PFRON), Employee Capital Plans (PPK)	8:00	20
Sick pay – calculation	3:35	5
Employee 5	**2:00**	**14**
Internal reports	2:00	14

Source: authors' own work.

The collected data can also be presented graphically, for example, in a bar chart. An example of such a presentation, available to department managers (limited to the department) and the department director, is shown in Figure 2. The chart shows which employees spent time on specific tasks on which days. At this stage, the solution allows for ongoing monitoring of work within the organizational unit.

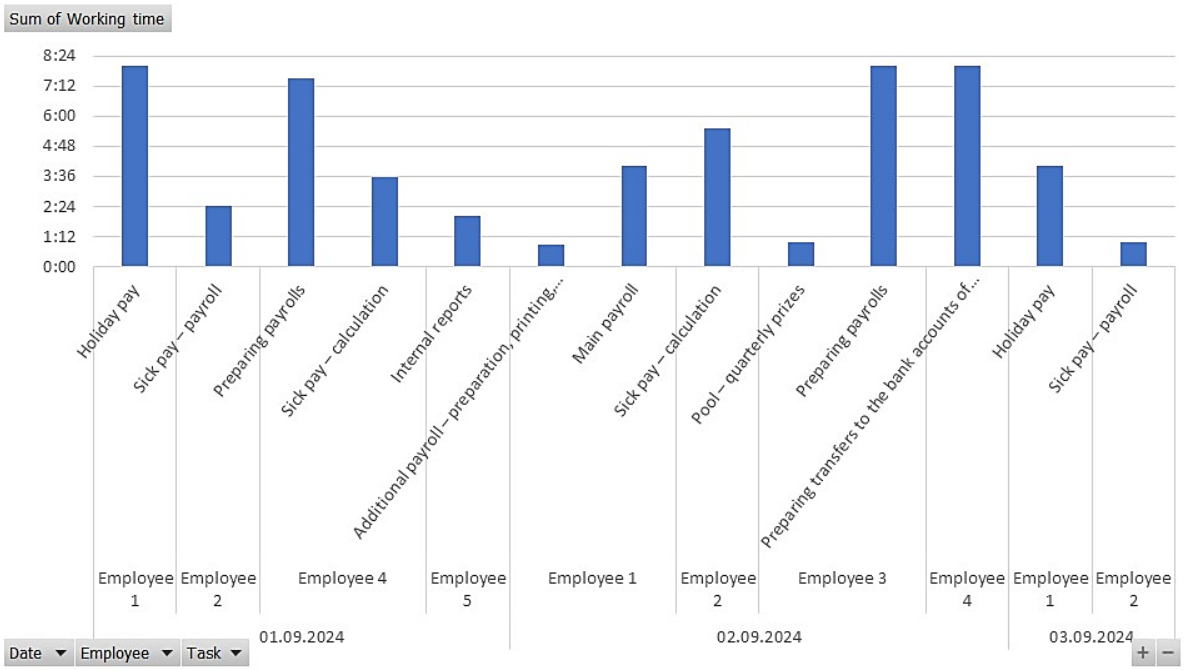

Figure 2. An example of presenting data graphically at the level of a manager and department director.
Source: authors' own work.

The practice of the implementation process has shown that adopting a solution consisting in selecting representative areas of the organization to verify the correctness of the implementation of a new organizational solution brings positive results, although during the implementation process itself, clear limitations were noticed, which include:

1. **Lack of support from the organization's management** for undertaken implementation activities, including, above all, the lack of conviction of department directors to use management methods based on numerical values. As a result of this, and/or directors' reluctance to properly utilize the measurement tool and the resulting data analysis capabilities, the solution may prove to be "dead". It is therefore essential to raise awareness that performance measurement largely serves the directors' actions. Precise definition of results is essential—this cannot be left to "managers' acumen to get things done".
2. **Low level of technical competence among employees**, resulting in errors during the data entry process. During the work, it was observed that using even a simple tool developed in MS Excel can be challenging for employees. Due to difficulties in technically mastering the application, errors occurred relatively frequently, resulting in distorted analysis results.
3. **Low technical competence of management**, making it impossible to generate the summaries and interpret data. When using an MS Excel-based solution, creating a summary of data obtained from individual departments, and then calculating and interpreting indicators, required department managers and department directors to have some MS Excel skills, which they unfortunately did not possess.
4. **Employee resistance** to monitor their tasks. Employees often viewed performance measurement as a threat to their employment stability—a typical case of the "breathe down employee's neck" syndrome. A lack of understanding of the concept of performance measurement led to criticism of the solution and even attempts to block its implementation (including through trade union activity). Consequently, a training cycle was proposed to clarify the goals and guidelines of implementation.
5. **Underestimating the time** required to properly develop appropriate/adequate implementation measures with department employees, as well as the time required to check the correctness of the adopted task granulation**.**

