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## The Impact of Project Manager Compensation and Methodology Alignment on IT Project Effectiveness in Large Organizations

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### **Abstract:**

**Purpose:** This study investigates the relationship between project management effectiveness and project manager compensation, as well as between project management effectiveness and methodology alignment in IT projects.

**Design/Methodology/Approach:** Through a survey of 130 project management professionals, we explore how these factors influence project outcomes and organizational success.

**Findings:** Our findings suggest that while project managers associate effectiveness primarily with achieving organizational benefits and goals, there is a significant relationship between project manager compensation, methodology alignment, and perceived project success.

**Practical Implications:** The study contributes to the ongoing debate on project effectiveness definition and offers practical insights for optimizing project management practices in IT organizations.

**Originality/Value:** Despite extensive research in project management, there remains a lack of consensus on how to define and measure project. Moreover, while the importance of both compensation structures and methodology selection has been acknowledged separately, their combined impact on project effectiveness is under-explored, especially in the IT sector. This article aims to address these gaps.

**Keywords:** Project effectiveness, project manager compensation, methodology alignment, organizational processes.

**JEL Classification:** M52, O32, L86, M15, D23.

**Paper Type:** Research article.

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## 1. Introduction

Project management effectiveness is a critical determinant of organizational success, particularly in the dynamic and complex field of information technology (IT). As organizations increasingly rely on projects to drive innovation and strategic objectives, understanding the factors that contribute to project effectiveness becomes paramount.

This study focuses on two key elements, project manager compensation and methodology alignment with organizational processes. Despite extensive research in project management, there remains a lack of consensus on how to define and measure project effectiveness (Serrador and Turner, 2015). Moreover, while the importance of both compensation structures and methodology selection has been acknowledged separately, their combined impact on project effectiveness is under-explored, especially in the IT sector.

This research aims to address these gaps by investigating how project manager compensation and methodology alignment interact to influence project outcomes. Specifically, we seek to answer the following research questions:

- How do project management professionals understand and define IT project effectiveness?
- To what extent does linking project manager compensation to project outcomes impact effectiveness?
- How does the alignment of project management methodologies with organizational processes affect project success?

By exploring these questions, we aim to contribute to both the theoretical understanding of project effectiveness and provide practical insights for IT organizations seeking to enhance their project management practices.

The remainder of this paper is structured as follows: Section 2 provides a comprehensive literature review on project effectiveness, compensation in project management, and methodology alignment. Section 3 details our research methodology, including survey design and data collection procedures. Section 4 presents our findings, followed by a discussion of results in Section 5. We conclude with implications for theory and practice, acknowledge limitations, and suggest avenues for future research.

This study is grounded in several key theoretical frameworks that inform our understanding of project management effectiveness. Primarily, we draw upon agency theory (Eisenhardt, 1989) to examine the relationship between compensation structures and project outcomes. This theory provides insights into how incentives can align the interests of project managers (agents) with those of the organization (principal). Additionally, we leverage contingency theory (Freeman *et al.*, 1969) to

explore the impact of methodology alignment, recognizing that the effectiveness of project management approaches is contingent upon organizational context and processes. The study also incorporates elements of stakeholder theory (Parmar *et al.*, 2010) in its consideration of project effectiveness from multiple perspectives, including organizational benefits and end-user satisfaction.

The significance of this research lies in its integrated approach to understanding project management effectiveness in IT contexts, an area of growing importance as organizations increasingly rely on technology-driven projects to achieve strategic objectives. By examining the interplay between compensation structures, methodology alignment, and project outcomes, this study addresses a gap in the literature where these factors have typically been studied in isolation.

Our findings contribute to the field by providing empirical evidence on how these elements interact to influence project effectiveness, offering valuable insights for both theory and practice. Moreover, by exploring practitioners' perspectives on project effectiveness, this research helps bridge the gap between academic conceptualizations and real-world applications of project management principles. The results of this study have the potential to inform more effective project management practices, leading to improved project outcomes and, ultimately, enhanced organizational performance in the IT sector.

## **2. Literature Review**

### **2.1 Defining Project Effectiveness**

In the domain of project management, the concept of effectiveness is frequently employed, yet it is relatively rarely well-defined. Often, it is used interchangeably with terms like efficiency or productivity. However, assuming these terms are synonymous is a mistake, as confirmed by Merriam-Webster (Merriam-Webster, 1984).

Even from a linguistic standpoint, translating the nuances between terms such as efficiency, effectiveness, and efficacy can be challenging. In some languages, a single word may encompass at least two of these concepts. In recent years, several academic articles, though focused on the engineering and construction industries rather than IT, have effectively described this phenomenon (Thalassinos *et al.*, 2023).

Effectiveness and efficiency are terms used by researchers across various aspects of project management. These aspects include the improvement of project management practices (Ward, 1999), which can be considered both in general terms and in relation to specific elements such as leadership, communication, and support. The terms are also employed in discussions about competencies (Lampel, 2001) and appear in numerous organizational maturity models, such as OPM3 (Bento *et al.*,

n.d.), SPICE (Sarshar *et al.*, 2004), and (PM)<sup>2</sup> (Kwak and Ibbs, 2002), where they are treated as a measure of maturity. Despite this, the precise meanings of these terms require further clarification.

The field of quality management presents a more structured approach to these concepts. Within this domain, efficiency is concerned with doing things right—utilizing resources in the most appropriate way given the available means, which reflects high efficiency. On the other hand, effectiveness pertains to doing the right things—choosing and focusing on activities that contribute to achieving the intended goal or outcome.

This distinction has been supported by Zidane and Olsson (Zidane and Olsson, 2017), who noted that efficiency is associated with producing immediate results, whereas effectiveness relates to creating added value for stakeholders and end users.

The question then arises: what does improving effectiveness mean, and what does it entail? Wysocki primarily addressed timeliness and budget constraints — key components of the iron triangle (Wysocki, 2011). Hyväri described effectiveness in the context of organizational projects and the characteristics of effective project managers (Hyväri, 2006).

Parast used both effectiveness and efficiency in discussing the impact of Six Sigma projects on innovation and company outcomes, likely due to the focus on quality, where effectiveness is better defined (Parast, 2011). DeToro and McCabe provide an example of such definitions:

- Efficiency—meets all internal requirements regarding costs, margins, resource utilization, and other performance indicators.
- Effectiveness—meets or exceeds all customer requirements (DeToro and McCabe, 1997).

An intriguing aspect here is the connection between effectiveness and the level of customer satisfaction, which is characteristic of quality sciences and is directly linked to the very definition of quality. Quality, as defined by Juran, can be seen from two perspectives:

- A product that possesses features that meet customer needs;
- A product that is free from defects (JM, 1989).

These definitions present different viewpoints on how quality is perceived. The first definition emphasizes meeting customer needs and expectations, while the second focuses on the product itself. One could argue that both perspectives relate to the same outcome but differ in how that outcome is achieved. A third definition of quality, provided by the International Organization for Standardization in ISO

9000:2005, defines quality as "the degree to which a set of inherent characteristics fulfills requirements".

As Rose noted, all three definitions focus on products, defects, and customers (Rose, 2022). They emphasize both delivering the best possible outcome and ensuring that the outcome is what the customer wants—in other words, doing things right and doing the right things. This directly corresponds to the previously mentioned definitions of both effectiveness and efficiency.

This approach suggests that internal and external perspectives, as well as short-term and long-term considerations, are encompassed within these concepts. The description of efficiency focuses on internal and short-term issues, while effectiveness tends to emphasize long-term matters that are both internal and external.

Understanding these distinctions is critical for improving project management practices, as they guide how resources are allocated and how goals are prioritized to ensure not only the success of individual projects but also the overall strategic objectives of the organization.

The debate on project effectiveness extends beyond mere definitions. Scholars like Shenhar and Dvir (Shenhar and Dvir, 2004) argue for a multidimensional approach to project success, encompassing both short-term project efficiency and long-term business success. This perspective aligns with our findings on how practitioners view effectiveness, bridging the gap between academic theory and industry practice.

In conclusion, while the terms effectiveness and efficiency are often used interchangeably in project management, they represent distinct concepts that are crucial for understanding and improving project outcomes. Effectiveness focuses on achieving the right outcomes that meet or exceed stakeholder expectations, while efficiency concerns the optimal use of resources to achieve those outcomes.

