Abstract: The main purpose of the study was to assess importance of the cost planning process in the procedure of applying and the practice of spending EU funds by state universities in Poland. In pursuit of this goal, the literature and EU guidelines were analysed, and a survey of EU project managers at state technical universities was additionally carried out. During the study, reference was made to issues such as determining resources needed to implement an EU project, ensuring financing for their own contribution and ineligible costs. The literature studies, the analysis of programming documents of the current financial perspective and the results of the survey, indicate the key role of cost planning in the effective acquisition and settlement of projects co-financed from EU funds. The expected reduction of EU funds for Poland under subsequent financial perspectives will result in further difficulties in obtaining funding. In order to increase the absorption capacity of EU funds, state universities should pay special attention to the cost planning process, providing project initiators with specialized support in budget construction and justification of planned costs.

Keywords: planning, costs, EU projects, state universities.

1. Introduction

EU funds play an important role in supporting the development of universities in Poland. By December 31, 2023, it will be possible to spend funds under the ending financial perspective for 2014-2020. There is also another programming period ahead, and a new financial envelope for 2021-2027. It is expected that the allocation of funds for Poland within this financial perspective will decrease, but it is certain that the funds directed to universities will also be available, although obtaining them
may be more difficult. That is why research is important to increase the absorption capacity of state universities in Poland.

Acquiring co-financing from European Union funds is associated with the need to prepare a grant application, of which the project budget is an important part. At the stage of applying for funds, the appropriateness of budget preparation and the legitimacy of costs indicated is one of the evaluation criteria. However, at the stage of project implementation and settlement it is one of the factors determining the eligibility of the costs incurred.

Cost planning requires determining the resources necessary to implement the project. In the current financial perspective, many of the competitions also required public entities to make their own contribution to supplement the eligible costs. All this indicates that in the next financial perspective this obligation will be maintained, and it is also possible to increase the share of beneficiaries’ own funds in financing these costs. The implementation of EU projects may also involve the need to incur ineligible costs, i.e. costs that cannot be covered by co-financing. It should be emphasized that one of the conditions for the eligibility of the costs in the project is their earlier inclusion in the approved grant application. This means that an expense that was not planned in the project budget cannot be considered eligible. Thus the article attempts to assess the importance of the cost planning process in the procedure of applying and the practice of spending EU funds by state universities in Poland.

In pursuit of the research goal, a literature analysis, eligibility guidelines and a survey were carried out. The first part of the study presents the theoretical aspects of the cost planning process in these projects. The next part describes the research methodology used by the author. Then, an analysis of the results of the survey conducted among EU project managers at state technical universities was presented. The last part contains a summary of the presented research results and indicates directions of future activities aimed at increasing the absorption capacity of EU funds by state universities.

2. Costs as an object of planning

Project management is a complex process (Padalkar & Gopinath, 2016) requiring the consideration of aspects such as cost, time, quality, risk, personnel and communication (Carr & Tah, 2001; Jun, Qiuzhen, & Qingguo, 2011; Manikowski, 2013; Sanderson, 2012). When planning the costs of an EU project, one must be particularly careful because if the budget is exceeded, these costs will have to be covered by the university’s own resources, similarly as their own contribution and ineligible costs.

Organization costs are a monetary reflection of the use of resources and objects of work and the workforce (Kiziukiewicz, 2012). Expenditure, on the other hand, is an outflow of cash. In accordance with the guidelines on the eligibility of expenditures in the current perspective, in the case of EU projects one uses the concept of eligible expenditures, which are considered to be the costs or expenses incurred in connection
with the implementation of the project that meet certain eligibility conditions. One of these conditions is the inclusion of a given cost/expenditure in the project budget or in material scope of the project as part of the application for project co-financing (Minister Inwestycji i Rozwoju, 2019).

The costs in EU projects are recognized either as direct costs or indirect costs. Direct costs are costs for which there is a direct cause and effect relationship between the cost object and the cost, therefore these are costs that can be directly assigned to a given project based on source documents. On the other hand, indirect costs are those costs for which there is no direct cause-and-effect relationship between cost object and the cost, hence they cannot be directly related to a given project based on source documents. This assignment is made only on the basis of appropriate allocation keys (Biadacz, 2011).

