

## Exploring Challenges and Solutions in Agile Project Management: A Case Study in a Financial Institution

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### Keywords

Agile; Scrum; PRISMA;  
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### ABSTRACT

According to a survey, 40% of agile projects were successfully completed, while fewer than 15% of waterfall projects were. Motivated by the high probability of success, one of the financial institutions in Indonesia decided to implement agile project management for its software development. Implementing agile in a highly regulated financial institution, such as banks, presents its own challenges, such as a delay in the delivery of work products, fail to meet users' expectations, and increases users' reluctance to adopt the system. This research conducts a systematic literature review to identify the critical failure factors and prioritize them using Technique for Order Preference by Similarity to Ideal Solution (TOPSIS). The objective of this study is to identify challenges in agile project management in the case study and to propose recommendations. The research identified the top ten key challenges in implementing agile practices, namely prolonged task switching, task dependency, real-time analysis requirements, automating data collection, capturing diverse data, lack of teamwork, team members being over-qualified or under-qualified to do the tasks, lack of acceptance criteria, lack of cross-functionality, and lack of management commitment. Solutions were developed based on the PMBOK Guide-Seven Edition, relevant previous studies, and interviews with both the internal and external project managers. This research provides a deeper understanding of the challenges of implementing agile project management in financial institutions, especially in developing countries, and addresses the complexities of adopting agile in highly regulated environments.

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## INTRODUCTION

During the project life cycle, project teams use a software development approach to create and deliver a product, service, or result (Project Management Institute, 2021). Agile is an adaptive approach to software development that gained broad acceptance in many software firms to produce valuable software in a rapidly changing environment, in a shorter time, at a minimal cost, and focuses on team collaboration (Susheela Hooda et al., 2023).

Research has proven that implementing an agile management approach increases a project's success rate when compared to a waterfall approach. According to the CHAOS 2020 report by the Standish Group, summarized by (Mishra & Alzoubi, 2023), the agile success rate was 40%, whereas the waterfall success rate was less than 15%. Another report by (digital.ai, 2025), the 18th State of Agile Report, found that although agile looks good in metrics but based on survey, 53% respondent struggle to prioritize their work, 52% said that business impact is

hard to track, 31% feels that agile has no real-time insight to performance, and around 21% simply cannot trust their data (digital.ai, 2025).

One of Indonesia's banks has a vision to become the leading digital bank in developing countries. In order to achieve this vision and motivated by the high probability of success in agile project management, the bank has adopted Scrum as its software development methodology. The bank's first agile project was the Integrated Financial Information Dashboard (IFID). This IFID application will be used as a financial decision-support system to provide a real-time dashboard.

Based on the project document, the IFID application was developed in 6 sprints from April 22 to November 9, 2022, and was formally launched a year later, on December 8, 2023. The long period between the last sprint and the go-live date indicates a project delay. The problems occurred in sprint 2, which began 7 days after sprint 1 and continued throughout the rest of the sprint. Although the final sprint had been completed on November 9, 2022, end users rejected the deliverables and were reluctant to use the IFID application. The main challenge in the implementation of the IFID is data integration, inconsistency of data, and incompleteness of information available in the IFID. Jia et al., in 2022 stated that the quality of financial decision making is often affected by the completeness of information that influences the quality of financial decisions (Jia et al., 2022).

The scrum teams handle users' reluctance by accommodating user requests on an ad hoc basis from November 2022 until December 2023. On December 8, 2022 user agreed to implement the IFID application to production server. However, users remained hesitant to use the IFID from its implementation until the period of this study, indicating a project failure. According to (Lauesen, 2020), Information Technology (IT) project failure can be defined as cost or schedule overruns, unmet business objectives, low usability, and similar challenges. Other studies confirmed that excessive use of resources and unmet benefits can also be considered a failure (Schmidt, 2023).

