

HR CONTROLLING IN PROJECT MANAGEMENT – SELECTED ISSUES

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Purpose: The aim of the article is to provide a broader context for the discussion on the significance and role of HR controlling in project management. Despite being a type of project controlling, it appears to be overlooked in the existing literature. The objective of the authors is to “demystify” these problems to some extent and show why personnel-related issues should also be a major area of interest for those responsible for developing the project information flow system, both in terms of strategic and – above all – operational controlling.

Design/methodology/approach: The article is cross-sectional, based on a literature review and desk research technique.

Findings: The cross-sectional approach and literature review employed in this study have contributed to a comprehensive understanding of HR controlling in project management. It is imperative for project managers and stakeholders to recognize the value of HR controlling and employ appropriate tools and techniques to ensure the successful implementation of projects.

Originality/value: This paper has provided an in-depth exploration of HR controlling within the context of project management. By shedding light on the significance and role of HR controlling, it underscores the importance of personnel-related matters in the overall project management process.

Keywords: HR Controlling, human resources, project management, desk research, tools and techniques.

Category of the paper: General review.

1. Introduction

Controlling is a concept that has gained popularity in the management literature in recent times (Bracci et al., 2022; Laitinen, 2023; Sahudi et al., 2022; Schwolgin, 2022). Defining controlling is challenging due to its abstract nature, etymology, and interdisciplinary origin (Messner et al.,

2008). Traditionally, controlling is often considered as a unit in the organizational structure of a company and related to financial reporting (Doyle et al., 2007; Perovic et al., 2012).

However, a contemporary perspective on controlling identifies it as an instrument of the management system that includes planning, control, monitoring of goal achievement indicators, analysis, and interpretation of information (causes of deviations) (Horváthová, Mokrišová, 2021). Its main goal is to ensure efficiency in all areas of the company's functioning by integrating separate control functions into a coherent whole, which distinguishes them from control processes often carried out by autonomous units of the organization and related to a limited area of its activity (Harasheh, Provasi, 2023).

Compared to the vast literature on organizational controlling (Vlasenko, Gaytmazov, 2023; Secchi, Seri, 2017), project controlling is still an issue that is insufficiently represented in the subject literature both in Poland (Cabała, 2002; Łada, Kozarkiewicz, 2007; Niedbała, 2008; Głodziński, Marciniak, 2016; Bukłaha, 2019) and abroad (Kapuganti et al., 2019; Trzeciak, Jonek-Kowalska, 2021; Trzeciak, 2022). Analysis of relevant publications (Lin, 2002; Grishunin, Suloeva, 2015) indicates that project controlling mostly involves coordinating the basic functions of project management processes, such as planning, organizing, motivating, and controlling. In this study, the authors defined project controlling as a subsystem of management (a set of methods, procedures, and techniques) that provides decision support with appropriate managerial information at important decision-making levels in the project, considering the various stages of its implementation. Regarding projects, controlling should also involve providing current and transparent information (Brady et al., 2018) necessary to take remedial action to avoid or mitigate deviations from the assumed costs and schedule (Martens, Vanhoucke, 2019), as well as optimizing the use of available resources (Ulusoy et al., 2021). This approach should also extend to the variance analysis concerning quality plans or project risks.

In addition to the areas of controlling mentioned above, personnel controlling also plays a significant role. Furthermore, personnel issues should also be the main area of interest for those responsible for developing the information flow system in the project, both in terms of strategic and operational controlling. HR controlling is the process of identifying, measuring, and monitoring key aspects of human resource management to ensure that a company's human resources are in line with its strategic goals. Moreover, in the implementation of projects, HR controlling supports the determination of the required number and quality of personnel (Monika, Mariana, 2015), assessment of their competencies and development needs (Dwivedula, 2019), ensuring their motivation and involvement in the project (Trzeciak, Banasik, 2022), and monitoring their performance and effectiveness (Kerzner, 2022).

In connection with the above, the aim of the article is to discuss the issue of HR controlling in project management. The article presents a broader context for understanding the importance and role of HR controlling in the project management process. Although HR controlling is one of the types of projects controlling, it is often neglected in comparison to other issues such as

financial control, resource management, or scope of work. The article analyzes what project management controlling is, types of project management controlling, what is meant by personnel controlling, and the elements of personnel controlling involved in project implementation. The article also discusses the most commonly used HR controlling tools in project management. The article is cross-sectional, based on a literature review and desk research technique. Furthermore, the authors aim to "demystify" HR controlling issues and show why personnel issues should be the main area of interest for those responsible for the development of the project information flow system, both in terms of strategic and operational controlling.

