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Agility vs. Tradition: A Slovak Perspective on Modern Project Management

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Abstract
Agile Project Management (APM) is a widely adopted methodology, recognized for its adaptability, iterative delivery, and collaborative customer engagement. This study compares APM adoption in the Slovak Republic with global trends, utilizing empirical data from two surveys. The first survey comprises responses from 116 Slovak companies; the second draws data from the 17th State of Agile Report. The research assesses the extent of APM implementation in Slovakia, identifies key benefits, and investigates specific barriers to broader adoption. Findings reveal that while Slovak organizations report improvements in competitiveness, customer satisfaction, and delivery speed—consistent with global patterns—significant deficiencies persist in agile maturity, management support, and organizational culture alignment. These insights underscore the necessity for targeted investments in training, leadership engagement, and agile maturity assessment to fully leverage APM's potential within the Slovak business environment.

Keywords
Agile Benefits, Agile Manifesto, Changes, Surveys Comparison, Traditional Project Management.

Introduction

Organizations operating in today's dynamic business environment are under increasing pressure to adapt, innovate, and respond rapidly to evolving market demands. This necessitates effective change management and agile methodologies, designed to enhance adaptability, mitigate risk, and improve stakeholder engagement. Agile Project Management (APM), in particular, provides a flexible framework fostering iterative development, customer collaboration, and accelerated value delivery (Azanha et al., 2017; Helmlinger, 2023).

The adoption of agile practices now extends beyond the software industry, representing a strategic imperative across diverse sectors. Agile transformation necessitates a fundamental shift encompassing processes, organizational mindset, and leadership behaviour. Organizations adopting agile methodologies report improvements in time-to-market, operational efficiency, and client satisfaction (van de Poll and Duricic, 2024; Usifo, 2023). Successful implementation, however, hinges on sustained leadership engagement, continuous learning, and a supportive organizational culture.

Leadership is crucial in enabling agile adoption. Managers must transition from directive to facilitative leadership, guiding cross-functional teams, fostering experimentation, and ensuring alignment with agile principles (Shah et al., 2022). The Slovak business environment, with its robust industrial base and evolving competitiveness, presents both unique challenges and opportunities for agile adoption.

This study investigates the current state of Agile Project Management in the Slovak Republic. Through a comparative analysis of empirical findings from a national survey and global trends reported in the 17th State of Agile Report, the research identifies key drivers, barriers, and opportunities for agile adoption within Slovak enterprises. The study provides insights into the interpretation of agile principles by Slovak organizations and their alignment or divergence from international best practices.

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Literature review

Traditional project management is the process of planning, executing, and monitoring a series of tasks to achieve a predefined goal. As well there are included agreed requirements within budget and within a specified time frame. In a traditional workflow the project team plans the entire project step by step, that means from start to finish (Calvello, 2021; Zwerenz, 2019; Nooshin and Norang, 2016; Baccarini, 1999). Project selection and prioritisation shape organisational performance by directing scarce resources towards initiatives that deliver strategic and operational value (Chathuranga et al., 2023). Within organisations, project management practices coordinate interdependent activities, schedules, and resources, which influences delivery performance in product development and launch projects (Fabo et al., 2023).

Traditional vs. Agile Project Management Approaches

When it comes to comparing traditional and agile project management, the traditional one is also called waterfall. It focuses attention on the specialization of experts for individual phases of projects and where one project manager is used as standard. These phases typically include demand analysis, development, testing, implementation into production and others. To ensure a continuous transition between individual phases in the waterfall approach, one phase must first be fully completed and only then will the project be handed over to the next phase. It should be noted that the possibility of going back to previous phases is very difficult, as well as to find the flaws that caused problems in delivering a solution for customers (Doležal et al., 2016).

Evolving requirements during execution challenge strictly sequential lifecycles, because late changes propagate into rework and schedule disruption. In contrast to the mentioned traditional, there is an agile approach to project management. Agile delivers solutions or deliverables to customers incrementally, in small steps, and within clearly defined time intervals, typically set at the beginning of the project (most commonly in two-week cycles). Cooperation with the customer takes place from the beginning to the end of the project, especially when finalizing the initial specification, which is finalized during the implementation of the project according to the customer's requirements. All steps are managed by a self-organized team (Březina, 2020).

For comparison, there are two approaches to project management. The traditional waterfall method, which, due to its rigid structure and complexity in delivering solutions, can lead to significant financial losses and often fails to provide the expected value. Or the new agile a way of project management that delivers more with fewer people and less time, at higher quality and at lower cost (Sutherland, 2015).