Additionally, lower-ranking issues were also inventoried, but still worth noting:

– the need to correctly identify activities/tasks that should be monitored – in discussions between managers and teams!,
– the need to place greater emphasis on measuring the work and results of a team of employees rather than measuring the work of individual employees performing the same task,

– multi-level task division (task-subtasks); a single-level division will not allow for a holistic, broad view of the area's activities. By introducing a large number of tasks in a drop-down list for the employee to choose from, a single-level division does not allow for proper analysis of processes and tasks with longer execution times.

To sum up, consciously limiting the scope of the implementation to test areas allowed to identify places that require special attention and support when the system is launched across the entire entity.

5. Discussion

Drawing on lessons learned during early testing phase of the model, it was noted that the structure of indicators and reference values should be defined individually for each department. It was also recommended that comparisons of performance between departments and/or their units be considered only after the solution has been fully stabilized. These conclusions align with the issues in selecting and using indicators highlighted by J. Grobelny (2023), including the question of measure validity – that is, the extent to which the result obtained using an indicator accurately reflects the employee's performance level, rather than other phenomena or confounding factors.

Based on the experience from the pilot implementation, it can be assumed that all of the above-mentioned implementation stages require a series of training sessions for employees, department managers and directors as this will present the technical aspects of using the tool and emphasize its importance. Furthermore, it is recommended to correlate the obtained indicator values with the organization's existing motivational system and to modify it accordingly, especially since – as noted by B. Skowron-Mielnik (2009) – companies rarely develop their own remuneration systems, most often adapting solutions from other organizations.

Taking into account the occurrences observed during the implementation process and the comments and limitations mentioned earlier in this article, an improved solution implementation model was proposed, supplemented to the form presented in Figure 3.