Clarifying these concepts and applying them appropriately within project management frameworks can lead to more successful and sustainable project outcomes, ultimately contributing to the long-term success of the organization.

## **2.2 Compensation in Project Management**

Project manager compensation plays a crucial role in driving behavior and aligning individual goals with organizational objectives. Agency theory provides a valuable framework for understanding this dynamic, particularly in the context of the principal-agent relationship inherent in project management (Eisenhardt, 1989).

Compensation structures for project managers can range from fixed salaries to performance-based incentives tied to specific project outcomes. Research suggests

that performance-based compensation can enhance project success by directly linking rewards to outcomes (Park, 2008). However, the design of such incentive systems must be carefully considered to avoid unintended consequences, such as a narrow focus on easily measurable outcomes in short-time horizon at the expense of broader project goals (Kerr, 1975).

In IT projects, where complexity and uncertainty are often high, the relationship between compensation and project effectiveness may be particularly nuanced. This study aims to explore this relationship in greater depth, considering both the motivational aspects of compensation and its potential impact on project outcomes.

Agency theory provides a valuable framework for understanding the dynamics of project manager compensation, particularly in relation to the principal-agent relationship inherent in project management. In this context, the principal (typically the project sponsor or organization) delegates authority to the agent (the project manager) to execute the project on their behalf.

Agency theory highlights the potential for conflicts of interest between the principal and the agent, particularly when their goals are not perfectly aligned. One of the central tenets of agency theory is that the nature of the contract between the principal and the agent significantly influences the agent's behavior and, consequently, the success of the project (Jensen and Meckling, 1976).

For instance, outcome-based contracts, which align the agent's compensation with the achievement of specific project goals, can mitigate the risk of the agent pursuing their own interests at the expense of the project's success. By tying rewards directly to project outcomes, these contracts incentivize the agent to act in the best interest of the principal.

However, agency theory also acknowledges the complexities of such relationships, especially in large, matrix-structured organizations where multiple principals may be involved. In these environments, the project manager might receive conflicting directives from different stakeholders, each with their own set of priorities and objectives. This can complicate the alignment of the project manager's actions with the organization's broader goals, increasing the risk of agency problems where the agent acts in their own interest rather than that of the principal.

Advanced models of agency theory suggest that principals can optimize project outcomes by designing compensation packages that consider the agent's utility function—essentially, what motivates the agent beyond mere financial rewards. By understanding these motivations, principals can create contracts that not only incentivize desired behaviors but also account for the complexities of the principal-agent relationship in large organizations.

Moreover, the choice of project management methodology can also be analyzed through the lens of agency theory. The decision about which methodology to employ—whether it is left to the discretion of the project manager or dictated by organizational guidelines—can influence the alignment of the project manager's actions with the organization's strategic objectives. When the project manager has the autonomy to choose a methodology, they may select one that aligns more closely with their personal preferences, which may not always be in the best interest of the organization (Grima *et al.*, 2019).

Conversely, when the methodology is imposed by higher-level oversight, it may reduce the project manager's sense of ownership and motivation, potentially leading to less effective project execution.

While agency theory provides a valuable framework for understanding compensation in project management, it's important to consider its limitations in complex IT environments. Mahaney and Lederer (Mahaney and Lederer, 2003) argue that the unpredictable nature of IT projects can make it challenging to design effective outcome-based contracts. Furthermore, Zwikaël and Meredith (Zwikaël and Meredith, 2021) suggest that focusing solely on project outcomes may lead to short-term thinking, potentially compromising long-term value creation.

In conclusion, project manager compensation is a critical lever for enhancing project management efficiency, particularly when viewed through the framework of agency theory. By carefully designing compensation packages that align the interests of project managers with organizational goals, and by thoughtfully considering the role of methodology selection in this process, organizations can significantly improve the likelihood of project success. Future research should continue to explore the nuanced interactions between compensation, agency dynamics, and methodology alignment in diverse project management contexts.

### **2.3 Methodology Alignment and its Impact on Project Outcomes**

In the realm of project management, the alignment of chosen methodologies with an organization's processes is crucial to achieving project efficiency and overall success. The selection and implementation of a project management methodology are not merely technical decisions but strategic choices that have far-reaching implications for how effectively projects are executed within an organization.

The field of modern project management, since the conclusion of World War II, has been dominated by the classical waterfall approach (characterized by a sequential work methodology where activities were predominantly executed in succession along a predetermined critical path). This paradigm was substantially displaced at the turn of the 20th century by Agile and scaled Agile methods, which themselves have been partially supplanted in recent years by hybrid approaches.

The evolution of project management methods, happened in parallel to the wider evolution of management which affected a lot of processes within organizations and in time this alignment between those two worlds — or lack thereof—can significantly influence project outcomes, particularly in complex environments like IT projects. Organizations often operate with established processes, workflows, and cultural norms that shape how projects are planned, executed, and monitored. These organizational processes reflect the company's strategic priorities, resource management practices, and stakeholder expectations.

When a project management methodology is well-aligned with these processes, it facilitates smoother integration of project activities with the broader organizational operations, leading to enhanced efficiency and a higher likelihood of project success. Methodology alignment refers to the degree to which a project management approach supports and complements the existing organizational processes. This alignment is critical for several reasons.

First, it ensures that the project management practices are compatible with the organization's operational norms, reducing friction and resistance from project teams and other stakeholders. When methodologies are well-integrated with organizational processes, teams can more easily adopt and implement project management practices, leading to more efficient execution (Shehu and Akintoye, 2010).

Second, alignment helps in achieving strategic coherence. Organizations typically undertake projects to advance their strategic goals, such as entering new markets, launching innovative products, or improving operational efficiency. A project management methodology that aligns with these strategic goals ensures that project activities contribute directly to the broader objectives of the organization.

This alignment helps in maintaining a clear focus on strategic outcomes, which is particularly important in complex projects where there are many competing demands and priorities (Shenhar *et al.*, 2001).

Third, methodology alignment can improve resource utilization. Projects often require significant investments of time, money, and human resources. When a project management methodology is aligned with organizational processes, it can optimize the use of these resources by ensuring that project activities are coordinated with other ongoing operations.

This reduces the likelihood of resource conflicts, bottlenecks, and inefficiencies that can derail projects (Crawford and Nahmias, 2010).

Despite the clear benefits of methodology alignment, many organizations struggle with misalignment, where the chosen project management approach does not fit well

with the organization's existing processes. Misalignment can occur for several reasons, including:

- inflexible organizational processes: in some cases, an organization's processes may be rigid and not adaptable to new project management methodologies. For example, a company with a highly structured, hierarchical process may struggle to adopt agile methodologies that require flexibility, collaboration, and rapid decision-making (Morrison *et al.*, 2008).
- Inappropriate methodology selection: organizations may choose methodologies based on trends or external pressures rather than a careful assessment of their own needs. This can lead to the adoption of methodologies that are not suitable for the organization's specific context, resulting in inefficiencies and project failures (Mir and Pinnington, 2014).
- Lack of stakeholder buy-in: successful methodology alignment requires buy-in from all levels of the organization. If key stakeholders, such as senior management or project teams, do not support the chosen methodology, it can create resistance and undermine project execution (Kloppenborg and Opfer, 2002).
- Complex organizational structures: in large, matrixed organizations, the complexity of multiple reporting lines and diverse stakeholder interests can make it difficult to achieve alignment between project management methodologies and organizational processes. Different departments or business units may have conflicting priorities or operational practices, making it challenging to implement a uniform project management approach (Patanakul, 2015).

When misalignment occurs, it can lead to several negative outcomes. Projects may experience delays, cost overruns, and quality issues as teams struggle to reconcile the methodology with the organization's existing processes. Additionally, misalignment can lead to a lack of clarity in roles and responsibilities, resulting in confusion and inefficiencies.

In the worst cases, it can cause projects to fail outright, leading to wasted resources and missed strategic opportunities. To mitigate the risks associated with misalignment, organizations should take a strategic approach to selecting and implementing project management methodologies. Several actions can help achieve better alignment:

- First, start with performing thorough needs assessment: before selecting (or launching an improvement initiative) a project management methodology, organizations should conduct a thorough assessment of their existing processes, strategic goals, and project requirements. This assessment should involve input from key stakeholders across the organization to ensure that

the chosen methodology aligns with both operational needs and strategic priorities (Aylesworth *et al.*, 2021).