Principles and Philosophy of Agile Project Management

Cost management spans planning, iterative delivery, and closure, supporting cost control and timely corrective actions across the project life cycle. It impacts not only the organization but all project stakeholders. In agile delivery, cost prediction and monitoring support capacity planning and funding decisions. Therefore, effective cost management is crucial for a successful agile implementation, as a weak cost control may increases the risk of budget overruns, resource bottlenecks, and scope-cost misalignment (Zhou et al., 2024).

As Moira (2023) described that agile project management is a methodology, that was mainly used in IT infrastructure and IT development. This encourages adaptability and customer cooperation, such as incorporating client needs into the project's life cycle. To concentrate on continuous improvement in the incremental delivery of goods or services, the methodology employs an iterative approach to the creation of the final product, dividing work into small, manageable cycles known as "sprints". A sprint is a short, timebound period, usually lasting two weeks, during which a certain product functionality is delivered.

According to Gaba (2023), agile project management is not a set of rules but a way of thinking. Agile approach and implementation of his methods allow businesses to create and deploy products more rapidly while maintaining customer satisfaction.

Agile project management emphasises timeboxed iterations, incremental delivery, and continuous reprioritisation based on stakeholder feedback. Ongoing stakeholder involvement enables teams to refine requirements during delivery and reprioritise work based on feedback, reducing late-stage misalignment between expectations and delivered outcomes. This incremental and iterative approach signifies a significant milestone, that the company's agility can be a suitable resource of competitive edge (Revutska, 2022).

To enhance understanding of agile and its principles, the agile manifesto was created. The agile manifesto is a streamlined expression of the core and important values of agile project management and agile product development. Through using the agile manifesto, users are given a springboard on how to quickly implement agile practices into their products (Layton et al., 2020; Yücenur, 2023). As Apke (2015) and Eby

(2016) emphasizes that while the manifesto has greatly influenced software development, its broader adoption in project management has been slower. Serrador and Pinto (2015) critique the fact, that many managers still fail to fully understand or implement agile's principles, such as facilitating teams rather than controlling them. Similarly, Taylor (2016) explored the tension project managers face when transitioning from traditional "command and control" roles to more facilitative roles, as required by agile methodologies. Authors emphasised, that many managers struggle with relinquishing control, which hinders the full adoption of agile principles in project management beyond software (Stare, 2013; Lipovetsky et al., 1997; Lagerberg et al., 2013).

Cross-Industry Adoption

The agile manifesto consists of four foundational values (Fig. 1) and twelve supporting principles which lead the agile approach in the development of the entire project. All in all, each agile methodology applies the four values in separate or different ways. The values and principles of the Agile Manifesto provide a basis for aligning method-specific practices and evaluating whether delivery behaviour remains consistent with agile intent (Eby, 2016).

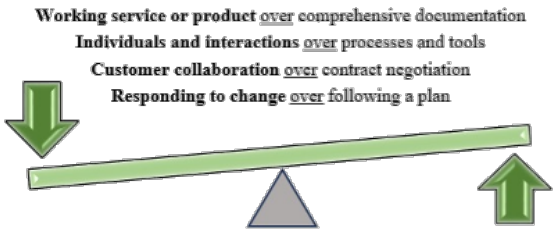

Fig. 1. Agile manifesto (developed by the authors based on Apke, 2015)

Agile project management was most often used in connection with developments in the field of information technology. Empirical studies report adoption of agile practices beyond software, including product development and project-based work in construction, manufacturing, and automotive contexts (Chathuranga et al., 2023; Ferreira and Nobre, 2022; Dong et al., 2022).

Authors from the University of Kelaniya, India report on the boom in the use of agile outside of the IT sector. They state that utilizing agile project management techniques is appropriate and can also be implemented for construction companies. They state that these companies use the benefits of agile, especially at the stage of project design and creation (Chathuranga et al., 2023).

As another example of the use of agile outside the IT sector, it is possible to cite researchers from Brazil who describe in their article a positive dynamic in skills using agile project management in the case of product development for the automotive industry. They report several improvements, including enhanced communication, increased efficiency, and overall higher motivation (Ferreira and Nobre, 2022).

Dong et al. (2022) describe agile application in domains such as new product development, operational processes, organisational change, and service development. They associate agility with improved alignment of team performance expectations and delivery outcomes in project environments.