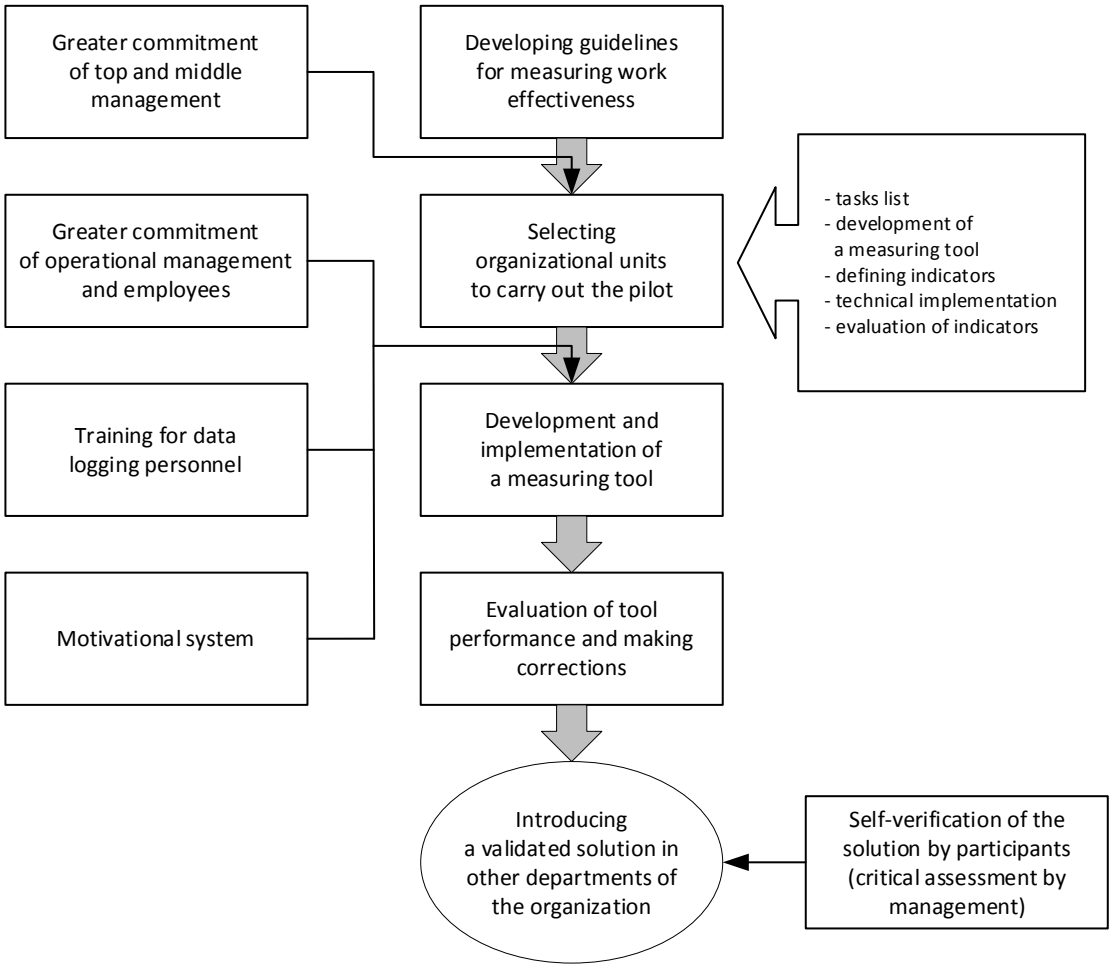

Figure 3. Target model for implementing work monitoring guidelines in a public administration entity. Source: authors' own work.

It's worth noting that IT support is an essential element of the entire process that should be considered. Given the complexity of the activities the entity undertakes, the use of computer software throughout the process is obvious, given that – as J. Woźniak (2021) emphasizes – the development of information and communication technologies has enabled numerous new forms of monitoring, and the emergence of modern tools and observation methods has led to a significant increase in interest among practitioners and researchers in work monitoring. Two basic solutions for the technical implementation of the tool have been proposed:

1. Using the widely used MS Excel program. The employee completes an Excel spreadsheet shared with other department employees, which will be processed manually by the unit head and department director. This solution will require employees to devote time to complete certain amount of data by typing it in. Furthermore, the tool will require work from unit heads and the department director to generate summary reports and indicators (see the limitations mentioned in the previous section).

2. Using dedicated software. The employee will enter the necessary data, but all values will be calculated automatically in the background. Additionally, the interface can be much more user-friendly than MS Excel, reducing the number of potential errors made by employees completing Excel spreadsheets. However, this solution will require financial resources (for buying a license) or executive resources if the application is to be developed in-house.

These conclusions align with B. Evans (2023), who asserts that the effectiveness of measurement depends not only on the implementation of indicators but also on the quality of the tools and their use.

6. Summary

The subject literature emphasizes the importance of measurement and analysis of results, which allows managers to make appropriate decisions and assess progress toward achieving organizational goals. One of the standard management activities is monitoring and assessing work effectiveness, which dates back to the pre-industrial era and is associated with direct observation. It is noted that indicators are a key element of the measurement process. However, because work effectiveness is a complex process, its measurement cannot be based solely on a single indicator.

The aim of this article was to present a practical example of the process of defining and implementing effectiveness monitoring guidelines in a selected public administration entity. This goal was achieved by presenting the experience gained in implementing a systemic approach to collecting and using information about tasks performed by employees of selected organizational units of a public administration entity, as well as presenting a dedicated implementation model for this entity, which could be implemented across the entire organization in the future. Based on the collected experience, critical conclusions were formulated to improve the proposed model, namely:

- support for the organization management, indicating the goals of the implemented solution,
- technical preparation of employees and managers, enabling the correct inventory and processing of information about the tasks being performed,
- proper assessment and identification of those tasks that should be monitored,
- designing a motivational system that takes into account reference values and the achieved values of adopted indicators.

Taking the above considerations into account, the implementation of a work effectiveness monitoring system requires a holistic approach that integrates technical, organizational, and cultural aspects. Only the active involvement of all management levels and employees can ensure lasting and measurable benefits from effectiveness measurement. The proposed model represents a significant step toward improving management processes in public administration and may serve as a benchmark for similar entities seeking to enhance the quality of their operations.