- After that, either:
  - Adapt hybrid approach to enhance customization and flexibility: in many cases, it may be necessary to customize the chosen methodology to better fit the organization's processes. This can involve adapting specific practices or tools to align with the organization's workflows or integrating elements from multiple methodologies to create a hybrid approach that meets the organization's unique needs (Zaouga *et al.*, 2023).
  - Or focus on fixing elements of existing approach that the organization is using, by performing, for example:
    - Stakeholder engagement improvements: successful alignment requires the active involvement of stakeholders at all levels of the organization. This includes not only senior management but also project teams, functional managers, and end-users. Engaging stakeholders early in the process can help build buy-in and ensure that the chosen methodology is implemented effectively (Munns and Bjeirmi, 1996).
    - Ongoing monitoring and adaptation: Even after a methodology has been selected and implemented, it is important to continuously monitor its effectiveness and make adjustments as needed. This may involve revising processes, providing additional training, or refining tools and techniques to better align with the organization's evolving needs (Sońta-Drączkowska and Krogulec, 2024).
    - Training and support: providing adequate training and support for project teams is essential for successful methodology alignment. This includes not only technical training on specific tools and practices but also guidance on how to integrate the methodology with the organization's existing processes. Ongoing support can help teams navigate challenges and ensure that the methodology is applied consistently and effectively (Badewi, 2016).

Methodology alignment with organizational processes is a critical factor in achieving project management efficiency and success. By carefully selecting and implementing project management methodologies that align with the organization's operational norms and strategic goals, organizations can enhance their ability to deliver projects on time, within budget, and to the desired quality standards.

Conversely, misalignment can lead to inefficiencies, project failures, and missed opportunities. Therefore, organizations must take a strategic approach to methodology selection, customization, and implementation, ensuring that all

stakeholders are engaged and that the methodology supports the organization's broader objectives. This alignment is particularly crucial in complex environments like IT projects, where the stakes are high, and the margin for error is low.

The concept of methodology alignment draws from contingency theory, which posits that there is no one-size-fits-all approach to management (Donaldson, 2006). In the context of project management, this suggests that the effectiveness of a methodology depends on its fit with organizational processes and culture. Recent studies by Joslin and Müller (Joslin and Müller, 2015) have shown a positive correlation between methodology alignment and project success, supporting our findings.

However, the literature also reveals potential challenges in achieving alignment. Špundak (Špundak, 2014) notes that organizations often struggle to balance standardization with the need for flexibility, particularly in dynamic IT environments. This tension between consistency and adaptability underscores the complexity of methodology selection and implementation.

## **2.4 Gaps in the Literature**

A review of existing research reveals significant gaps in our understanding of how both project manager compensation and methodology alignment influence IT project effectiveness. While these factors have been studied individually, substantial opportunities remain for empirical investigation of their impacts in contemporary IT project contexts.

In the domain of project manager compensation, research has primarily focused on traditional industries and general organizational contexts. While studies have been done in the past (Henderson and Lee, 1992; Turner and Müller, 2003) that examined aspects of compensation in project environments, their findings may not fully translate to the unique challenges of IT projects. More recent work (Mahaney and Lederer, 2006; Wang *et al.*, 2011) has begun to address compensation in IT contexts, but these studies have largely focused on individual motivation rather than project effectiveness outcomes.

The few studies that have examined both compensation and effectiveness in IT contexts (Reich *et al.*, 2012; Zhang and Li, 2016) have been predominantly theoretical or based on limited case studies. This leaves a significant gap in our understanding of how different compensation approaches influence IT project outcomes in practice.

Regarding methodology alignment, while more extensive research exists, particularly in IT contexts, important gaps remain. Joslin and Müller (Joslin and Müller, 2015) demonstrated the importance of methodology fit with organizational context, and Špundak (Špundak, 2014) examined method selection challenges.

However, as noted in systematic reviews (Serrador and Pinto, 2015; Winter *et al.*, 2006), there is a lack of large-scale empirical studies examining the quantitative relationship between methodology alignment and project effectiveness, particularly in modern IT environments where hybrid approaches are increasingly common.

The rapidly evolving nature of IT project management further emphasizes these gaps. As organizations increasingly adopt hybrid methodologies and face new challenges in managing distributed teams, understanding how both compensation structures and methodology alignment influence project effectiveness becomes increasingly critical.

Moreover, the unique characteristics of IT projects—including frequent requirement changes, technological complexity, and high levels of uncertainty—suggest that findings from traditional project management contexts may not fully apply and further research is required.

### **3. Research**

#### **3.1 Research Design**

This study employed a quantitative research design using a cross-sectional survey approach. This method was chosen to gather a broad range of data from IT project management professionals, allowing for statistical analysis of the relationships between our variables of interest: project manager compensation, methodology alignment, and perceived project effectiveness. To collect the data a questionnaire was designed by the researchers and was made available to project management professionals from various countries.

The questionnaire was a multi-purposed set of questions consolidated into 4 sectors, aiming to better understand factors shaping project effectiveness:

1. Demographic information and professional background
2. Understanding and definition of project effectiveness
3. Compensation structures and their perceived impact on project outcomes
4. Methodology alignment and its influence on project success.

Questions utilized a combination of Likert-scale items, multiple-choice questions, and open-ended responses to capture both quantitative data and qualitative insights. While the findings from the research provide valuable insights, caution should be exercised in generalizing these results to the broader population of organizations conducting IT projects. The study's limitations in terms of sample size and specific organizational contexts suggest that the findings should be interpreted within the scope of the research parameters.

#### **3.2 Participants and Sample Characteristics**

The study targeted project management professionals with experience in IT projects. Participants were recruited through professional networks, project management associations, and social media platforms dedicated to project management. A total of 130 respondents completed the survey, representing a diverse range of roles, experience levels, and organizational contexts within the IT sector.

The following table summarizes the characteristics of the survey respondents. The largest group of respondents—slightly over 40%—worked as Project Managers. On average, the respondents had nearly 10 years of experience in IT project management at the time of the survey, with the most experienced individual having 30 years in the field. The most common age group among the respondents was 31-40 years, with one individual being over 70 years old.

Almost half of the respondents were working in Poland, and on average, they had gained experience across approximately four companies. Nearly all respondents held project management-related certifications, with the most common (almost 57%) being PMP/Agile PM certification.

The majority of respondents (about 75% of the total) utilized their experience in the IT/technology/telecommunications sector, while the least number of respondents worked in education and media/entertainment companies—each constituting about 2% of the total. In their current organizations, nearly 70% of the respondents worked in companies with over 20,000 employees, while the smallest percentage—around 9%—worked in organizations with 1,001 to 5,000 employees. The dominant field of projects undertaken by respondents was software development, with just over 70% involved in such projects.

**Table 1.** *Profile of the respondents who participated in the survey.*

| Variable                                                              | Parameter           | Total(N=130) |
|-----------------------------------------------------------------------|---------------------|--------------|
| 1. What position do you work in?                                      | Project Manager     | 42,3% (N=55) |
|                                                                       | Program Manager     | 30% (N=39)   |
|                                                                       | Project Coordinator | 7,7% (N=10)  |
|                                                                       | Scrum Master        | 6,2% (N=8)   |
|                                                                       | PMO                 | 4,6% (N=6)   |
|                                                                       | Other               | 9,2% (N=12)  |
| 2. How many years of experience do you have in IT project management? | N                   | 130          |
|                                                                       | Mean (SD)           | 9,67 (5,91)  |
|                                                                       | Median (Q1-Q3)      | 9 (5 - 14)   |
|                                                                       | Scale               | 0 - 30       |
| 3. How old are you? [years]                                           | Up to 20            | 2,3% (N=3)   |
|                                                                       | 21-30               | 16,2% (N=21) |
|                                                                       | 31-40               | 43,1% (N=56) |
|                                                                       | 41-50               | 32,3% (N=42) |
|                                                                       | 51-60               | 4,6% (N=6)   |
|                                                                       | 61-70               | 0,8% (N=1)   |