According to Galli (2022), we should always keep in mind that without the use of agile project management, it is increasingly difficult to implement any strategic projects as well as to create good relationships with customers. He points out that the agile way of working is not just a fad or a new fashion. Agile development focuses on the implementation of users' needs in the final product and thus uses a step-by-step delivery approach. It also presents several positive opinions on the necessity and meaningfulness of setting up and managing communication flows in agile projects. Regular, structured communication is therefore treated as a mechanism for reducing coordination failures and maintaining delivery focus in agile project environments (Galli, 2022).

Materials & Methods

This section details the methodology employed to acquire data on the adoption of Agile Project Management (APM) within companies in the Slovak Republic. Primary data was collected via a questionnaire survey. This method was selected for its directness in respondent engagement, facilitating a clear and objective interpretation of results, and enabling outreach to a substantial number of companies. Furthermore, an established international survey provided a basis for comparing primary findings with global trends. This section therefore details the primary survey's design and data collection, followed by a description of the secondary survey, which provides global insights from project managers.

Primary survey

The primary survey, targeting APM adoption in Slovak companies, utilized a 16-question questionnaire, structured into two distinct sections. The first section comprised 5 questions designed to collect demographic data on respondents and their organizations, including company size (number of employees and

annual turnover), departmental affiliation, and job roles. The second section contained 11 questions addressing agile topics, including respondents' and their companies' APM experience, utilized agile methods, perceived benefits, and implementation challenges or shortcomings. Question formats included single-choice and multiple-choice options, with some questions allowing for open-ended responses. The questionnaire was initially drafted in MS Excel and then deployed on an online platform for data collection. This approach facilitated efficient distribution to respondents. Respondents completed the questions in a predetermined sequence. The questionnaire facilitated the collection of a substantial number of responses, enabling reliable evaluation, comparison, and interpretation of results. Questionnaire distribution and data collection occurred over a 6-week period from September to October 2023. Initially, an email containing a brief description and a link to the online questionnaire was sent to over 350 companies. This yielded 89 responses, representing a 23% response rate. Subsequently, additional data was collected via interviews conducted through Microsoft Teams. This platform facilitated direct engagement, enabling the collection of 27 further completed questionnaires. The use of MS Teams provided a flexible alternative for data acquisition, complementing the initial survey with direct respondent interaction. The final sample for analysis comprised 116 responses (89 from the initial questionnaire + 27 from MS Teams interviews).

Secondary survey

The secondary survey provided insights into global agile trends, serving as a basis for comparing findings from the primary survey. This comparison facilitated the identification of APM maturity levels in Slovak companies, highlighting areas for strategic development. The '17th State of Agile Report,' conducted globally in 2023, was selected as the secondary data source. This survey was chosen due to its extensive respondent base and high reporting reliability, stemming from its 17-year history as an annual global benchmark. While generally conducted annually, there was a brief interruption during the Covid-19 pandemic. The secondary dataset comprised 788 respondents. Regarding organizational size, approximately 30% of respondents were from companies with up to 1,000 employees, with an equal proportion from organizations exceeding 20,000 employees. Geographically, nearly half of the respondents were from North America. Europe accounted for over a quarter, followed by Asia (13%), South America (9%), Australia and New Zealand (3%), and Africa (2%) (Digital.ai, 2023).

Results

The analysis began with an evaluation of responses from the primary survey, followed by a comparative analysis using data from the secondary, global-level survey. This approach aimed to identify shared patterns, divergences, and limitations in the adoption of agile project management. The primary survey was structured into two key sections, from which two questions from the general information section were selected for initial assessment.

The first question explored the organizational hierarchy of the respondents by offering predefined categories. Results revealed that 39% held non-managerial positions, 31% were senior or top-level managers, and 25% served as middle managers or team leaders. An additional 5% chose the "other" option without specification. This distribution suggests a relatively balanced sample across organizational levels, which supports the credibility and generalizability of subsequent findings.

The second question examined the field of the respondents' organizations. As depicted in Figure 2, more than 76% of Slovak respondents reported working in industrial production. This is consistent with the Slovak Republic's strong industrial base, particularly its recent growth in automotive manufacturing and the supporting supplier ecosystem. In contrast, the global data set demonstrated a broader distribution, where more than a quarter of respondents are employed in the information technology field. Another answer, with 25%, pertains to a distinct sector from the listed options. With 17%, follows the field of financial services (bank and insurance) and with 7% are respondents from healthcare and the pharmaceutical industry. These differences highlight the industrial concentration of Slovak enterprises relative to global industry segmentation.