References

1. Becla, A., Czaja, S., Tutaj, J. (2024). *Spory wokół pojęcia efektywności gospodarowania i pojęć pochodnych we współczesnej literaturze i praktyce gospodarczej*. Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.
2. Drucker, P.F. (2006). *The Effective Executive*. New York: HarperCollins Publishers.
3. Evans, B. (2023). *How To Improve Efficiency at Work: Top Tips for 2024*. Retrieved from: https://tettra.com/article/work-efficiency, 14.06.2025.
4. Franco-Santos, M., Lucianetti, L., Bourne, M. (2012). Contemporary performance measurement systems: a review of their consequences and a framework for research. *Management Accounting Research, Vol. 23,* pp. 79-119, https://doi.org/10.1016/j.mar. 2012.04.001
5. Gębczyńska, A., Brajer-Marczak, R. (2020). Review of Selected Performance Measurement Models Used in Public Administration. *Administrative Sciences, Vol. 10, Iss. 4, article 99*, pp. 1-20, https://doi.org/10.3390/admsci10040099
6. Grobelny, J. (2023). *Efektywność zawodowa. Problemy definicji i pomiaru.* Poznań: Wydawnictwo Nauk Społecznych i Humanistycznych Uniwersytetu im. Adama Mickiewicza w Poznaniu.
7. Hammerschmid, G., Löffler, L. (2015). The Implementation of Performance Management in European Central Governments: More a North-South than an East-West Divide. *NISPAcee Journal of Public Administration and Policy, Vol. 8, No. 2*, pp. 49-68, https://doi.org/10.1515/nispa-2015-0008
8. Kalischko, T., Riedl, R. (2024). On the consequences of electronic performance monitoring in organizations: theory and evidence. *Digital Transformation and Society, Vol. 3, No. 1*, pp. 50-79, https://doi.org/10.1108/DTS-10-2022-0054
9. Kohtamäki, V., Olsson, Å. (2023). Performance Management in Public Administration. In: A. Farazmand (Ed.), *Global Encyclopedia of Public Administration, Public Policy, and Governance* (pp. 9324-9329), https://doi.org/10.1007/978-3-030-66252-3_3447

10. Kowal, W. (2013). Skuteczność i efektywność – zróżnicowane aspekty interpretacji. *Organizacja i Kierowanie, No. 4(157)*, pp. 11-23.
11. Malik, K. (2004). *Efektywność zrównoważonego i trwałego rozwoju w wymiarze lokalnym i regionalnym*. Opole: Politechnika Opolska, Wydawnictwo Instytut Śląski.
12. *Mierzenie wydajności pracowników – zobacz 10 powodów dlaczego warto to robić*. Retrieved from: https://timeharmony.pl/mierzenie-wydajnosci-pracownikow-zobacz-10-powodow-dlaczego-warto-to-robic, 29.05.2025.
13. Sakowicz, M., Uchnast-Gara, S., Smala, M., Skalski, T. (2014). *Zestaw wskaźników monitorowania efektywności usług publicznych*. Katowice.
14. Samuelson, P.A., Nordhaus, W.D. (1999). *Ekonomia*. Warszawa: PWN.
15. Sauermann, J. (2023). *Performance measures and worker productivity*. Bonn: IZA World of Labor, Institute of Labor Economics (IZA), doi: 10.15185/izawol.260.v2
16. Skowron-Mielnik, B. (2009). Efektywność pracy – próba uporządkowania pojęcia. *Zarządzanie Zasobami Ludzkimi, Vol. 1, No. 1*, pp. 31-43.
17. Sookdeo, B. (2019). Measuring organisational performance using work measurement: towards improving productivity. *International Journal of Productivity and Quality Management, Vol. 28, No. 4*, pp. 497-510, doi: 10.1504/IJPQM.2019.10018654
18. Stoner, J.A.F., Freeman, R.E., Gilbert, D.R. Jr. (1999). *Kierowanie*. Warszawa: PWE.
19. Szymańska, E. (2010). Efektywność przedsiębiorstw – definiowanie i pomiar. *Roczniki Naukowe Ekonomii Rolnictwa i Rozwoju Obszarów Wiejskich, Vol. 97, No. 2*, pp. 152-164, doi: 10.22630/RNR.2010.97.2.25
20. Ustawa z dnia 27 sierpnia 2009 r. o finansach publicznych (Dz.U. 2024 poz. 1530).
21. Vuong, T.D.N., Nguyen, L.T. (2022). The Key Strategies for Measuring Employee Performance in Companies: A Systematic Review. *Sustainability, Vol. 14, Iss. 21, article 14017*, pp. 1-21, https://doi.org/10.3390/su142114017
22. Woźniak, J. (2021). *Współczesne monitorowanie pracy. Podstawy teoretyczne i metody zastosowania*. Warszawa: Wolters Kluwer.
23. Zbierowski, P. (2017). Społeczna efektywność organizacji – rozważania teoretyczne i propozycja pomiaru. *Przegląd Organizacji, No. 2(925)*, pp. 18-24, doi: 10.33141/po.2017.02.03
24. Ziębicki, B. (2010). Współczesne koncepcje oceny efektywności organizacyjnej – próba porównania. In: T. Dudycz, G. Osbert-Pociecha (Eds.), *Efektywność – rozważania nad istotą i pomiarem, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, Nr 144* (pp. 632-642), Wrocław: Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu.