Budgeting, i.e. project cost planning, plays an important role in the project planning process (Klinowski, 2017a). In the case of projects co-financed by the European Union, cost planning relates to direct costs, whilst indirect costs in the current financial perspective in most cases constitute a lump sum calculated on direct costs. As part of the cost planning process, three stages can be identified (Klinowski, 2017b):

- resource planning, i.e. determining the resources necessary to implement the tasks assumed in the project,
- cost estimation, i.e. cost estimation of the acquisition of the planned resources,
- creating a cost budget, i.e. assigning the estimated costs to the tasks planned to be implemented under the project.

One more important element of project cost planning can be identified, namely project budget optimization (Tonchia, 2018). Since an EU project budget is one of the elements of assessment, it is worth optimizing the planned costs so that they are adequate and justified for the implementation of the tasks planned within the project.

The preparation and implementation of EU projects is a complicated process that for public entities is strongly formalized. Competition regulations require to determine costs in accordance with university rules and to take measures to ensure they do not exceed market prices. For purchases, this means estimating prices by obtaining offers from potential suppliers. Unfortunately, the process of cost estimation takes place before submitting the application for funding, and costs are incurred sometimes even several years later. In addition, after receiving co-financing, the beneficiaries are obliged to make competitive purchases, which means that it is impossible to determine at the stage of budget planning what offer will be selected and what will be its final cost (Dziadek, 2015).

As the literature analysis shows, the process of planning costs in projects plays a very important role in obtaining financing as well as during the subsequent implementation of the project. It is therefore reasonable to provide support to project initiators in the cost planning process at the stage of preparing applications for co-financing. This support may come from project management offices operating at
universities (Chluska & Szczepaniak, 2017). The creation of a project management office is aimed at increasing the efficiency of the entities’ operations by centralizing all tasks directly related to project management in the organization. Thanks to this, it is possible to accumulate theoretical and practical knowledge and its subsequent use in subsequent projects contributing to increasing their performance (Klinowski, 2013; Ko & Kim, 2019; Jonas, Kock, & Gemuenden, 2012; Unger, Gemünden, & Aubry, 2012).

3. Research methodology

The main subject of the research was focused on state technical universities in Poland. In total, 18 universities included in this group operated in Poland in the examined period. A survey was conducted among managers of EU projects implemented at these universities in the previous financial perspective. Out of 659 projects that state technical universities implemented alone or as part of a consortium where they performed the role of a leader, projects for the study were randomly selected. The selection of the respondents for the study was of a purposefully random nature; 20% of the projects meeting the above criteria were selected from each state technical university. Systematic sampling was adopted as the sampling scheme. The sample thus obtained is a result of choosing every $k$-th unit from community. In this study, $k = 5$ was used. The survey was prepared in an online form and then posted on the webankieta.pl platform. A total of 132 invitations were sent to complete the survey, of which 85 respondents fully completed the questionnaire, which meant a relatively high response rate of 65%.

4. Research and findings

In the case of EU projects, the key document specifying the costs that may be incurred is the project budget, also referred to as the material and financial schedule, which is part of the application for funding submitted to the appropriate intermediary institution in transferring funds. EU project managers were asked how strongly the decisions taken at the cost planning stage influenced the subsequent implementation of the project. The results obtained are presented in Fig. 1.

The project budget is an obligatory element of every grant application. Particular emphasis placed under EU projects on the implementation of the project in accordance with the adopted budget is also visible in the evaluation of the strength of the impact of the decisions taken at the stage of planning the project budget on its subsequent implementation. The EU project managers identified the impact of the decisions taken at the planning stage of the project budget as very strong or strong, totaling 95.3% of the answers received. The remaining 4.7% rated this impact as moderate. Importantly, none of the surveyed managers indicated limited or no impact. Such a strong impact is mainly due to the very notable difficulties of financing costs that
were not included in the project budget, even if there are savings on planned categories.

EU projects involve various types of resources. Table 1 shows how resources necessary for the implementation of this type of projects at the examined universities were determined. It should be emphasized that the definition of the resources necessary for implementing EU projects takes place at the stage of the preparation of the application for co-financing, which confirms the important role of the decisions taken at the stage of project planning.

Table 1. Ways to determine resources for the project

| How were the resources for project determined?                                      | Number | Share (in %) |
|------------------------------------------------------------------------------------|--------|--------------|
| Estimation based on previous project resources                                     | 43     | 50.6         |
| Opinion of experts, including future project contractors                           | 33     | 38.8         |
| Hard to say                                                                         | 5      | 5.9          |
| Other                                                                              | 4      | 4.7          |

Source: own study based on research, *n* = 85.