This section of the primary survey examined APM experience simultaneously at the individual and organizational levels. The first question focused on respondents' personal familiarity with agile methodologies. Approximately one-third reported having no prior APM experience, while 39% identified as beginners. Additionally, 21% indicated an advanced level of experience, and only 8% classified themselves as experts.

The second question assessed organizational engagement with APM. As illustrated in Figure 3, nearly 51% of participating companies had adopted agile practices for more than one year, suggesting a moderate level of organizational maturity. A detailed breakdown reveals that 18% of companies had used APM for one to three years, 13% for four to six years, and 10% for over seven years. In contrast, 37% of organizations reported no

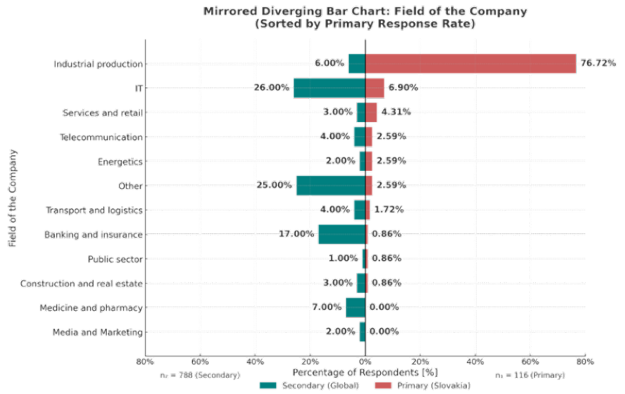

Fig. 2. Field of the companies where the surveyed respondents worked (Sources: developed by the authors using Python, based on RE-SA, 2023)

agile experience – which indicates the parallel existence of both, developed and absent, agile adoption within the Slovak enterprise environment.

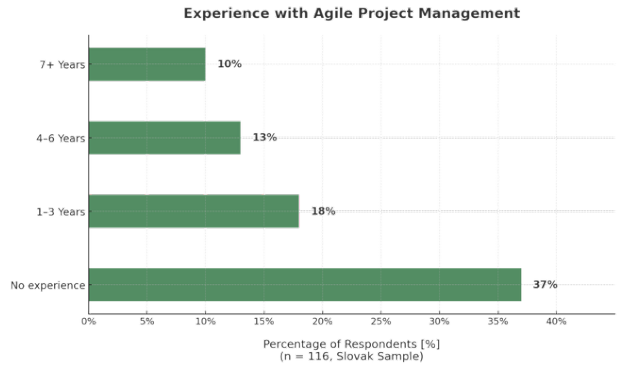

Fig. 3. Experience with agile project management at the companies where the respondents work (Sources: developed by the authors using Python)

This phase of the analysis examined three additional aspects from the agile section of the primary survey. The first question asked respondents to evaluate the impact of APM on their organization's overall performance. More than 70% rated this impact as significantly positive, while 12% perceived it as neutral or negative. A notable 18% selected "do not know," indicating either limited exposure (of respondents) or uncertainty in assessing agile-related outcomes. The second question explored perceptions of the measurable effects of agile transformation. As shown in Figure 4, the most frequently selected benefit was improved competitiveness (57.76%), closely followed by customer satisfaction (56.90%). These results suggest that sustained collaboration and trust-based relationships with clients—core principles of agile methodologies—may contribute directly to enhanced competitive positioning and customer value. The third most frequently identified benefit was variability of product (51.72%), allowing organizations' ability to flexibly respond to changing customer requirements and shifting market dynamics. This adaptability, enabled by agile practices, supports rapid adjustment of priorities within the product development cycle.

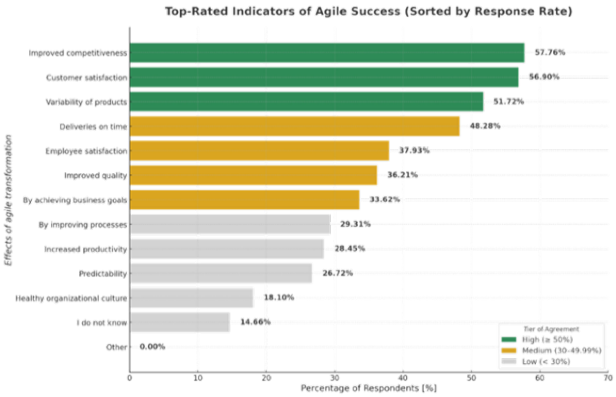

Fig. 4. Key benefits of agile transformation (Sources: developed by the authors using Python)

Table 1 presents a comparative summary of findings from the primary (Slovak survey on the left) and secondary (global survey on the right) surveys, focusing on the perceived benefits of agile transformation. The primary survey serves as the reference point, with