2. Materials and Methods

This paper aims to delve into the discussion of HR controlling issues within the specific context outlined below. Firstly, it seeks to provide an understanding of project management controlling, including its definition and various types. Secondly, it explores the concept of HR controlling, elucidating its meaning and examining the elements of HR controlling that are involved in project implementation. Lastly, it investigates the most commonly used HR controlling tools in project management.

By effectively addressing these multifaceted issues, the fundamental objective is to establish a comprehensive framework that enables a holistic grasp of the significance and role of HR controlling in the overarching project management process. Remarkably, despite being classified as a subtype of project controlling, HR controlling seems to have received limited attention in the existing literature, particularly when juxtaposed with other domains such as finance, resource management, or scope control.

Consequently, the authors endeavours to demystify these issues to a certain extent and underscore the rationale behind the imperative need for conscientiously addressing personnel-related concerns by individuals entrusted with the development of the project information flow system. Both strategic and operational dimensions of controlling are emphasized, underscoring the pivotal importance of efficaciously managing HR-related matters.

To achieve these goals, the authors posed the following research questions:

1. What is the definition of project management controlling and what are the different types of project management controlling?
2. How can HR controlling be defined and what are the specific elements of HR controlling that are involved in project implementation?
3. Which HR controlling tools are commonly used in project management?

By considering the chosen deductive approach, this article employs a cross-sectional methodology (Zangirolami-Raimundo et al., 2018) and heavily relies on conducting a thorough literature review and desk research (Wahid et al., 2023; Guerin et al., 2018). These research techniques offer a robust basis for exploring and analysing the extensive knowledge base concerning HR controlling in the realm of project management. Consequently, they greatly contribute to fostering a comprehensive comprehension of the subject matter at hand.

3. Place and role of controlling in project management and the types of controlling

It is only recently that the modern view of controlling as a management support concept has emerged in economic literature. Producing a definition of the concept of controlling poses a certain challenge, due to its abstract nature, etymology, and interdisciplinary origins, and depends for instance, on the scope of activities, it covers in an organisational unit. Traditionally, it is most often regarded as a unit within the organisational structure of the company and associated with financial reporting. However, the modern perspective on controlling identifies it as an instrument of the management system, which comprises planning, steering, control (goal achievement indicators), and analysis and interpretation of the information obtained (reasons for deviations). Its main purpose is to ensure efficiency in all areas of a company's operations by integrating isolated control activities into a coherent whole, which distinguishes it from control processes, often performed by autonomous units of an organisation and concerning a limited area of its operations.

Compared to the wealth of literature on organisational controlling, project controlling is still an issue that is under-represented in expert literature, both in Poland and abroad. An analysis of relevant publications indicates that project controlling most often involves coordinating the basic functions of the project management process (planning, organising, motivating, and controlling). An overview of the ideas of selected Polish and foreign authors on the issues of controlling in project management is presented below.

Table 1.
Selected definitions of project controlling

Author	Year	Definition of controlling
Z. Bass	2016	An independent system supporting the implementation of review and control procedures throughout the project implementation period. The purpose is to increase the efficiency of work and to constantly review the formal goals of the project (its business case) as defined at its pre-implementation phases.
R. Fiedler	2016	Supporting the project management process by structuring and continuously reviewing project milestones and tasks, and by promoting project planning and control – improving sound project decision making.

Cont. table 1.

P. Gudda	2011	A management subsystem that plays a key role in a project implementing organisation with regard to the selection of appropriate data to assist in steering and monitoring the ongoing project progress, as well as its interim and key results. Unlike monitoring, it should specify the means of collecting, analysing and interpreting such data to provide a reliable and detailed basis for making sound decisions about ongoing projects.
H. Kerzner	2009	A three-step process involving: measuring progress from the start of the project until its final result, evaluation of work progress, and adoption of corrective and remedial actions (correcting) so as to achieve the intended goal or even exceed the expectations set for the project. Through these measures, it is possible to achieve the defined goals, and with regard to project problems, to take effective anticipatory or corrective actions.
S. Marciniak and P. Gołoś	2013	An integrated management subsystem including planning, steering, control, and information functions, supporting the adaptation and coordination of the entire project management system. In their view, it consists of planning, reporting and steering parts.
A. Preissner	2003	A comprehensive project control concept consisting of planning, control, information supply and work coordination elements which goes beyond simple project control activities.