Over half of the respondents (50.6%), indicated that resources for their project were estimated based on the amount of resources in the previous projects. In contrast, 38.8% of EU project managers used the opinions of experts, including future project
contractors, to determine the project’s resources, whilst 5.9% of the respondents could not precisely indicate any method of determining project resources. The remaining 4.7% pointed to other ways of determining resources for the project, such as market research or their own analyses to determine the resources for the project.

The implementation of EU projects is increasingly associated with the need for universities to make their own contribution. The respondents (25 out of 85), who during the survey indicated that their projects required their own contribution, were asked to indicate how they had financed their own contribution to the project at their university. The results obtained are shown in Table 2.

Table 2. Forms of financing the university’s own contribution to EU projects

| How did your university finance its own contribution to the project? | Number | Share (in %) |
|------------------------------------------------------------------|--------|-------------|
| From the rector’s reserve                                       | 6      | 24.0        |
| From the faculty’s resources                                    | 10     | 40.0        |
| From the university’s allocated funds to finance own contribution of projects | 4      | 16.0        |
| Other                                                            | 5      | 20.0        |

Source: own study based on research, \( n = 25 \).

The coverage of their own contribution was most often provided (40% of responses) by departments from their own resources. In 24% of the projects, their own contribution came from the rector’s reserve, while 16% of the examined projects used funds allocated to finance their own contribution. Among other answers, the respondents pointed primarily to financing their own contribution in part from the university and in part from their faculty. It can be pointed out that state universities have limited possibilities to contribute to the project. It is therefore important at the budget preparation stage to plan their own contribution so that it is the least-felt burden for the university at the project implementation stage, e.g. if possible their own contribution can be made in the form of teaching rooms.

In addition to funds to secure own contribution to the project, universities must also be prepared for the fact that during implementation, part of the project costs may be considered ineligible. In addition, if the cost planning process was not carried out correctly, it may be necessary to incur costs, during the implementation of the project, that were not foreseen at the budget stage and which may be considered ineligible.

Ineligible costs result in the need to reimburse co-financing received and cover the costs incurred from the beneficiary’s own resources. The respondents (35 out of 85) who indicated during the survey that the implementation of their projects involved incurring ineligible costs, were asked to indicate the sources of coverage for these costs. The answers received are shown in Table 3.
The resulting ineligible costs were financed in 60% of the examined EU projects from the departments implementing these projects. In the case of 22.9% of projects to cover ineligible costs, the funds allocated for financing ineligible costs were used at the university. An important source of financing ineligible costs were also funds from the rector’s reserve of the university, which was used in 14.3% of the examined projects. With limited possibilities to cover ineligible costs, state universities should pay special attention to the planning process so that all necessary costs are included in the project budget.

5. Conclusion

State universities in Poland are mainly financed from the state budget, and they can also obtain funds from fees or their research activities. Poland’s accession to the European Union opened a way for universities to obtain significant funds from European funds, however as these are limited and the competition among potential beneficiaries is very high, it is necessary to increase the absorption capacity of state universities as well as increasing the efficiency of using EU funds.

The starting point for determining the project budget should always be the substantive scope of works planned for the implementation in the project. In contrast, cost settlement should be based on the material progress of the project. In this way, it is possible to determine the progress of the work based on the value of the costs incurred, which reflect the material and financial progress in the project.

The correct preparation of the project budget is one of the necessary elements of a positive evaluation of the grant application. Obtaining the maximum score for the assessment of the budget preparation and the justification of costs can be one of the elements of building competitive advantage of state universities in applying for funding from the European Union.

The research results indicate the limited possibilities of making the own contribution and covering ineligible costs by state universities. It should be noted that the planning process can significantly reduce the involvement of the university’s own funds by choosing the appropriate form of its own contribution. At the
implementation stage, the appropriateness and feasibility of the developed budget will also determine whether the planned funds will be sufficient to implement the tasks planned in the project. This reduces the need for universities to make their own contribution at a higher level than that required by the project documentation. Furthermore, it depends to a large extent on the cost planning process whether these costs will be considered eligible. In this way, it reduces the risk of the ineligibility of the costs and the need to cover them from their own resources.