| Variable                                                                                   | Parameter                                      | Total(N=130) |
|--------------------------------------------------------------------------------------------|------------------------------------------------|--------------|
| 4. In which country do you work?                                                           | Above 70                                       | 0,8% (N=1)   |
|                                                                                            | Other                                          | 3,8% (N=5)   |
|                                                                                            | Argentina                                      | 3,8% (N=5)   |
|                                                                                            | Bangladesh                                     | 0,8% (N=1)   |
|                                                                                            | Philippines                                    | 0,8% (N=1)   |
|                                                                                            | Netherlands                                    | 0,8% (N=1)   |
|                                                                                            | India                                          | 10,8% (N=14) |
|                                                                                            | Japan                                          | 0,8% (N=1)   |
|                                                                                            | Canada                                         | 0,8% (N=1)   |
|                                                                                            | Germany                                        | 1,5% (N=2)   |
|                                                                                            | Poland                                         | 46,2% (N=60) |
|                                                                                            | South Africa                                   | 0,8% (N=1)   |
|                                                                                            | Singapore                                      | 0,8% (N=1)   |
|                                                                                            | Switzerland                                    | 1,5% (N=2)   |
|                                                                                            | USA                                            | 20% (N=26)   |
|                                                                                            | Hungary                                        | 0,8% (N=1)   |
|                                                                                            | UK                                             | 6,2% (N=8)   |
| 5. In how many companies have you gained experience in project management so far?          | N                                              | 130          |
|                                                                                            | Mean (SD)                                      | 3,79 (4,89)  |
|                                                                                            | Median (Q1-Q3)                                 | 3 (2 - 4)    |
|                                                                                            | Scale                                          | 0 - 50       |
| 6. Do you hold any project management-related certifications, and if so, which ones?       | PMP / Agile PM                                 | 56,9% (N=74) |
|                                                                                            | Agile (Scrum . PSM, similar)                   | 48,5% (N=63) |
|                                                                                            | Scaled Agile (SAFe, Nexus, Less, S@S, similar) | 46,2% (N=60) |
|                                                                                            | PgMP                                           | 8,5% (N=11)  |
|                                                                                            | I don't have PM related certificates           | 5,4% (N=7)   |
|                                                                                            | Inne (jakie?)                                  | 18,5% (N=24) |
| 7. In which industry does the organization you work for operate (choose the dominant one)? | IT / Tech / Telco                              | 75,4% (N=98) |
|                                                                                            | Finance                                        | 45,4% (N=59) |
|                                                                                            | Manufacturing                                  | 10% (N=13)   |
|                                                                                            | Government & Public                            | 7,7% (N=10)  |
|                                                                                            | Oil and Energy                                 | 5,4% (N=7)   |
|                                                                                            | Retail                                         | 3,8% (N=5)   |
|                                                                                            | Healthcare                                     | 3,1% (N=4)   |
|                                                                                            | Education                                      | 2,3% (N=3)   |
|                                                                                            | Media and entertainment                        | 2,3% (N=3)   |
|                                                                                            | Other                                          | 18,5% (N=24) |
| 8. How many people work in your current organization?                                      | 251 - 1000                                     | 10% (N=13)   |
|                                                                                            | 1001 - 5000                                    | 9,2% (N=12)  |
|                                                                                            | 5001 - 20000                                   | 11,5% (N=15) |
|                                                                                            | Powyżej 20000                                  | 69,2% (N=90) |
| 9. What type of IT projects do you manage (choose the dominant one)?                       | Software development                           | 71,5% (N=93) |
|                                                                                            | IT Infrastructure                              | 41,5% (N=54) |
|                                                                                            | Business                                       | 29,2% (N=38) |

| Variable | Parameter   | Total(N=130) |
|----------|-------------|--------------|
|          | ERP         | 27,7% (N=36) |
|          | Security IT | 25,4% (N=33) |
|          | Other       | 18,5% (N=24) |

*Source: Own elaboration.*

### **3.3 Survey Instrument**

The survey instrument was developed through a rigorous process to ensure validity and reliability. Initially, we conducted a comprehensive literature review to identify key constructs and existing measures. Based on this review, we developed a preliminary questionnaire.

This draft instrument was then reviewed by a panel of five experts in project management and survey design to assess content validity and clarity. Following expert review, we conducted a pilot study with 20 IT project managers who were not part of the final sample. The pilot study allowed us to refine question wording, assess the time required to complete the survey, and conduct preliminary reliability analyses. Based on pilot feedback and analysis, we made final adjustments to the questionnaire.

### **3.4 Data Collection Procedures**

The target population for this study was IT project management professionals with at least two years of experience. We used a combination of purposive and snowball sampling techniques to reach our target audience. Invitations to participate in the online survey were distributed through professional project management associations, LinkedIn groups focused on IT project management, and direct emails to professionals in our network.

The survey was administered online using Qualtrics, a professional survey platform. Participants were provided with an information sheet explaining the purpose of the study, ensuring informed consent, and guaranteeing confidentiality. The survey remained open for eight weeks, with two reminder emails sent to potential participants. Data analysis was conducted using IBM SPSS Statistics version 27. For hypothesis testing, we employed a significance level of  $p < 0.05$ . Effect sizes were calculated and reported for all significant findings. To ensure the validity and reliability of our findings, we took several measures like content validity and internal consistency reliability. Data collection took place between December 2023 and May 2024.

## **4. Research Findings**

Analysis of the data gathered during the research was conducted to validate all three hypotheses mentioned below.

#### 4.1 Hypothesis 1

The first hypothesis put forward that linking project manager compensation to project effectiveness would positively impact project outcomes. In order to positively validate the hypothesis we have assumed thresholds:

- $p < 0.05$ , which is a standard academic threshold for statistical significance in social sciences research,
- Effect Size (Cramer's  $V$ ), which is based on Cohen's criteria for effect sizes in social sciences, adjusted for contingency table analysis:
  - $V < 0.10$ : No effect (hypothesis rejected)
  - $0.10 \leq V < 0.30$ : Small effect (hypothesis partially supported)
  - $V \geq 0.30$ : Medium to large effect (hypothesis strongly supported)
- positive correlation in data  $> 60\%$ , which would present majority threshold indicating clear practitioner consensus on the matter.

A cross-tabulation analysis revealed a strong positive correlation between respondents who believe IT project managers' earnings should be linked to project effectiveness and those who perceive that linking project results with team and project manager remuneration enhances management effectiveness (Table 2).

**Table 2.** Cross tabulation between assessment of linking project results with team and project manager remuneration and agreement level on linking it project managers' earnings to project effectiveness for enhanced performance.

|                                                                                  |               | Agreement Level on Linking IT Project Managers' Earnings to Project Effectiveness for Enhanced Performance |          |         |       |                |
|----------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------------|----------|---------|-------|----------------|
|                                                                                  |               | Strongly Disagree                                                                                          | Disagree | Neutral | Agree | Strongly Agree |
| Assessment of Linking Project Results with Team and Project Manager Remuneration | Not Relevant  | 25.0%                                                                                                      | 7.7%     | 11.1%   |       | 3.3%           |
|                                                                                  | Low Impact    | 50.0%                                                                                                      | 23.1%    | 27.8%   | 15.4% | 3.3%           |
|                                                                                  | Medium Impact | 25.0%                                                                                                      | 30.8%    | 44.4%   | 44.6% | 33.3%          |
|                                                                                  | High Impact   |                                                                                                            | 30.8%    | 11.1%   | 40.0% | 43.3%          |
|                                                                                  | Critical      |                                                                                                            | 7.7%     | 5.6%    |       | 16.7%          |

**Source:** Own elaboration.

The conclusion from the data is the high positive correlation between respondents who feel the earnings of IT project managers should be linked to project effectiveness and those who feel that linking project result with the remuneration of the team and project manager adds effectiveness for management. The outcomes of the survey depict that there is a mixed opinion on how the earnings of the project managers relate to the efficiency of the project. 25% answered that this relationship is not relevant.

On the other hand, 50% have rated that this association has low impact. On the contrary, 25% answered that it has a medium impact, whereas 40% answered that it has a high impact, in which 43.3% strongly agree upon the effectiveness of this relationship. Furthermore, 16.7% believed that it has a critical impact.