The key problem is the discrepancy between the data presented in the IFID and the Enterprise Resource Planning (ERP) application data. The implementation report stated that there were main problems that still existed after implementation, as the report was still incorrect, and that the developer needed to manually update it. To deal with these challenges, it is important to look at the main factors contributing to system failure and identify key challenges that lead to the failure of the IT project (Schmidt, 2023). Prior studies have examined the challenges of agile project management and mapped their solution, but in the form of a literature review (Fissalma et al., 2025; Letelay et al., 2025; Marnada et al., 2021). In addition, other studies also map challenges and solutions of agile project management, but from a management perspective (Hoda & Murugesan, 2016; S et al., 2025). Lastly, Sharma et al., (2022) examine challenges of agile project management during COVID-19 from an economic perspective (Sharma et al., 2022). Previous studies represent a research gap in the challenges of agile project management in highly regulated financial institutions and mapping solutions based on the PMBOK Guide - Seventh Edition. Hence, this research established objectives to identify and prioritize challenges encountered in agile project during the IFID implementation, provide recommendations, and contribute to existing theory about agile project management challenges.

Accordingly, the research intends to address the following Research Question (RQ):

RQ1: What are the key challenges of adopting Agile Software Development within a highly regulated financial institution?

RQ2: What are the proposed solutions to address the challenges identified in this case study?

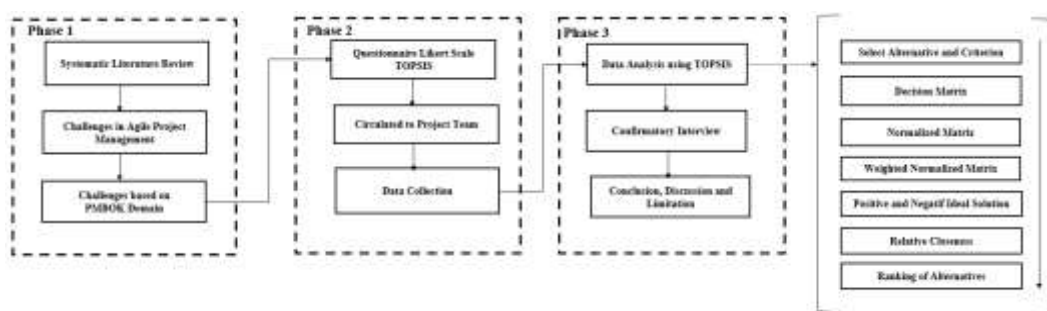
The outcomes of this research will facilitate organizations and practitioners to implement agile project in a highly regulated environment. This research study makes a unique contribution to the field of agile project management, especially in highly regulated financial institutions. A systematic review is conducted identify the challenging factors to agile project implementation in financial institutions, TOPSIS is used to prioritize identified challenges, and provide recommendations based on the PMBOK Guide - Seventh Edition, relevant previous studies, and interviews with experienced agile project managers.

## RESEARCH METHOD

The research was conducted in three phased as shown in the research flowchart in Figure 1. Phase 1: integrate SLR with the PMBOK performance domain, phase 2: distributed survey to project team members, and phase 3: employ data analysis with TOPSIS, and a confirmatory interview with expert.

### A. Phase 1: Systematic Literature Review (SLR)

This study conducted an SLR following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) standards. The PRISMA framework delivers consistency and transparency in the methods used throughout an SLR (Ma'arif et al., 2024). The specified inclusion and exclusion criteria were used to decide the eligibility criteria for the review and how studies were grouped for synthesis (Page et al., 2021). Details of inclusion and exclusion criteria that guide the literature review are presented in Table 1 as follows:



**Figure 1. Research Flowchart**

Source: Author's own work, 2025

**Table 1. Inclusion and Exclusion Criteria**

Code	Criteria	Decision
IC1	Written in English.	Inclusion
IC2	Published between 2015 and 2025.	Inclusion
IC3	Published in reputable journals.	Inclusion
IC4	Case studies on the failure factors and challenges in agile project management.	Inclusion
EC1	The article is not relevant to the research field.	Exclusion

Code	Criteria	Decision
EC2	Theoretical studies without empirical data.	Exclusion
EC3	The full text of the article is not available.	Exclusion
EC4	Case studies not related to failure factors and challenges in agile project management.	Exclusion

Source: Adapted from Page et al. (2021)

The stages of the SLR, as illustrated in Figure 2, are based on the PRISMA 2020 framework for a new SLR, which covers the databases, registers, and other sources searched (Page et al., 2021). The PRISMA framework 2020 has three stages, which are as follows:

### 1. Identification

The first stage was to identify literature through a comprehensive search of several major academic databases, namely Scopus, IEEE Xplore, ScienceDirect, Emerald Insight, Taylor & Francis, ACM Digital Library, and Wiley Online Library. This was done to find relevant studies concerning challenges and failure factors in Agile Project Management. The keywords included "Agile," "Project Management," "Failure Factor," and "Challenges".