Source: own work.

The above definitions have at their core an interdisciplinary and coordinating function to support decision-makers in making managerial decisions in projects. In view of the above perspectives, the authors will consider project controlling as a management subsystem (a set of methods, procedures and techniques) that provides support for the decision-making process with relevant managerial information at the important decision-making levels in the project, with respect to the various phases of its implementation (More on this in: Bukłaha, 2019, pp. 63-64). With regard to projects, controlling should include the provision of up to date and transparent information necessary for adopting countermeasures to avoid or mitigate the deviation of the assumed costs and timeline, as well as to optimize the use of the available resources.

In literature, there is no precisely defined way to break down controlling and classify project evaluation perspectives from a controlling viewpoint. For the purposes of this study, the authors have adopted three forms of breakdown: by project status assessment, by planning limits and scope, and by major project control areas.

Viewed in terms of assessment profiles, project controlling can be broken down into the following perspectives:

- simplified – a comparison of the desired (target) status with the actual status,
- comprehensive – a system of mutually defined undertakings, principles, methods and techniques for an internal control and monitoring system, oriented towards achieving the set result,
- visual – the process of business navigation and control by means of a plan lays out the destination,
- abstract – an integrated supervision, planning, monitoring and information system that supports the adaptation and coordination of the entire management system (Kardasz, Kęs, 2004).

Due to the limits and scope of project activity planning, a distinction can be found in literature between strategic (long-term) and operative (operational, ongoing) controlling.

Strategic project controlling deals with assessing the strengths and weaknesses of projects in relation to the organisation's current development strategy. It examines the preliminary feasibility of projects, evaluates their cost-effectiveness and efficiency from the point of view of the adopted guidelines, develops project ranking lists, and analyses the convergence of their goals with the strategic objectives of the organisation. Strategic controlling makes use of such tools as (Łada, Kozarkiewicz, 2007, pp. 32-33):

- strategic evaluation of the project (multi-faceted assessment of the effectiveness of the project, taking into account external and internal conditions),
- analysis of the project's value for the customer (used to determine the final price of the project using the 'arm's length' method),
- target project costing (determination of the scope, quality and timing of the project based on the cost of the project and its target price),
- project life cycle costing (project cost analysis considering, apart from the implementation phase, also the phase of the use of project deliverables),
- cost analysis in the project value chain (i.e., the value and costs at all phases of project development, implemented both inside and outside the organisation),
- project portfolio analysis (value and cost analysis in which projects are considered as part of the overall portfolio of related projects),
- measuring project performance, e.g., by means of the Balanced Scorecard (an in-process assessment of whether a project is delivering the expected benefits).

The techniques used in controlling and the methods of evaluating the project effectiveness are not going to be discussed in detail in this paper. More information on them can be found e.g., in: Vollmuth (2007), Rogowski (2004), Łada, Kozarkiewicz (2007).

These control tools allow better development of the portfolio of implemented projects, understanding of actual expectations of customers in terms of the scope, quality, and cost of projects, and the determining of the impact potential of stakeholders, risk analysis, etc. The tools and techniques used in strategic controlling, whether for projects or recurring activities, are expected to increase the possibilities and opportunities for ensuring the long-term and stable existence of the organisation and making sound strategic decisions.

Operational (operational, ongoing) project controlling is oriented towards regulating the implementation of projects within a short timeframe (usually up to one year). It focuses on planning, execution and control of projects selected for implementation at the strategic controlling phase. It is most often based on an analysis of cost-revenue-profit and revenue-expenditure relationships. The tools typical of operational controlling of projects include (Łada, Kozarkiewicz, 2007, pp. 32-33):

- planning how the project will proceed and the cost (determining the expected financial impact resulting directly from the implementation of the project),
- evaluation of the financial performance of the project (analysis of the financial costs and benefits of the project),
- reporting for decision-making purposes (a set of information to help make decisions about sourcing and allocating resources to the project),
- recording and accounting for the team's work and resources used against the project's baseline plan,
- recording and accounting for project costs (systematic measurement of the actual financial effects of implemented projects),
- budgeting and review of budget implementation (analysis of the actual financial effects of projects against their baseline budget),
- follow-up project analysis (the so-called post-audit, analysis of actual costs and benefits of project implementation, both financial and non-financial; project lessons learned survey).