Table 1
Comparison of response variability with respect to the primary survey

Positive effects resulting from agile transformation (primary survey)	*Concrete benefits of agile adoption (secondary survey)*
Improved competitiveness (58%)	Faster response to competitive threats (18%)
Customer satisfaction (57%) Variability of products (52%) Deliveries on time (48%) Employee satisfaction (38%) Improved quality (36%) By achieving business goals (34%) By improving processes (29%) Increased productivity (28%) Predictability (27%) Healthy organizational culture (18%)	Increased collaboration (59%) Better alignment to business needs (57%) Increased time for innovation (13%) Better work environment (36%) Better quality software delivered (25%) × Increased visibility across the SDLC (21%) Increased product adoption (9%) × ×

responses sorted in descending order to enhance clarity and readability. For each identified benefit in the primary survey, corresponding or conceptually similar items from the secondary survey were aligned alongside, enabling direct comparison. This structure highlights variations in how respondents from different contexts prioritize key agile outcomes, such as competitiveness, customer satisfaction, and variability of products. Cells marked with an "x" indicate instances where no clear conceptual match could be established due to limited overlap, differing formulations, or contextual irrelevance between the two datasets.

Figure 5 presents a visual comparison of response frequencies from both the primary (Slovak) and secondary (global) surveys. Results from the primary survey are expressed as percentages, enabling direct interpretation of how respondents prioritized the perceived benefits of APM. In the Slovak sample, the most frequently selected advantages of agile adoption were improved competitiveness, customer satisfaction, product variability, and on-time delivery. In contrast, global respondents placed greater emphasis on increased customer collaboration and better alignment with business needs. Notably, Slovak respondents placed a significantly higher priority on enhanced competitiveness compared to global survey.

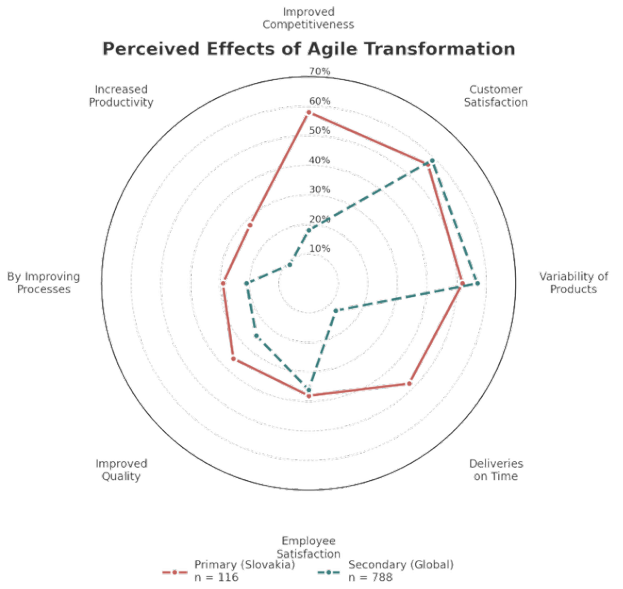

Fig. 5. Comparison of surveys results (Sources: developed by the authors using Python)

This divergence in priorities likely reflects Slovakia's unique economic conditions and industrial orientation. Slovak enterprises often view agility as a strategic tool to enhance responsiveness, accelerate growth, and sustain competitiveness in volatile regional markets. Agile principles (particularly flexibility and rapid adaptation) are therefore perceived as mechanisms for survival and differentiation. While Slovak organizations tend to emphasize technical and process efficiency in their agile adoption, global trends increasingly highlight the importance of communication, adaptability, and ongoing collaboration with customers. These contrasting emphases suggest that differences in agile perception originate from varying strategic goals, organizational cultures, and stages of agile maturity across national contexts.

Figure 6 presents a comparative overview of the five most frequently reported obstacles to agile adoption in the Slovak (primary) and global (secondary) surveys. In Slovakia, the most selected barrier was a technology-centric organizational structure (58.62%), which limits cross-functional collaboration and restricts broader stakeholder involvement. This was followed by resistance to change (54.31%) and insufficient management support (50%), underscoring the critical role of cultural readiness and executive sponsorship in agile transformation. Additionally, 44.83% of respondents noted that project teams required a clear understanding of agile principles, while 37.93% choose weak leadership communication as a limiting factor. In contrast, global respondents most frequently identified resistance to change (47%) as the primary challenge, followed by weak leadership communication (41%) and a lack of management support (38%). Limited team understanding of agile practices (37%) and the absence of formal training or structured education (27%) were also significant barriers.