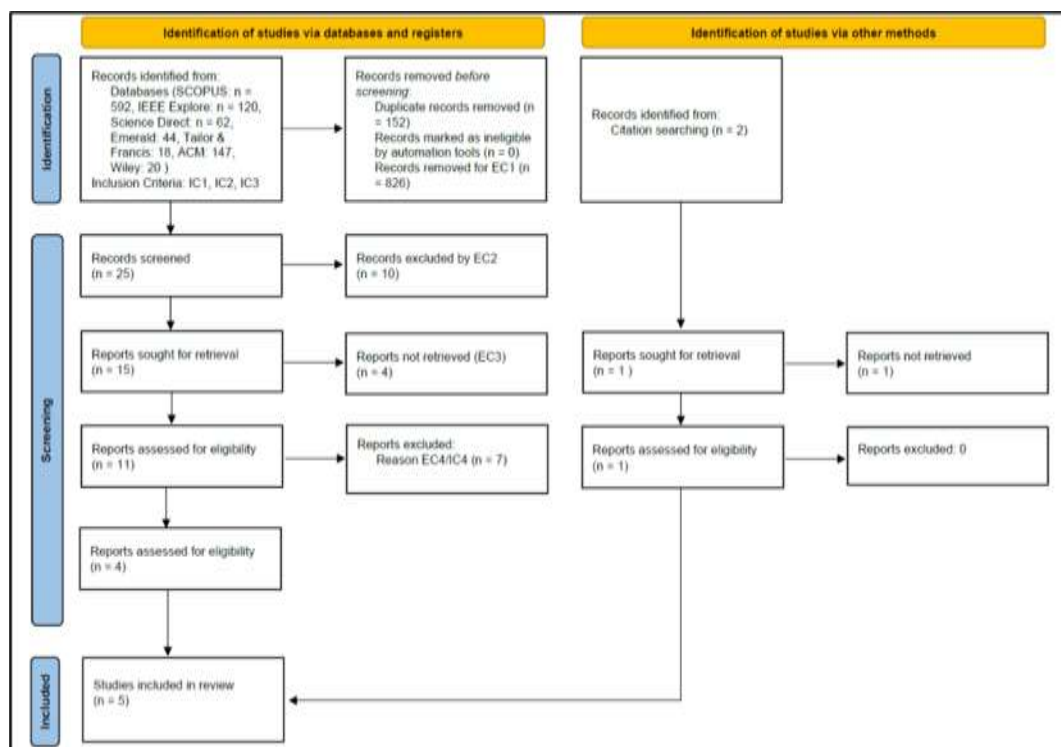


Figure 2. PRISMA Flowchart for Study Selection Process

Source: Adapted from Page et al. (2021, p. 6)

This study used the following search strategies to retrieve relevant literature. Records found from seven databases were evaluated based on inclusion and exclusion criteria, combined with the study identified through reference searches related to challenges in hybrid and data analytics for agile projects.

## 2. Screening

The selection of studies comprises several stages, begin with preliminary screening of the title and abstract to pinpoint pertinent research (Page et al., 2021). In the screening phase, studies were selected based on exclusion criteria EC2, EC3, and EC4, and inclusion criteria IC4, resulting in 4 studies combined with studies from references in the included stages.

## 3. Included

A comprehensive overview was developed by examining five articles selected through the PRISMA framework, as shown in Table 1. The literature review identified 26 challenges that influence the failure in agile project management. These factors were classified in the project management domain based on the PMBOK Guide - Seventh Edition, namely, stakeholders, teams, development approach, and life cycle, planning, project work, delivery, measurement, and uncertainty.