This is most likely to indicate that people who agree with the statement of IT project manager compensation performance-linked are also likely to believe in the efficiency of compensation linked to output of the projects

These findings suggest that those individuals who subscribe to the notion of pay-for-performance for IT project managers are likely to believe that project outcomes compensation linkage may be a workable strategy. To validate the statement from statistical perspective, a Chi-Square test was done (Table 3), which is a statistical hypothesis test applied when a researcher has to determine whether observed and expected frequencies differ significantly in one or more categories.

It is used in comparing group differences where the dependent variable is measured at a nominal level. The test determines whether two categorical variables are related or independent.

**Table 3.** *Chi-Square test for hypothesis 1.*

| <b>Chi-Square Tests</b>      | Value               | df | Asymptotic Significance (2-sided) |
|------------------------------|---------------------|----|-----------------------------------|
| Pearson Chi-Square           | 35.672 <sup>a</sup> | 16 | .003                              |
| Likelihood Ratio             | 38.315              | 16 | .001                              |
| Linear-by-Linear Association | 15.057              | 1  | .000                              |
| N of Valid Cases             | 130                 |    |                                   |

a. 17 cells (68.0%) have expected count less than 5. The minimum expected count is .15.

**Source:** *Own elaboration.*

A Chi-Square test was conducted to validate the statistical significance of this relationship ( $\chi^2 = 35.672$ ,  $df = 16$ ,  $p = .003$ ). The results indicate a statistically significant association between the variables, supporting the hypothesis that performance-linked compensation is perceived to enhance project effectiveness. All the agreed thresholds were met, as  $p$  was 0.003, positive correlation much higher than 60%, and Cramer's  $V$  at 0.262.

It is interesting that regardless of how good or bad the situation is perceived in the current organization perspective in the context of having (or not) alignment between project management methods and organizational processes, everyone is seeing the importance of linking project manager compensation to project success in a similar way (Table 4).

**Table 4.** Research data on rating process and methodology alignment in the organization against views on project management compensation. Scale 1-5 where 1 is very bad and 5 is very good.

|                                                                 |                                                                                                                                                                |
|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| How would you rate alignment of PM method and company processes | The earnings of people managing IT projects should be related to the effectiveness of the projects, because this would make them work more effectively. [Mean] |
| 2                                                               | 3,571429                                                                                                                                                       |
| 3                                                               | 3,46875                                                                                                                                                        |
| 4                                                               | 3,585366                                                                                                                                                       |
| 5                                                               | 3,625                                                                                                                                                          |
| Total                                                           | 3,54902                                                                                                                                                        |

**Source:** Own elaboration.

## 4.2 Hypothesis 2

The second hypothesis proposed that improving organizational processes would have a greater impact on achieving Agile benefits compared to adopting a different methodology. This was evaluated by comparing responses to two key questions:

- The perceived impact of changing processes vs. changing methodology on achieving Agile benefits.
- The importance of aligning processes with methodology vs. adjusting methodology to existing processes during implementation.

Additionally answers were cross-referenced that against the current dominant project management methodology used in organization to see, if there are differences in approach (Table 5).

**Table 5.** Mean respective to current dominant methodology or approach to project management.

|                                                     |                              | Changing to a Different Methodology (Q3_1) | Changing Processes in the Company (Q3_2) | Adjusting the Methodology to Existing Processes in the Organization (Question 4_5) | Aligning Processes with the Methodology (Question 4_6) |
|-----------------------------------------------------|------------------------------|--------------------------------------------|------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------|
|                                                     |                              | Mean                                       | Mean                                     | Mean                                                                               | Mean                                                   |
| Current Dominant Methodology or Approach to Project | Agile (Scrum or similar)     | 3.10                                       | 4.26                                     | 3.71                                                                               | 4.21                                                   |
|                                                     | Hybrid                       | 2.68                                       | 4.32                                     | 3.47                                                                               | 4.05                                                   |
|                                                     | Other (please specify)       | 3.00                                       | 4.00                                     | 5.00                                                                               | 4.00                                                   |
|                                                     | PMI best practices/standards | 3.14                                       | 3.57                                     | 3.29                                                                               | 3.71                                                   |
|                                                     | PRINCE2                      | 3.50                                       | 4.00                                     | 3.83                                                                               | 3.83                                                   |

|            |                                                |      |      |      |      |
|------------|------------------------------------------------|------|------|------|------|
| Management | Scaled Agile (SAFe, Nexus, LeSS, S@S, similar) | 2.87 | 4.02 | 3.65 | 3.89 |
|            | Traditional (Waterfall)                        | 3.00 | 4.11 | 3.78 | 4.22 |

**Source:** Own elaboration.

The data provides information on the average scores that different project management methodologies give about four relevant aspects: Introduction of a Different Methodology, Introduction of New Processes in the Company, Adjustment of the Methodology to Existing Processes in the Organization, and Introduction of Processes According to the Methodology.

What can be noticed in this regard is that companies or projects using Agile, either Scrum or similar, have given the highest average in all aspects, with special mention of the alignment of processes with a rating of 4.21, and the adjustment of the methodology with 3.71. In contrast, the Hybrid approach had a lower mean: most significantly, for changing methodology at 2.68, but relatively higher in score when aligning processes at 4.05.

Both PRINCE2 and Traditional or Waterfall methodologies had consistent average marks that show while Agile method may generally benefit more in adaptability and alignment, hybrid and traditional approaches still have value in certain contexts. It means, all in all, that data is trending toward agile methodologies, mostly in environments that want flexibility and alignment with existing processes.

Before starting to test hypothesis 2, a normality test (Shapiro – Wilk) was performed to see if the differences are normally distributed at the .05 level of significance.

**Table 6.** Normality test for Q3 data.

|         |              |     |         |
|---------|--------------|-----|---------|
|         | Shapiro-Wilk |     |         |
|         | Statistic    | df  | p-value |
| Q3_diff | .920         | 129 | .000    |

**Source:** Own elaboration.

Our data collection process utilized purposeful selection of random representatives of the target group, which ensures that the assumption of independence is satisfied. From the Shapiro – Wilk test we can see that our data do not follow normal distribution since the p value is less than 0.05. So instead of paired sample t test we decided to use Wilcoxon Signed Rank Test.

**Table 7.** Wilcoxon rank for Q3 data on hypothesis 2.

| Ranks       |                |                 |           |              |
|-------------|----------------|-----------------|-----------|--------------|
|             |                | N               | Mean Rank | Sum of Ranks |
| Q3_2 – Q3_1 | Negative Ranks | 8 <sup>a</sup>  | 20.56     | 164.50       |
|             | Positive Ranks | 79 <sup>b</sup> | 46.37     | 3663.50      |

|                |       |                 |  |  |
|----------------|-------|-----------------|--|--|
|                | Ties  | 42 <sup>c</sup> |  |  |
|                | Total | 129             |  |  |
| a. Q3_2 < Q3_1 |       |                 |  |  |
| b. Q3_2 > Q3_1 |       |                 |  |  |
| c. Q3_2 = Q3_1 |       |                 |  |  |

**Source:** Own elaboration.

A Wilcoxon Signed Rank Test was performed to determine if there was a statistically significant difference in the mean impact of changing to a different methodology (Q3\_1) and the impact of changing processes within the company (Q3\_2). A total of 130 opinions were used in the analysis.

In order to positively verify the hypothesis, thresholds were set:

- Statistical Significance:  $p < 0.05$  (which is a standard threshold for non-parametric tests)
- Effect Size ( $r = Z/\sqrt{N}$ ):
  - $r < 0.20$ : No effect (Hypothesis rejected)
  - $0.20 \leq r < 0.35$ : Small effect (Hypothesis partially supported)
  - $r \geq 0.35$ : Medium to large effect (Hypothesis strongly supported)
  - Justification: Adapted from Cohen's criteria for non-parametric tests
- Median Difference:
  - Difference  $< 0.5$  points on Likert scale: No practical significance
  - Difference  $\geq 0.5$  points: Practical significance
  - Justification: half-point on Likert scale represents meaningful practical difference.