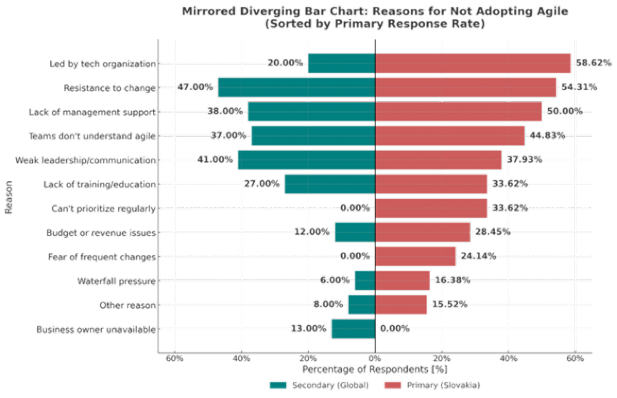

Fig. 6. Reasons why agile project management isn't being adopted (Sources: developed by the authors using Python)

Despite these contextual differences, both Slovak and global data converge on four critical obstacles: cultural resistance to change, inadequate management support, insufficient team-level comprehension of agile, and weak or inconsistent leadership communica-

tion. These shared barriers point out the foundational need for methodological competence, cultural alignment, consistent leadership engagement, and intentional knowledge transfer to support scalable and sustainable agile adoption.

These findings inform distinct strategic priorities. Slovak enterprises should focus on decentralizing agile governance, enhancing executive sponsorship, and promoting enterprise-wide agile fluency. Internationally, organizations should strengthen leadership communication, implement comprehensive training programs, and proactively address cultural resistance. Ultimately, targeted interventions addressing the four shared barriers offer a critical pathway toward achieving substantial and enduring outcomes in agile transformation across both contexts.

To assess whether the observed differences in reported barriers to Agile adoption between the Slovak (primary) and global (secondary) surveys are statistically significant, a hypothesis test was conducted. The null hypothesis (H0) assumed no significant difference between the two groups, while the alternative hypothesis (H1) posited that significant differences exist in the reasons organizations choose not to implement Agile methods.

Given that the responses were drawn from two independent groups, an independent Two-Sample t-Test was conducted. This test was appropriate for comparing mean values associated with barrier frequencies across the primary and secondary datasets. The confirmatory calculation was performed using the formula (1):

$$t = \frac{\left(\overline{X}_1 - \overline{X}_2\right)}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \tag{1}$$

where $\overline{X}_1$ and $\overline{X}_2$ are the average values from both samples, S_1^2 and S_2^2 are the sample variances, and n_1 and n_2 are the numbers of observations.

To calculate the variance for each sample, we use the following formulas (2):

$$S^2 = \frac{1}{n-1} \sum_{i=1}^{n} \left(X_i - \overline{X}\right)^2 \tag{2}$$

The empirical variance for both samples is calculated as follows:

$$S_1^2 = \frac{186561.24}{12-1} = \frac{186561.24}{11} = 16960.11$$

$$S_2^2 = \frac{4583.75}{12-1} = \frac{4583.75}{11} = 416.68$$

The calculated results for the individual values are as follows: $\overline{X}_1 = 161.53$; $\overline{X}_2 = 40.5$; $S_1^2 = 16960.11$; $S_2^2 = 416.68$; $n_1 = 788$; $n_2 = 116$.

By substituting these values into the t-test formula, we obtain:

$$t = \frac{(161.53 - 40.5)}{\sqrt{\frac{16960.11}{788} + \frac{416.68}{116}}}$$

The final calculation of the t-value yields:

$$t = \frac{121.03}{5.01} = 24.15$$

The calculation involved 788 observations from the secondary survey and 116 from the primary survey, yielding a total of 902 degrees of freedom. At a 0.05 significance level for a two-tailed test, the critical t-value was determined to be approximately $t_{\text{crit.}} = 1.962$. For the comparison, the calculated t-value, $t = 24.15$, substantially exceeded the critical threshold. Therefore, the null hypothesis was rejected, confirming the presence of statistically significant differences between the two groups regarding the perceived barriers to Agile adoption.

In addition to the shared barriers discussed earlier, each dataset included unique response categories that lacked direct counterparts in the other survey. These differences further illustrate context-specific obstacles to Agile transformation that reflect varying organizational structures, cultural dynamics, and strategic priorities.