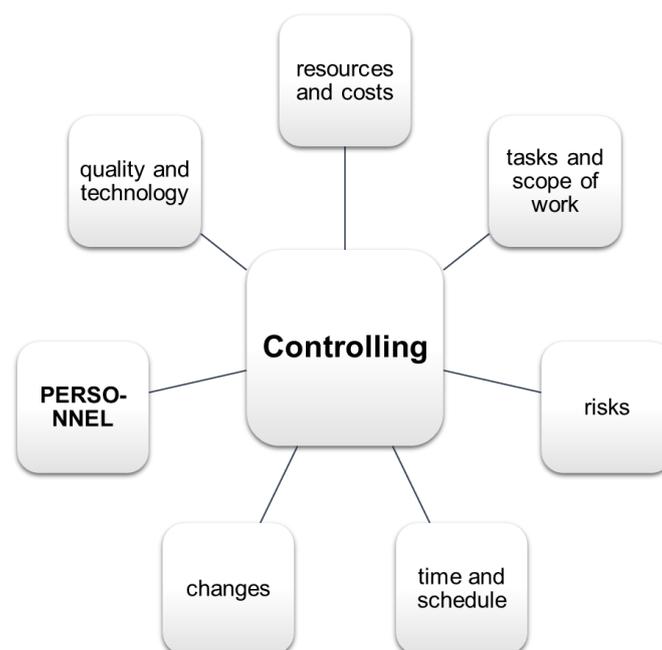


Figure 1. Selected areas of project controlling.

Source: own work.

Operational project planning is a continuation of the strategic planning process. It relates primarily to the project implementation phase, providing a starting point for the implementation of operational plans for projects, in line with the organisation's strategic goals. It is not focused on a project's efficiency but on its implementation (feasibility) in line with strategic goals, considering external and internal constraints (stakeholder analysis, risk analysis, etc.). Strategic controlling guidelines are largely the responsibility of the organisation's management or their authorized units, while operational controlling falls within the domain of project

managers and (less frequently) project team members. In addition, both strategic and operational project controlling in financial terms rely heavily on the results of the organisation's strategic and operational budgeting process.

The third way of breaking down controlling (by significant areas covered in the project) is presented below.

This form of breakdown focuses on the key areas to be evaluated, relevant *en bloc* **primarily in operative controlling of the project**. This is due to the fact that, firstly, strategic controlling deals with the evaluation of projects at a much higher level of generality and, secondly, the project manager or project supervisors need a wide range of information for the ongoing control and monitoring of work specified in the task schedule of the current phase (and the forthcoming phases) of the project. They may not focus solely, for example, on the scope and cost of tasks performed, as otherwise the exclusion of other evaluation elements from the scope of the review could lead to critical deviations, disrupting or even preventing the achievement of key project goals. The major areas in which controlling is employed in projects include (Kendrick, 2012):

- budget, costs, and liquidity,
- availability of resources and resource intensity of work,
- schedule, work completion time, and milestones,
- planned and actual scope of work,
- quality of interim and final deliverables of the project,
- work execution technology,
- risks and project issues, especially in the implementation phases,
- project team and personnel considerations in the project,
- project changes and transformations.

Being aware of the multiplicity of the issues listed above, for the purposes of this paper, the authors will focus on the section below on the issue of HR controlling in projects.

4. HR controlling and how it is employed in project management

Human resource management controlling is an integral part of controlling as a business management concept and is referred to as HR controlling (Zajac, 2006). Its chief objectives are planning, analysing, supervision, evaluation, control, and decision-making regarding the HR aspects of the controlled activities. It is used to improve the deployment of human resources and achieve the best possible profits for the organisation. It accounts for combining two policies, human resources policy and economic policy, within the organization (Paździor, Paździor, 2016). The principal tasks of HR controlling can include co-development, support, and coordination of human resource management processes throughout the organisation or in

its selected areas (Zajac, 2011; Kuepper et al., 2013). It serves two basic functions: informational (preparation and management of information in the process of personnel decision-making) and coordinating (regarding the deployment of human resources in the organisation to the extent subject to controlling procedures).