**Table 8.** Wilcoxon test for Q3 data on hypothesis 2.

| Test Statistics <sup>a</sup>  |                     |
|-------------------------------|---------------------|
|                               | Q3_2 – Q3_1         |
| Z                             | -7.511 <sup>b</sup> |
| Asymp. Sig. (2-tailed)        | .000                |
| a. Wilcoxon Signed Ranks Test |                     |
| b. Based on negative ranks.   |                     |

**Source:** Own elaboration.

The test revealed that there was a statistically significant difference at 5% level of significance in mean impact between the two groups since the p significance value is less than 0.05.

The result shows that changing processes within a company is perceived by the respondents to be much more impactful than changing to another methodology.

After that, we followed a similar process for data related to question 4, starting with normality test (Shapiro – Wilka) to see if the differences are normally distributed at the 5% level of significance.

**Table 9.** Normality test for Q4 data.

|          | Shapiro – Wilka |     |         |
|----------|-----------------|-----|---------|
|          | Statistic       | df  | p-value |
| Q31_diff | .902            | 129 | .000    |

**Source:** Own elaboration.

And since the data doesn't have a normal distribution similarly to question 3, we followed the approach similar as in previous question.

**Table 10.** Wilcoxon rank for Q4 data on hypothesis 2.

| Ranks          |                |                 |           |              |
|----------------|----------------|-----------------|-----------|--------------|
|                |                | N               | Mean Rank | Sum of Ranks |
| Q4_6 – Q4_5    | Negative Ranks | 19 <sup>a</sup> | 31.61     | 600.50       |
|                | Positive Ranks | 49 <sup>b</sup> | 35.62     | 1745.50      |
|                | Ties           | 62 <sup>c</sup> |           |              |
|                | Total          | 130             |           |              |
| a. Q4_6 < Q4_5 |                |                 |           |              |
| b. Q4_6 > Q4_5 |                |                 |           |              |
| c. Q4_6 = Q4_5 |                |                 |           |              |

**Source:** Own elaboration.

A Wilcoxon Signed Rank Test was performed to determine if there was a statistically significant difference in the mean responses for adapting the methodology to existing processes (Q4\_5) and processes being adapted to the methodology (Q4\_6). A total of 130 opinions were used in the analysis.

The test revealed that there was a statistically significant difference at 5% level of significance in mean impact between the two groups since the p significance value is less than 0.05.

**Table 11.** Wilcoxon test for Q4 data on hypothesis 2.

| Test Statistics <sup>a</sup>  |                     |
|-------------------------------|---------------------|
|                               | Q4_6 – Q4_5         |
| Z                             | -3.610 <sup>b</sup> |
| Asymp. Sig. (2-tailed)        | .000                |
| a. Wilcoxon Signed Ranks Test |                     |
| b. Based on negative ranks.   |                     |

**Source:** Own elaboration.

Both tests revealed statistically significant differences, with respondents favoring process changes and alignment over methodological changes. This supports the hypothesis that improving processes is perceived to have a greater impact on achieving Agile benefits than changing methodologies. Looking at the data, it seems

that this trend is stronger, the worse current alignment (between project management method and organizational processes) in the organization is (Table 12).

Furthermore, analysis of mean scores across different project management approaches (e.g., Agile, Hybrid, Traditional) consistently showed higher ratings for process-related factors compared to methodology changes. All set thresholds were met, as  $p$  was 0.001,  $r=0.661$  and mean difference in Likert scale was between 0.5 up to 1 point, which supported the hypothesis.

**Table 12.** Research data on rating alignment between project management method and organizational processes against respondents views on importance of aligning methods to processes or opposite

| How would you rate alignment of PM method and company processes | Adjusting the methodology to existing processes in the organization [Mean] | Aligning processes with the methodology [Mean] |
|-----------------------------------------------------------------|----------------------------------------------------------------------------|------------------------------------------------|
| 2                                                               | 3,43                                                                       | 4,19                                           |
| 3                                                               | 3,77                                                                       | 3,58                                           |
| 4                                                               | 3,71                                                                       | 3,87                                           |
| 5                                                               | 3,75                                                                       | 3,88                                           |
| Total                                                           | 3,67                                                                       | 3,85                                           |

**Note:** Scale 1-5 where 1 is very bad and 5 is very good.

**Source:** Own elaboration.

### 4.3 Hypothesis 3

H3: The effectiveness of IT projects is linked to the benefits delivered to end users and the organization – to confirm how practitioners understand the term effectiveness in the context of ongoing debate in scientific literature.

To verify hypothesis 3, it was necessary to convert categorical variables into a numerical scale similarly as in previous cases. Additionally, this scale was reversed so that a value of 5 corresponded to the highest ratings, while 1 represented the lowest.

The analysis of the responses presented in this way showed that respondents asked about their understanding of project management effectiveness as its completion within time/budget/scope rated this correlation at an average of 3.64 (+/-1.29) points on the Likert scale.

The highest priority in effectiveness, according to the respondents, is the aspect of enabling the organization to achieve the intended benefits and goals—this was rated at an average of 4.05 (+/-0.99) points on a 5-point scale. The project is considered effective by the respondents when it is well-rated and received by stakeholders,

ranking second to last on the priority list—this aspect was rated at an average of 2.82 (+/-1.04) points.

On the other hand, elements delivered by the project that allow users/end recipients to achieve intended benefits were rated as effective, with an average score of 3.05 (+/-1.19) points on the scale. The least related to project effectiveness, according to the average points assigned to this response (an average of 1.44 (+/-0.95) points), is the aspect in which the project fully utilizes the intellectual potential and experience of the team.

**Table 13.** *Quantitative characteristics after converting responses to the Likert scale - question no. 24.*

| Variable                                                                                            | Parameter      | Total (N=130) |
|-----------------------------------------------------------------------------------------------------|----------------|---------------|
| Was completed within time/budget/scope                                                              | N              | 130           |
|                                                                                                     | Mean (SD)      | 3,64 (1,29)   |
|                                                                                                     | Median (Q1-Q3) | 4 (3 - 5)     |
|                                                                                                     | Scale          | 1 - 5         |
| Enabled the organization to achieve the intended benefits and goals                                 | N              | 130           |
|                                                                                                     | Mean (SD)      | 4,05 (0,99)   |
|                                                                                                     | Median (Q1-Q3) | 4 (4 - 5)     |
|                                                                                                     | Scale          | 1 - 5         |
| Was well-rated and received by stakeholders                                                         | N              | 130           |
|                                                                                                     | Mean (SD)      | 2,82 (1,04)   |
|                                                                                                     | Median (Q1-Q3) | 3 (2 - 3)     |
|                                                                                                     | Scale          | 1 - 5         |
| The elements delivered by the project allowed users/end recipients to achieve the intended benefits | N              | 130           |
|                                                                                                     | Mean (SD)      | 3,05 (1,19)   |
|                                                                                                     | Median (Q1-Q3) | 3 (2 - 4)     |
|                                                                                                     | Scale          | 1 - 5         |
| Fully utilized the intellectual potential and experience of the team                                | N              | 130           |
|                                                                                                     | Mean (SD)      | 1,44 (0,95)   |
|                                                                                                     | Median (Q1-Q3) | 1 (1 - 1)     |
|                                                                                                     | Scale          | 1 - 5         |

**Source:** *Own elaboration.*

The normality test for the data distributions of the calculated mean responses given on the Likert scale for answers no. 1, 3, and 5, as well as for the two remaining ones, confirmed that these distributions did not exhibit normality or equality of variances.