Appendix

Table 2.
Summary of proposed indicators for the analysis of recorded amounts of working time in the area of wages and salaries

No.	Indicator	Calculation method	Unit of measure	Interpretation
1.	Productivity	$W_P = L_{ZR} / E$	piece/person	L_{ZR} – the number of tasks of a given type completed in a given time period, converted into the number of positions E performing a given type of tasks. - The higher the value of this indicator, the better.
2.	Time taken to complete the task by the employee	$W_{CRZP} = C_P / L_{ZRP}$	minute/piece	C_P – total time spent by an employee on a given type of task in a given time. L_{ZRP} – number of tasks of a given type completed by an employee in a given time. Average time of completing given task by employee. - The lower the value of this indicator, the better.
3.	Task completion time	$W_{CRZ} = C / L_{ZR}$	minute/piece	C – total completion time of a given type of tasks in a given time. L_{ZR} – the number of tasks of a given type completed in a given time period. Average time of completing given task. - The lower the value of this indicator, the better.
4.	Additional work	$W_D = L_{ZD} / L_Z$ x 100%	piece/piece x % = %	L_{ZD} – number of additional tasks (out of the scope) completed in a given time. L_Z – number of all tasks completed in a given time. Percentage of additional work in total work.
5.	Additional work of employee	$W_{DP} = L_{ZDP} / L_{ZP}$ x 100%	piece/piece x % = %	L_{ZDP} – number of additional tasks (out of the scope) completed by an employee in a given time. L_{ZP} – number of all tasks completed by an employee in a given time. Percentage of additional work in total work for individual employees.
6.	Additional work time	$W_{CD} = C_{ZD} / C_Z$ x 100%	minute/minute x % = %	C_{ZD} – time of completing additional tasks (out of scope) completed in given time. C_Z – completion time of all tasks in a given time. Percentage of additional work time in total work time.
7.	Time of employee additional work	$W_{CDP} = C_{ZDP} / C_{ZP}$ x 100%	minute/minute x % = %	C_{ZDP} – time of completing additional tasks (out of the scope) completed by the employee in a given time. C_{ZP} – time of completing all tasks in a given time by an employee. Percentage of additional work time in total work time for individual employees (how much time an employee spends on additional tasks in relation to time spent on all tasks).

Cont. table 2.

8.	Punctuality (of employee)	$W_T = L_{ZNP} / L_{ZP}$ x 100%	piece/piece x % = %	L_{ZNP} – number of tasks not done on time by the employee for his/her own reasons in a given time. L_{ZP} – number of all tasks completed by an employee in a given time. Percentage of the number of overdue tasks in total number of tasks for individual employees. - The lower the value of this indicator, the better. We should aim for it to oscillate around 0%.
9.	Efficiency (of employee)	$W_W = L_{ZRP} / T_{EP}$	piece/h	L_{ZRP} – number of tasks of a given type completed by an employee in a given time. T_{EP} – employee effective working time in h (i.e. after taking into account the absences) in a given time. The number of tasks of a given type performed by a given employee during 1 hour of his/her work. - The higher the value of this indicator for particular tasks, the better (for an individual employee there will be as many indicators as the number of different types of tasks performed). Important! We do not sum up the indicator values because they refer to incomparable tasks. For individual employees, we can see how many pieces they produce for specific tasks within 1 hour of their work. It is possible to compare the performance of different employees for the same tasks.
10.	Work quality	$W_{JP} = L_{ZB} / L_Z$ x 100%	piece/piece x % = %	L_{ZB} – number of corrections made due to own errors in a given time. L_Z – number of all tasks completed in a given time. Percentage of work related to correcting own errors in the total work. - The lower the value of this indicator, the better. We should aim for it to oscillate around 0%.
11.	Employee work quality	$W_{JP} = L_{ZBP} / L_{ZP}$ x 100%	piece/piece x % = %	L_{ZBP} – number of corrections made by an employee resulting from his/her own errors in a given time L_{ZP} – number of all tasks completed by an employee in a given time. Percentage of work related to correcting own errors in the total work for individual employees. - The lower the value of this indicator, the better. We should aim for it to oscillate around 0%.