While much has been written to date about HR controlling in an organisation as such, a review of the literature (Polish and foreign publications from the last ten years) has revealed an almost complete absence of scholarly publications in the field of personnel project controlling (in other words, human resource controlling). The authors were not able to find during the literature survey a single book, monograph, or textbook on the above topic, thus this seems to be a promising research field for future exploration. Fortunately, given the universality of many recommendations in the field of HR controlling in the organisation, at least some of them can be extrapolated to the problem of project management. As a result of the summaries made, the authors identified the individual elements of HR controlling in projects, as described in Table 2.

Table 2.

Selected elements of HR controlling vs. project management cycle.

Project management phase	HR controlling elements	Intensity of controlling activities in relation to HR controlling
initiation and definition	<ul style="list-style-type: none"> • establishment of the Steering Committee or its equivalent, • identification of key project stakeholders (including the principal, sponsor, key contractors, beneficiaries and users, others), • determination of project requirements as a basis for further detailed analysis at the planning phase 	low
planning	<ul style="list-style-type: none"> • identification of required competencies for project positions, including behavioural, technical, and contextual competencies of the project manager, relevant for the controlling process, • appointment of the project manager and providing them with guidance on the project and with adequate decision-making authority, • recruitment, selection, and adaptation of team members, • organisation of the project team and the ways to motivate it, • selection of the project organisation form, • setting the rules of functioning of and communication in the team, • setting the rules of cooperation between the team and those in the proximity of the project, • establishing the responsibilities of each member in relation to the purpose of the project and the resulting scopes of work, • determination of performance indicators for project work, • setting the rules of accounting for working time, • setting the rules for remuneration, bonuses, and rewards for project work, • establishing procedures for handling personnel and payroll matters in the project, • setting the rules for resolving conflicts between the project manager and line managers of persons employed in the project 	average/high

Cont. table 2.

implementation and steering	<ul style="list-style-type: none"> • control of the team management process, including multicultural teams and diversity in the team, • monitoring and control of the situation in the team during project implementation, the dynamics of employment and its developments, • ongoing communication with the team and those in the proximity of the project, including key stakeholders, • strategic control of work progress and periodic communication with the Steering Committee and key stakeholders, • monitoring compliance with labour law under agreements and contracts concluded in the project, • monitoring the established responsibilities of each member in relation to the project plan and the resulting scopes of work, • review of performance indicators, • maintaining personnel files and managing employee records for the project 	high
completion	<ul style="list-style-type: none"> • review of the situation in the team upon completion of the project and acceptance of work upon delivery, • project lessons learned survey, • dissolution of the project team, • preparation and management of personal records terminating the employment relationship in the project 	low/average

Source: own compilation based on: Kerzner, 2013; Król, 2017; Podgórska, 2018; Musioł-Urbańczyk, 2010; Chomicz, 2020; Marciniak, 2008; Wachowiak et al., 2004; Lipka, 2021; Górecki, 2001; Poczowski, 2018.

As the above summary demonstrates, the elements of HR controlling in project management are highly convergent with the corresponding elements of this type of controlling in recurring (functional, process) activities, unless they are used to meet specific recommendations arising from the organisation's existing project management methodology or standard.

As the project controlling concept is developing (with its specialised types, including HR controlling), it is undergoing constant modifications along with the transformations that occur in organisations, necessitated mainly by changing conditions in their business environment and functioning in the "VUCA world." While it plays an important role in planning and controlling of work progress at the planning, implementation and follow-up phases, controlling also provides an essential interface between project management and the management system of the organisation as a whole – including the management of human resources, deployed at least in part in the implementation of the organisation's internal (cost) and external (revenue) projects.

5. Selected tools and techniques of HR controlling in projects

From the point of view of project controlling, there is a variety of HR controlling tools and techniques which are useful in effective project management. They are presented from the perspective of the project phase and their scope of application.