**Table 2. Previous Studies from SLR**

Ref.	Challenges in Agile Project Management
(Fawzy et al., 2025)	<ul style="list-style-type: none"> <li>• Capture diverse data sources,</li> <li>• Automate data collection, and</li> <li>• Support real-time analysis requirements.</li> </ul>
(Julianasari et al., 2022)	<ul style="list-style-type: none"> <li>• An incomplete implementation of Scrum roles and ceremonies,</li> <li>• Limited project management expertise,</li> <li>• Inadequate tracking of agile processes,</li> <li>• A politically driven organizational environment, and</li> <li>• A lack of commitment from management.</li> </ul>
(Sithambaram et al., 2021)	<ul style="list-style-type: none"> <li>• A lack of management commitment,</li> <li>• Misalignment between agile methods and business objectives,</li> <li>• Limited understanding or ignorance of agile practices,</li> <li>• Poor teamwork among project members, and</li> <li>• Inadequate agile-related skill sets among project stakeholders.</li> </ul>
(Hoda & Murugesan, 2016)	<ul style="list-style-type: none"> <li>• Delayed and frequently changing requirements,</li> <li>• A lack of management commitment,</li> <li>• Difficulties in achieving cross-functionality within the team,</li> <li>• Difficulties in achieving cross-functionality within the team,</li> <li>• Limited understanding or ignorance of agile practices,</li> <li>• Ineffective self-assignment of tasks,</li> <li>• The absence of clearly defined acceptance criteria, and</li> <li>• High dependency between tasks.</li> </ul>
(Murugesan, 2017)	<ul style="list-style-type: none"> <li>• The assignment of over-qualified or under-qualified members to tasks,</li> <li>• The absence of informed and real-time discussions,</li> <li>• Communication difficulties caused by time zone differences,</li> <li>• Prolonged task switching,</li> <li>• Reduced expertise due to misaligned project goals,</li> <li>• A lack of cross-functional team members, and</li> <li>• Limited access to multi-featured software tools.</li> </ul>

Source: Synthesized from Fawzy et al. (2025); Julianasari et al. (2022); Sithambaram et al. (2021); Hoda & Murugesan (2016); Murugesan (2017)

## B. Phase 2: Data Collection

A questionnaire was distributed to targeted respondent that meet the specified qualification. All the respondent were the IFID project team members responsible for implementing the application, end users that had direct experienced in operational activities, and were designated at managerial position (minimum assistant manager). The questionnaire was distributed to 14 project team members, 9 responses were received, but only 8 responses from project team members who met the criteria could be used for further data analysis. Profile for project team respondent shown in Table 3.

**Table 3. Profile of Project Team Respondents**

Code	Role in Project Team Members	Job Tittle	Work Experience
R1	Structural Tim Leader	Assistant Director	> 15 years
R2	Product Owner	Assistant Manager	5 – 10 years
R3	Developer	Assistant Manager	< 5 years
R4	Subject Matter Expert	Manager	5 – 10 years
R5	Business Analyst on the user side	Assistant Manager	< 5 years
R6	End User	Manager	5 – 10 years
R7	End User	Assistant Manager	5 – 10 years
R8	End User	Manager	5 – 10 years

Source: Author's field survey, 2025

Additional qualitative data were collected through interviews with four project managers to support the interpretation of the findings, as detailed in Table 4. Case study analysis is typically conducted through interviews with a few purposively selected participants, typically four to five individuals, who can provide rich contextual information (John W. Creswell, 2018). In this study, participants met the following criteria: they had at least 3 years of experience as project managers in agile project management, were not involved in the implementation of the IFID, and served as either internal or external project managers.

**Table 4. Profile Expert Respondents**

Code	Role	Experience	Notes
PM1	Project Manager, Public Trainer   PMP®, PMI-ACP®, PMI-PMOCP™	11 years	External
PM2	Agile Project Manager	6 years	External
PM3	Agile Project Manager	6 years	Internal
PM4	Agile Project Manager	4 years	Internal

Source: Author's interview data, 2025

## C. Phase 3: Data Analysis

This study applied the TOPSIS method to rank the challenges in implementing the Integrated Financial Information Dashboard. Hwang and Yoon (1981) stated that the TOPSIS method assumes that the best solution has the shortest distance from the positive ideal solution and the longest distance from the negative ideal solution (Chakraborty, 2022; Omid Bozorg-Haddad et al., 2021). The selection of alternative challenges using the TOPSIS method can be

explained as a set of stages shown below (Agrawal et al., 2023; Chakraborty, 2022; Julianasari et al., 2022):

1. Select alternatives and criteria

Alternatives are challenges in agile project management identified through an SLR and criteria derived from the questionnaire responses.