Discussion

This study set out to examine and compare the current state of APM in the Slovak Republic with global trends, using two complementary data sources: a primary survey conducted among Slovak enterprises and the 17th Annual State of Agile global survey as a secondary benchmark. The objective was to identify key insights into the adoption, benefits, challenges, and future trajectory of APM within the Slovak context.

A central finding of this research is that Slovak organizations, as entities, tend to demonstrate a higher level of agile experience than individual respondents. This discrepancy suggests a gap between organizational-level implementation and practitioner-level familiarity. These results align with the observations of Aliber et al. (2022), who emphasized that agile-mature organizations typically provide broader access to agile metrics, data, and support structures (factors that foster increased performance, productivity, and team engagement).

Both the Slovak and global surveys confirmed recognition of APM's core benefits, yet notable differences were observed in how these benefits were

prioritized. Respondents in the global survey emphasized enhanced customer collaboration and alignment with business needs—findings that reflect a mature agile mindset centered on adaptability and responsiveness. In contrast, Slovak respondents predominantly associated APM with improved competitiveness. This divergence may reflect differing strategic priorities, market pressures, and cultural-economic conditions. One interpretation of the observed difference between Slovak and global companies concerns structural conditions. Slovakia's economy remains strongly export- and manufacturing-oriented. The automotive industry represents a substantial share of national output and exports, which may increase managerial emphasis on delivery performance, cost control, and productivity (AmCham Slovakia, 2025; OECD, 2024). Consistent with this, survey evidence from firms operating in Slovakia indicates a pronounced need to develop managerial competencies explicitly linked to competitiveness under conditions of technological change (Stacho et al., 2021). By contrast, empirical APM research reports positive associations between client collaboration, project agility, and project success, and identifies customer trust and collaborative routines as mechanisms supporting joint agility (Ciriello et al., 2022; Radhakrishnan et al., 2022). A second, complementary explanation relates to the phase of agile transformation: when agile adoption is oriented primarily towards stabilising delivery under competitive pressure, customer collaboration may remain secondary until governance arrangements, leadership practices, and cross-boundary coordination capabilities are more fully developed (Valackienė et al., 2024). Despite these distinctions, areas of convergence were clearly evident. Both samples highlighted customer satisfaction, internal cooperation, and product adaptability as central outcomes of agile transformation. These findings resonate with the conclusions of Masood and Farooq (2017), who underscored the importance of customer responsiveness and iterative product refinement in effective agile deployment.

However, it is important to acknowledge a methodological limitation: while the global dataset benefits from consistent longitudinal tracking, the Slovak survey was conducted as a single-instance measurement. This restricts the ability to confirm evolving trends within the Slovak context. Establishing a routine mechanism for monitoring APM adoption and maturity in Slovakia would not only support deeper insight but also strengthen future comparisons with global agile developments.

The analysis revealed commonalities in the perceived barriers to successful Agile transformation across both the Slovak (primary) and global (secondary) survey datasets. High response frequencies in both samples were observed for four core challenges: cultural resistance to change, inadequate management support, insufficient team-level comprehension of agile, and weak or inconsistent leadership communication. These findings align with prior studies, including those by Martins and Frederico (2023) and Shah et al. (2022), who similarly identified executive disengagement and lack of commitment as significant inhibitors to agile success. As expected, some divergences also emerged. The Two-Sample hypothesis test confirmed that differences in response distributions between the primary and secondary surveys were statistically significant. This underscores the importance of contextual variation in how organizations perceive and report barriers to Agile adoption.

Notably, the Slovak dataset highlighted two barriers not captured in the global survey: the inability to consistently prioritize work and a recurring fear of frequent changes in project planning. These context-specific obstacles may be symptomatic of rigid organizational structures, lower agile maturity levels, or regionally distinct business practices within Slovakia. Their absence in global data suggests that certain challenges to Agile transformation are more pronounced in the Slovak context and may require locally tailored interventions. Taken together, these findings reinforce the notion that while Agile transformation encounters broadly shared obstacles, successful implementation must also account for national, cultural, and organizational specificities.