**Table 14.** *The normality test between the means calculated from options - Shapiro-Wilka test.*

| Variable                              | Statistics | p-value |
|---------------------------------------|------------|---------|
| The mean score of option 1, 3, and 5. | 0,897      | <0,001  |
| The mean score of option 2, and 4.    | 0,897      | <0,001  |

**Source:** *Own elaboration.*

**Table 15.** *Test of equality of variances between the means calculated from selected options 2 and 4, and options 1, 3, and 5 - Bartlett's test.*

| Variable                                                                            | Statistics | p-value |
|-------------------------------------------------------------------------------------|------------|---------|
| Comparison between the means of selecting answers 2 and 4, and answers 1, 3, and 5. | 20,6       | <0,001  |

**Source:** Own elaboration.

Therefore, a non-parametric Wilcoxon test was conducted to test the hypothesis and thresholds were set

- Statistical significance:  $p < 0.05$  (standard threshold for non-parametric tests)
- Effect Size ( $r = Z/\sqrt{N}$ ), which was adapted from Cohen's criteria for non-parametric tests:
  - $r < 0.20$ : No effect (Hypothesis rejected)
  - $0.20 \leq r < 0.35$ : Small effect (Hypothesis partially supported)
  - $r \geq 0.35$ : Medium to large effect (Hypothesis strongly supported)
- Mean Difference:
  - Difference  $< 0.5$  points on Likert scale: No practical significance
  - Difference  $\geq 0.5$  points: Practical significance
  - Justification: half-point difference represents substantial practical difference given the nature of benefits assessment

The results indicated a statistically significant difference between the distributions of the means calculated for responses to option 1, 3, and 5, compared to those calculated for responses to option 2 and 4.

Furthermore, this difference showed that respondents significantly rated categories 2 and 4 higher than the other three. The conclusions drawn from the test thus support the general conclusion regarding the research hypothesis, confirming that the effectiveness of IT projects is linked to the benefits delivered to end users and the organization.

**Table 16.** *Wilcoxon test verifying the difference between the means calculated from groups of responses.*

| Variable      | Parameter | Mean of options no 1., 3. and 5. (N=130) | Mean of options no 2. and 4. (N=130) | test     | p-value | Mean difference (SD) | 95% CI       |
|---------------|-----------|------------------------------------------|--------------------------------------|----------|---------|----------------------|--------------|
| Mean score of | N         | 130                                      | 130                                  | Wilcoxon | <0,001  | 0,92 (0,08)          | (0,76; 1,08) |
|               | Mean(SD)  | 2,63 (0,52)                              | 3,55                                 |          |         |                      |              |

| Variable                                   | Parameter      | Mean of options no 1., 3. and 5. (N=130) | Mean of options no 2. and 4. (N=130) | test | p-value | Mean difference (SD) | 95% CI |
|--------------------------------------------|----------------|------------------------------------------|--------------------------------------|------|---------|----------------------|--------|
| option 2. And 4. compared to 1., 3. and 5. |                |                                          | (0,78)                               |      |         |                      |        |
|                                            | Median (Q1-Q3) | 2,67 (2 - 3)                             | 3,5 (3 - 4,5)                        |      |         |                      |        |
|                                            | Scale          | 2 - 4                                    | 1,5 - 4,5                            |      |         |                      |        |

**Source:** Own elaboration.

Given the above results and meeting all 3 threshold criteria ( $p=0.001$ ,  $r = 1.42$ , and Likert scale mean difference being closer to 1 point), the hypothesis was not rejected.

## 5. Discussion

### 5.1 Understanding of Project Effectiveness

Our findings reveal a nuanced understanding of project effectiveness among IT project management professionals. Primarily, effectiveness is associated with achieving organizational benefits and goals, followed closely by adherence to traditional project constraints of time, budget, and scope. This aligns with the evolving perspective in project management literature that emphasizes value creation over mere output delivery (Zwikaël and Smyrk, 2012).

Interestingly, the utilization of team potential was rated lowest in terms of effectiveness. This finding presents a thought-provoking contrast to academic theories that emphasize the importance of team dynamics in project success, however similar observations were also made in the past (Joslin and Müller, 2016; Mir and Pinnington, 2014).

It suggests a potential misalignment between theoretical frameworks and practitioner focus, which may be driven by the pressure to deliver tangible outcomes in the fast-paced IT sector. This discrepancy offers an opportunity for organizations to enhance overall effectiveness by better leveraging their human resources and reconsidering how team potential contributes to long-term project success.

### 5.2 Compensation and Project Effectiveness

Our results indicate a positive relationship between performance-based compensation and perceived project effectiveness, supporting agency theory predictions that aligning incentives can drive desired behaviors (Eisenhardt, 1989). However, the moderate strength of this relationship suggests that other factors also play significant roles in determining project outcomes.

The correlation between compensation structures and project effectiveness can be attributed to several underlying mechanisms. First, performance-based compensation creates a direct link between individual effort and rewards, addressing the principal-agent problem common in project management contexts. This alignment appears particularly effective in software development projects, where deliverables are more easily quantifiable compared to infrastructure projects.

Additionally, the implementation of performance-based compensation effectively transfers some project risk to project managers, potentially leading to more careful project planning and execution. However, this risk transfer may also result in risk-averse behavior, particularly in innovative or experimental projects where failure is an inherent possibility. Furthermore, our findings suggest that the effectiveness of performance-based compensation varies across project lifecycle stages. Early-stage activities, such as requirements gathering and architectural design, showed weaker correlations with performance incentives compared to execution and delivery phases.

The moderate strength of the compensation-effectiveness relationship raises important questions about potential limiting factors. The complexity of IT projects makes it difficult to establish comprehensive performance metrics that capture all valuable contributions.

This limitation may lead to an overemphasis on easily measurable outcomes at the expense of harder-to-quantify factors like knowledge transfer or technical debt reduction. In line with motivation theory research, excessive focus on extrinsic rewards may diminish intrinsic motivation, particularly among highly skilled IT professionals.

This effect could partially explain why the compensation-effectiveness relationship is not stronger. Moreover, the effectiveness of performance-based compensation appears to vary significantly based on organizational culture, project type, and team composition. Organizations with strong collaborative cultures, for instance, showed weaker correlations between individual performance incentives and project outcomes.

These findings suggest several important implications for compensation design in IT project management. Organizations should consider developing more sophisticated compensation structures that combine both fixed and variable components, allowing for risk-sharing while maintaining basic security.

Performance measures should encompass both short-term project outcomes and long-term value creation, including factors such as technical quality, knowledge transfer, and stakeholder satisfaction. Given the collaborative nature of IT projects, organizations might benefit from balancing individual performance incentives with team-based rewards to promote cooperation and shared responsibility.

This finding contributes to the ongoing debate about the efficacy of performance-based pay in complex knowledge work environments. While our results support the use of such compensation structures, they also highlight the need for a more nuanced approach. The complexity and uncertainty inherent in many IT initiatives may make it challenging to establish clear, measurable performance criteria that comprehensively capture project effectiveness.

Unexpectedly, we found that the impact of compensation structures varied across different types of IT projects. For instance, the relationship between performance-based pay and effectiveness was stronger in software development projects compared to infrastructure projects. This variation may be due to differences in project timeframes, deliverable tangibility, and the ease of defining success metrics across project types. Future research could explore these differences more deeply to develop more tailored compensation strategies for different IT project contexts.

### **5.3 Methodology Alignment and Project Effectiveness**

The strong relationship observed between methodology alignment and project effectiveness underscores the importance of tailoring project management approaches to organizational contexts. This finding extends beyond simple methodology selection to encompass broader organizational dynamics and adaptation processes and supports previous research emphasizing the need for fit between methodology and organizational processes (Joslin and Müller, 2015).

Several key factors appear to drive the methodology alignment-effectiveness relationship. Process compatibility serves as a fundamental driver, as organizations with well-aligned methodologies demonstrate smoother information flow, reduced coordination overhead, and more effective resource allocation. This suggests that methodology alignment serves as a crucial interface between project execution and organizational operations.

Cultural congruence plays an equally important role, as the effectiveness of methodology alignment appears strongly influenced by organizational culture. Organizations with cultures emphasizing flexibility and adaptation showed higher success rates in methodology alignment compared to those with more rigid, hierarchical structures.

Furthermore, well-aligned methodologies facilitate better stakeholder engagement by providing familiar frameworks and communication channels that resonate with organizational norms.

The variation in alignment effects across different methodologies reveals important patterns. Agile methodologies show stronger positive correlations with effectiveness in organizations with flexible processes and flat hierarchies. However, this

advantage diminishes in organizations with rigid governance structures. Traditional methodologies demonstrate better alignment in organizations with established hierarchies and formal processes, but may impede innovation and rapid response capabilities.

Organizations employing hybrid methodologies show varying degrees of success, largely dependent on their ability to maintain consistency while allowing for contextual adaptation. This finding contributes to the ongoing debate about the universality of project management methodologies and supports a contingency view of methodology selection (Sausser *et al.*, 2009).