2. Create a decision matrix with questionnaire responses.

$$X = \begin{bmatrix} x_{11} & x_{12} & \dots & x_{1j} \\ x_{21} & x_{22} & \dots & x_{2j} \\ \dots & \dots & \dots & \dots \\ x_{i1} & x_{i2} & \dots & x_{ij} \end{bmatrix} \quad (1)$$

$x_{ij}$  ( $i=1,2,\dots,I; j=1,2, \dots, J$ ) is a performance rating.

3. Normalized Matrix

$$y_{ij} = x_{ij} / \sqrt{\sum_{i=1}^I x_{ij}^2} \quad (2)$$

Where  $i$  is the number of alternatives,  $j$  is the number of indicators, and  $n_{ij}$  is the normalized value of alternative  $i$  for indicator  $j$ .

4. Weighted Normalized Matrix

$$V = \begin{bmatrix} v_{11} & v_{12} & \dots & v_{1j} \\ v_{21} & v_{22} & \dots & v_{2j} \\ \dots & \dots & \dots & \dots \\ v_{i1} & v_{i2} & \dots & v_{ij} \end{bmatrix} \quad (3)$$

$V_{ij} = W_j * y_{ij}$  ( $i=1,2,\dots,I; j=1,2, \dots, J$ )

In this case, the weighted rating ( $W_j$ ) is the same for all criteria (respondent).

5. Positive and Negative Ideal Solution

$A^+$  and  $A^-$  are the positive and negative ideal solution sets.

$$A^* = [V_1^*, V_2^*, \dots, V_j^*] \quad (4)$$

$$A^- = [V_1^-, V_2^-, \dots, V_j^-]$$

Where:

$$V_j^* = \begin{cases} \max V_{ij} & (\text{if } j \text{ is a benefit attribute}) \\ \min V_{ij} & (\text{if } j \text{ is a cost attribute}) \end{cases}$$

$$V_j^- = \begin{cases} \max V_{ij} & (\text{if } j \text{ is a benefit attribute}) \\ \min V_{ij} & (\text{if } j \text{ is a cost attribute}) \end{cases}$$

6. Calculate Relative Closeness

The distance from the positive ideal alternative is:

$$S_i^* = \sqrt{\sum_{j=1}^J (V_{ij} - V_j^*)^2} \quad (5)$$

The distance from the negative ideal alternative is:

$$S_i^- = \sqrt{\sum_{j=1}^J (V_{ij} - V_j^-)^2}$$

7. Ranking of Alternatives

Alternatives were ranked based on each alternative's overall preference score,  $V_i$ .

$$V_i = \frac{S_i^-}{S_i^- + S_i^*} \quad (6)$$

## RESULT AND DISCUSSION

The important result of this study is to identify the challenges and propose strategic solutions for agile project management in the case study of a highly regulated financial institution in developing countries. Table 5 presents the final TOPSIS performance ratings for each criterion, grouped by PMBOK Guide - Seventh Edition performance domain.

**Table 5. Performance Score for Challenges**

PMBOK Domain	Challenges	Performance Score	Rank
Stake-holders	1. The organization is too political.	0,4561	11
	2. Lack of management commitment.	0,5089	9
	3. Less expertise if the project goals are irrelevant.	0,3002	24
	4. Inadequate skill set of project stakeholders regarding agile.	0,4115	15
Team	5. Lack of teamwork.	0,5605	6
	6. Achieving cross-functionality.	0,3868	18
	7. Self-Assignment.	0,4483	12
	8. Lack of informed and offline discussion.	0,4075	16
	9. Difficulty communicating due to the time zone difference.	0	26
	10. Lack of cross-functionality.	0,4880	10
	11. Lack of Project Management Expertise.	0,3554	20
	12. Team members are over-qualified or under-qualified to do the tasks.	0,5236	8
Develop-ment Approach and Life Cycle	13. Lack of a complete set of Scrum.	0,3567	19
	14. Lack of Agile Process Tracking.	0,3005	23
	15. Ignorance of agile practices.	0,3446	21
Planning	16. Misalignment of agile methods with business objectives.	0,3922	17
	17. Effective estimations.	0,4366	14
Project Work	18. Task Dependency.	0,7496	2
	19. Lack of multi-featured software tools.	0,2056	25
Delivery	20. Real-time analysis requirements.	0,7022	3
	21. Data integration processes.	0,3011	22
	22. Capture diverse data.	0,5975	5
	23. Data collection automation.	0,6515	4
	24. Lack of Acceptance Criteria.	0,5282	7
Measure-ment	-		
Uncertain-ty	25. Delayed and Changed Requirements.	0,4417	13
	26. Prolonged task switching.	0,7792	1