Given the context-specific barriers identified within the Slovak environment, locally adapted solutions are imperative. For nations such as the Slovak Republic, characterized by a dominant manufacturing sector, a hybrid project management model is particularly suitable for Agile implementation. This assertion is grounded in the core principles of hybrid methodologies, which emphasize the selective deployment of Lean and Agile tools contingent on project uncertainty and complexity. Specifically, higher project uncertainty necessitates prioritizing agile methods to enable iterative planning and responsive adaptation. Conversely, for projects with well-defined outcomes and low variability, traditional or Lean-based tools prove sufficient. This situational approach ensures optimal alignment between project characteristics and management strategies. These recommendations are further substantiated by findings from case studies by Sommer (2019), Schotkamp and Danoesastro (2025), CloudBees (2020), which underscore the practical benefits of tailoring Agile adoption strategies to specific industrial and organizational contexts. A summary of the key findings from these case studies is presented in the following Table 2. These cases collectively demonstrate that integrating

elements from both traditional and agile methodologies, through a selective approach based on specific situational demands and identified challenges, yields greater efficiency than exclusive reliance on a single methodology. Further research is necessary to analyse a broader range of case studies, which could lead to the development of a comprehensive framework for identifying optimal hybrid project management combinations. While this study provides supportive evidence for these assertions, additional empirical data is required to substantiate these findings more robustly.

Table 2
Hybrid setup use cases from selected companies

Company	Hybrid setup	Measured outcome(s)
LEGO Group	Scrum sprints run within the existing Stage-Gate project model.	Project lead-times that had taken "months" were shortened to weeks, and teams reported higher enthusiasm for the new way of working.
ING Bank NL	Tribes & squads ship every two weeks, but still pass quarterly business-review and risk gates. legal / finance / risk sit outside squads and advise on demand.	Release cadence improved from 5-6 big launches / year → a live release every 2 weeks; transformation credited with faster feature delivery and higher mobile-bank leadership.
Bosch (automotive)	Continuous-integration/ continuous-delivery pipeline added to the traditional V-model compliance flow (implicit Water-Scrum-Fall pattern).	Build time cut 95% (three days → 2 h 20 min), plus greater transparency for management dashboards.

Conclusions

Based on the comparative analysis of the primary (Slovak) and secondary (global) surveys. APM in the Slovak Republic exhibits substantial alignment with international trends, although with distinct national characteristics. Slovak organizations tend to view agile transformation primarily as a strategic tool for enhancing competitiveness, whereas the global perspective emphasizes customer collaboration and alignment with business objectives. This difference suggests that successful APM implementation requires not only methodological competence but also a shift in cultural mindset and managerial practice.

Similar to global enterprises, Slovak organizations face common barriers to agile transformation, including resistance to change, limited experience with agile frameworks, and inadequate management support. These challenges can disrupt the transition process and reduce the performance of agile teams. As such, it is important for Slovak enterprises to invest in continuous employee education, engage with external agile mentors, secure active leadership participation, and foster an organizational culture that embraces agile values.

The findings also point the importance of conducting regular assessments of APM adoption. Unlike international practice, where longitudinal evaluations are common, Slovakia lacks consistent monitoring mechanisms. To address this gap, we recommend implementing biennial national surveys to track progress, identify emerging challenges, and guide strategic adjustments. Organizations can independently assess their current agile maturity using established models such as the "agile crawl, walk, run model", "agile maturity matrix", "scrum maturity model", "agility health radar" and the "agilometer." These tools provide structured insights into an organization's current level of agile integration, progress made, and areas for targeted improvement.

Additionally, our recommendations extend to organizations that have not yet adopted agile management methodologies. Such companies are encouraged to conduct preliminary analyses to identify areas within their operations suitable for the deployment of alternative, non-traditional project management models. This recommendation is underpinned by established findings demonstrating significant efficiencies and cost reductions achieved through the implementation of hybrid models.

In summary, Agile Project Management presents a significant opportunity for Slovak organizations to enhance operational efficiency, adaptability, and market competitiveness. However, its successful application demands not only technical expertise but also organizational readiness, particularly in terms of leadership commitment, cultural adaptability, and continuous knowledge development.

Based on the acquired knowledge, several directions for further research in the field of agile project management in Slovakia can be considered:

1. In-depth analysis of successful case studies. Identifying element that made successful implementation of agile methods in Slovak organizations.
2. To conduct an experimental study of the impact of agile project management on specific sectors in the Slovak economy. To compare the obtained results with the direction of the global economy regarding the size of companies, their focus and annual turnover.
3. Impact of agile management on organizational performance. Measuring the influence of agile practices on efficiency and productivity across different industries (Teplická et al., 2021).
4. Psychological aspects of agile transformation. Examining how changes in work processes affect employee motivation and satisfaction.
5. Comparison of sectoral differences. Analysing the implementation of agile methods in various industrial sectors and identifying sector-specific challenges.
6. Long-term development of agile adoption in Slovakia. Monitoring trends and changes in the use of agile project management over several years.

These research directions could help to better understand the dynamics of agile transformation and identify effective strategies for its successful implementation in Slovak enterprises.

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