Table 3.*Selected tools and techniques of HR controlling in projects.*

Tool/technique	Project phase	Purpose of application
work card	planning	determination of competence requirements for project work by tasks to be performed
personality matrices	planning	successful selection of members to ensure effective and possibly conflict-free work of the entire project team
competency matrix	planning implementation closure	clear division of roles in the tasks to be performed; avoiding work overload and underload; eliminating workload bottlenecks in the project; clear allocation of responsibilities within the team; preventing work from not being completed as no member of the team felt (or was identified as) the owner of the task; facilitating control activities at the project implementation phase
internal and external team communication models	planning implementation	selection of an adequate (successful) form of communication within the team and between the team and those in the proximity of the project (including stakeholders), depending on the characteristics of the project, organisational culture and the complexity of the work performed
communication plan	planning implementation completion	development of a clear communication path; facilitating control activities at the project implementation phase
periodic inspections of personnel-related issues in projects	planning implementation	iterative, periodic or ad hoc inspections regarding HR matters in the project, including the composition and availability of the team, the team's readiness to work in possible conditions under which services are provided in support of the project, absenteeism and volume of regular and overtime work, productivity and volume of work performed in relation to the plan, the relationship between project work and line work, the extent and causes of conflicts within the team
project progress reports	implementation completion	acquisition of information covering the aforementioned personnel-related and other issues, relevant at the control phase from the point of view of those making the relevant decisions in the project
conflict resolution matrices	planning implementation completion	taking effective measures regarding the team when confronted with certain types of crises in the project

Source: own compilation based on: Cabała, Wawak, 2022, pp. 227-232.

As the above summary illustrates, most of the listed HR controlling tools and techniques focus on the planning and implementation phase of the project, and some of them will also be useful at the completion phase. By contrast, despite its diversity, the authors do not find them applicable at the initial phases, i.e., initiating and defining the work. This is understandable from the perspective of project cycle management (Trocki, 2012; Cabała, Wawak, 2022) because these pre-planning phases (the conceptualisation) focus not on HR issues as such but on establishing the project goal, its business case, the overall quality framework, and guidelines for technology, time, schedule and acceptable budget. It is only at the planning phase – after the above information has been compiled, the business case has been developed, and the project idea has been approved – that a project manager is (usually) appointed and the project team begins to be formed. Therefore, the tools and techniques referred to above make it possible to achieve their benefits in the project at later phases, up to and including completion, when an overall summary of the work done in the project is made, final meetings are held with the project team, a ‘project lessons learned’ (Wyrozębski, 2014) survey is conducted, and the team is dissolved, with its members being assigned to other work.

6. Conclusion

This article was aimed at a comprehensive exploration of HR controlling in the context of project management. By delving into the definition and types of project management controlling, elucidating the concept of HR controlling, and investigating commonly used HR controlling tools, a framework is established to comprehend the significance and role of HR controlling in the overall project management process. The existing literature often overlooks HR controlling, despite its importance in managing personnel-related matters. This article adopts a cross-sectional approach, utilizing a literature review and desk research technique to analyse the existing body of knowledge on HR controlling in project management.

HR controlling involves the systematic management and regulation of human resources within a project. It encompasses the processes and practices that ensure the optimal allocation, utilization, and development of personnel to achieve project goals. In project implementation, HR controlling plays a pivotal role in ensuring that the right individuals with the necessary skills and competencies are assigned to appropriate roles. It also encompasses performance evaluation, training and development programs, and maintaining a motivated workforce. The elements of HR controlling in project implementation include strategic workforce planning, recruitment and selection, performance management, and employee development.

Several tools and techniques facilitate effective HR controlling in project management. These tools enable project managers to monitor and regulate personnel-related matters efficiently. Examples of commonly used HR controlling tools include work card, competency matrices, internal and external team communication models, communication plan, periodic inspections of personnel-related issues in projects, project progress reports and conflict resolution matrices. These tools assist in aligning human resources with project requirements, identifying skill gaps, evaluating performance, and addressing employee concerns. By utilizing these tools, project managers can make informed decisions and optimize the utilization of human resources.

This paper has provided an in-depth exploration of HR controlling within the context of project management. By shedding light on the significance and role of HR controlling, it underscores the importance of personnel-related matters in the overall project management process. Despite being overlooked in the existing literature, HR controlling plays a crucial role in managing human resources effectively. The cross-sectional approach and literature review employed in this study have contributed to a comprehensive understanding of HR controlling in project management. It is imperative for project managers and stakeholders to recognize the value of HR controlling and employ appropriate tools and techniques to ensure the successful implementation of projects. Further research in this area can enrich the existing knowledge and enhance project management practices.

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