An unexpected finding was the relatively low importance attributed to methodology selection compared to methodology alignment. This suggests that how a methodology is implemented and adapted to organizational processes may be more critical than the choice of methodology itself. This insight challenges the often-heated debates about the superiority of one methodology over another and shifts focus to the importance of thoughtful implementation and ongoing adaptation. when selecting and implementing.

Also organizations often underestimate the organizational change management required for effective methodology alignment, leading to implementation challenges. Existing organizational processes may resist adaptation, particularly in large organizations with established procedures. Additionally, successful methodology alignment requires specific competencies that may not be readily available within the organization. project management methodologies.

## **5.4 Implications for Theory and Practice**

The findings from this study contribute significantly to both theoretical understanding and practical application of project management principles. From a theoretical perspective, our results support and extend contingency theory in project management by demonstrating how different organizational contexts require varying approaches to both compensation and methodology alignment.

The findings suggest a need to refine agency theory applications in project management, particularly regarding the role of intrinsic motivation and team dynamics. Moreover, the study contributes to understanding how project methodologies evolve and adapt within organizational contexts, suggesting a more dynamic view of methodology selection and implementation.

From a practical standpoint, organizations must carefully consider their structural readiness for different project management approaches. Investment in organizational change management capabilities becomes crucial, as does the development of adaptive governance frameworks that can accommodate different methodological approaches.

In terms of compensation strategy, organizations should focus on developing more sophisticated models that account for project complexity, while integrating team-based incentives with individual performance measures. The creation of balanced scorecards that capture both short-term and long-term project value becomes essential for sustainable success.

Methodology implementation requires careful attention to customization and adaptation within the organizational context. Organizations should focus on developing hybrid approaches that can accommodate different project types while investing in training and development to build necessary competencies. The impact of technological evolution, particularly artificial intelligence and automation, will likely continue to shape project management practices, necessitating new approaches to virtual and distributed team management.

The ongoing evolution of organizational structures suggests a shift toward more flexible and adaptive approaches, with growing emphasis on knowledge management and organizational learning. This evolution creates new demands for project management competencies, combining technical expertise with strong managerial capabilities. The increasing importance of change management and stakeholder engagement skills suggests a need for evolution in project management education and certification programs.

## **6. Conclusions**

This study set out to investigate the complex interplay between project management effectiveness, compensation structures, and methodology alignment in IT projects. Our findings reveal several key insights that contribute to both the theoretical understanding of project management and its practical application in the IT sector.

First, our research underscores that project effectiveness in IT contexts is a multifaceted concept. While traditional metrics such as time, budget, and scope remain important, practitioners increasingly recognize the critical role of delivering organizational benefits and achieving strategic goals. This alignment between project outcomes and organizational objectives represents a significant shift in how project effectiveness is conceptualized and measured.

Second, our study provides empirical evidence supporting the positive influence of performance-based compensation on project effectiveness. However, the moderate strength of this relationship suggests that compensation is just one piece of a larger puzzle. Organizations must carefully design compensation structures that balance short-term project deliverables with long-term value creation, particularly given the complex and often unpredictable nature of IT projects.

Third, our findings highlight the crucial role of methodology alignment in project success. The strong relationship between methodology alignment and project effectiveness emphasizes the need for organizations to thoughtfully adapt project management approaches to their specific contexts, rather than adopting one-size-fits-all solutions.

Perhaps most significantly, our research demonstrates the importance of an integrated approach to project management. The interaction effects observed between compensation structures and methodology alignment suggest that these factors should not be considered in isolation. Organizations that can successfully harmonize these elements are likely to see substantial improvements in project outcomes.

These findings have important implications for both theory and practice. From a theoretical perspective, our study contributes to the ongoing evolution of project management frameworks, suggesting the need for more holistic models that account for the interplay between various organizational and human factors. For practitioners, our research underscores the importance of a systemic approach to project management, where compensation, methodology, and organizational processes are aligned to drive project effectiveness.

As organizations continue to rely heavily on IT projects to drive innovation and achieve strategic objectives, the insights from this study become increasingly valuable. By focusing on the synergies between compensation structures, methodology alignment, and organizational goals, companies can enhance their project management practices and improve their ability to deliver successful IT initiatives.

In conclusion, while this study provides valuable insights, it also opens up new avenues for future research. As the IT landscape continues to evolve rapidly, there is an ongoing need to reassess and refine our understanding of project effectiveness. Future studies could explore how emerging technologies, changing work paradigms, and global challenges impact project management practices and outcomes.

## **7. Limitations and Future Research**

This study's primary limitation stems from its cross-sectional design, which restricts our ability to establish causal relationships between all variables. While our findings demonstrate strong correlations between compensation or methodology alignment, and project effectiveness, the temporal dynamics of these relationships remain unclear.

A longitudinal study would be better positioned to track how changes in those areas impact project outcomes over time, as well as how these relationships evolve as organizations mature and adapt their project management practices. Such an

approach could also reveal potential feedback loops between project success and subsequent adjustments to management practices.

The sample composition, while diverse, presents another limitation that may affect the generalizability of our findings. Although we gathered data from various organizations and geographical locations, certain industry sectors and project types may be underrepresented. The predominance of responses from large organizations, particularly in the technology sector, might not fully capture the dynamics present in smaller organizations or different industries.

Furthermore, regional variations in project management practices and organizational cultures could influence the relationships we observed, suggesting the need for more targeted studies within specific contexts.

The reliance on self-reported perceptions of effectiveness represents a methodological limitation that warrants consideration. While participant perceptions provide valuable insights into project dynamics, they may be subject to various biases, including social desirability bias and retrospective rationalization.

The integration of objective measures of project outcomes, such as financial metrics, customer satisfaction indices, or technical performance indicators, would provide a more comprehensive assessment of project effectiveness. However, obtaining such objective data across diverse organizations and project types presents significant practical challenges.

The inherent complexity of IT projects introduces another limitation to our study. While we focused on compensation and methodology alignment as key variables, numerous other factors influence project outcomes. These might include team composition, technological complexity, stakeholder relationships, and external market conditions.

The interaction effects between these variables could be substantial and merit further investigation. Additionally, the rapid evolution of technology and project management practices means that some findings may become less relevant as new approaches and tools emerge.

The study's focus on traditional and agile methodologies, while reflecting current industry practices, may not fully capture the nuances of emerging hybrid and tailored approaches. As organizations increasingly adopt customized project management frameworks that combine elements from multiple methodologies, understanding the effectiveness of these hybrid approaches becomes crucial.

The dynamic nature of methodology adaptation and its relationship with organizational context requires more detailed examination, particularly as new methodological frameworks continue to emerge.

Future research could address these limitations through several promising directions. In-depth case studies focusing on organizations that have successfully aligned their compensation structures, methodologies, and organizational processes could provide valuable insights into effective implementation strategies.

These studies could examine the specific mechanisms through which alignment is achieved and maintained, as well as the challenges encountered and overcome during the process. Such research would be particularly valuable for organizations attempting to improve their project management practices.

The development and validation of more comprehensive models of IT project effectiveness represents another important avenue for future research. These models should incorporate both traditional success metrics and emerging factors such as innovation potential, knowledge creation, and long-term sustainability.

Researchers could work to develop more sophisticated measurement frameworks that capture the multidimensional nature of project success while remaining practical for organizational use.

The impact of emerging technologies on project management practices deserves particular attention in future research. As artificial intelligence, blockchain, and other advanced technologies become more prevalent in project management, understanding how these tools affect methodology alignment and project effectiveness becomes crucial.

Research could examine how organizations adapt their project management approaches to leverage these technologies effectively while maintaining alignment with organizational processes and goals.

Cultural and regional differences in project management practices and effectiveness perceptions represent another fertile area for future investigation. Cross-cultural studies could examine how different cultural contexts influence the relationship between methodology alignment and project success, as well as how compensation structures might need to be adapted for different cultural settings. Such research could help organizations operating in multiple regions develop more effective global project management strategies.

These future research directions would contribute significantly to both theoretical understanding and practical application of project management principles.

By addressing the limitations of the current study while exploring new areas of inquiry, researchers can continue to advance our knowledge of effective project management practices in an increasingly complex and dynamic business environment.

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