The results of the conducted literature studies and the author’s own research clearly show that universities interested in increasing their absorption capacity of EU funds should pay special attention to the cost planning process, providing project initiators with specialized support in budget construction and the justification of planned costs. This support can be provided by the existing project management offices at universities, or other units with specialist knowledge of cost planning in EU projects.

References

Biadacz, R. (2011). Rachunek kosztów – wybrane zagadnienia teoretyczne. Częstochowa: Wydawnictwo Wydziału Zarządzania Politechniki Częstochowskiej.

Carr, V. i Tah, J. H. M. (2001). A fuzzy approach to construction project risk assessment and analysis: construction project risk management system. Advances in Engineering Software, 32(10-11), 847-857.

Chłuska, J., & Szczepaniak, W. (2017). Rola jednostek wspierających zarządzanie projektami unijnymi w publicznych uczelniach technicznych. Studia Ekonomiczne. Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach, (341), 71-81.

Dziadek, K. (2015). Wykorzystanie budżetowania w zarządzaniu projektami unijnymi – wyniki badań. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 399, 176-185.

Jonas, D., Kock, A., & Gemuenden, H. (2012). Predicting project portfolio success by measuring management quality – a longitudinal study. IEEE Transactions on Engineering Management, 60, 1-12.

Jun, L., Qiuzhen, W., & Qingguo, M. (2011). The effects of project uncertainty and risk management on IS development project performance: A vendor’s perspective. International Journal of Project Management, 29(7), 923-933.

Ko, J. H., & Kim, D. (2019). The effects of maturity of project portfolio management and business alignment on PMO efficiency. Sustainability, 11(1), 1-16.

Klinowski, M. (2013). Biuro wsparcia projektów jako nowy wymiar rachunkowości zarządczej. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 291, 238-245.

Klinowski, M. (2017a). Uwarunkowania dla budżetowania kosztów projektów. Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu, 471, 194-202.

Minister Inwestycji i Rozwoju. (2019). Wytyczne w zakresie kwalifikowności wydatków w ramach Europejskiego Funduszu Rozwoju Regionalnego, Europejskiego Funduszu Społecznego oraz Funduszu Spójności na lata 2014-2020. Retrieved from https://www.funduszeeuropejskie.gov.pl
Padalkar, M., & Gopinath, S. (2016). Six decades of project management research: Thematic trends and future opportunities. *International Journal of Project Management, 34*(7), 1305-1321.

Sanderson, J. (2012). Risk, uncertainty and governance in megaprojects: A critical discussion of alternative explanations. *International Journal of Project Management, 30*(4), 432-443.

Tonchia, S. (2018). *Industrial project management*. Berlin: Springer-Verlag.

Unger, B. N., Gemünden, H. G., & Aubry, B. (2012). The three roles of a project portfolio management office: Their impact on portfolio management execution and success. *International Journal of Project Management, 30*, 608-620.

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**PLANOWANIE KOSZTÓW W PROJEKTACH UNIJNYCH NA UCZELNIACH PUBLICZNYCH**

**Streszczenie:** Głównym celem opracowania była ocena ważności procesu planowania kosztów w procesie aplikowania i wydatkowania środków unijnych przez uczelnie publiczne w Polsce. Dążąc do jego realizacji, dokonano analizy literatury oraz wytycznych unijnych, przeprowadzono również badanie ankietowe wśród kierowników projektów unijnych zrealizowanych w publicznych uczelniach technicznych. W trakcie badania odniesiono się do takich kwestii, jak: określenie zasobów niezbędnych do realizacji projektu unijnego, zapewnienie finansowania wkładu własnego oraz kosztów niekwalifikowalnych. Przeprowadzone studia literaturowe, analizy dokumentów programowych obecnej perspektywy finansowej oraz wyniki badania ankietowego wskazują na kluczową rolę planowania kosztów w skutecznym pozyskiwaniu i rozliczaniu projektów dofinansowanych ze środków unijnych. Spodziewane zmniejszenie środków unijnych dla Polski w ramach kolejnych perspektyw finansowych spowoduje, że pozyskanie dofinansowania stanie się jeszcze trudniejsze. Uczelnie publiczne w celu zwiększenia zdolności absorpcyjnej środków unijnych powinny szczególną uwagę poświęcić procesowi planowania kosztów, zapewniając inicjatorom projektów specjalistyczne wsparcie w konstrukcji budżetu i uzasadnieniu zaplanowanych kosztów.

**Słowa kluczowe:** planowanie, koszty, projekty unijne, uczelnie publiczne.