Source: Author's data analysis, 2025

Results indicate that prolonged task switching, task dependency, real-time analysis requirements, automating data collection, and capturing diverse data are the challenges that contribute to the problem in the implementation of the IFID application. This challenge comes

from the delivery, team, and project work performance domain, indicating that the delivery of work products is the main factor contributing to the implementation of the IFID.

### **A. Ranking of Challenges within Performance Domain**

The analysis focused on seven performance domains: stakeholders, team, development approach, lifecycle, planning, project work, delivery, and uncertainty.

#### **1. Stakeholders**

This study identified several challenges in the implementation of the IFID within the stakeholder performance domain. Some of the most important issues are a lack of management commitment (performance score: 0.5089), excessive organizational politics (0.4561), inadequate stakeholder skill sets related to agile practices (0.4115), and limited expertise when project goals are perceived as irrelevant (0.3002). These challenges were ranked 9<sup>th</sup>, 11<sup>th</sup>, 15<sup>th</sup>, and 24<sup>th</sup>, respectively, among a total of 26 identified challenges. These findings indicate that, although stakeholder-related issues are present, they are not the barriers to the implementation of IFID.

Solutions proposed for the stakeholder performance domain based on the PMBOK Guide - Seventh Edition and previous studies are the implementation of agile principles to stakeholders (Abdullah et al., 2023; Ylinen, 2021), defining the project's vision and sharing it with the stakeholders at the beginning of the project (Project Management Institute, 2021), and increasing stakeholder engagement by encouraging their involvement (Project Management Institute, 2021).

On the other hand, agile project managers stated that management commitment is not a significant issue in their prior projects. PM1 stressed how important the Scrum Master's role in handling conflicts with management. PM3 also said that an agile coaching programs for executives could gain management commitment, and PM4 stated that management at the bank supports the use of Scrum. These perspectives indicate that, in certain settings, organizational support for agile practices may already exist, which reduces the perceived importance of this issue.

Additional insights from confirmatory interviews with agile project managers showed that they did not think that stakeholder skill was a big issue in their previous projects. PM1 stressed that the stakeholder is already familiar with the adaptive environment. PM3 and PM4, internal project managers from the bank, discussed organizational support for agile practices. PM3 stated that an agile coaching program increases the skill set of the stakeholders, and PM4 also stated that the institution's management explicitly supported the use of Scrum as a software development methodology.

These results indicate that management commitment and stakeholder competencies related to agile, while frequently cited as a general success factor (Alsubaie & Sarbazhosseini, 2025; Ansari et al., 2024; Shafir et al., 2025), may not always be an issue depending on organizational context and leadership support.

#### **2. Teams**

The top 10 related factors are lack of teamwork (0.5605), over-qualified or under-qualified team members to complete the task (0.5236), and lack of cross functionality (0.4880), ranked 6<sup>th</sup>, 8<sup>th</sup>, and 10<sup>th</sup>, respectively. As expected, communication difficulties due to time zone

differences did not affect the implementation's success or failure, as the IFID team works in the same time zone.

Solution proposed for the team performance domain, especially the lack of teamwork based on the PMBOK Guide - Seventh Edition, is open communication, shared understanding, shared ownership, trust, collaboration, adaptability, resilience, empowerment, and recognition (Project Management Institute, 2021).

Interviews with project managers gave more information about teamwork in an adaptive environment. PM1, an external project manager, said that proactive team assessment is very important, team issues should be addressed before the sprint, and the project manager should assess the right person for the job. Similarly, PM2, an external project manager, noted that if the technical team has trouble working together, then the project manager must evaluate their Key Performance Indicators (KPI); if they fail to meet expectations, the project manager will remove them from the team. PM3, an internal project manager, agreed with PM2 and said that coaching should come first; if the negative effect continues and becomes worse, the project manager should replace the team member. PM3 and PM4 stressed even more the importance of team backups to cover the underqualified team members.

These findings suggest that active team evaluation, early conflict resolution, coaching, and contingency planning are essential to ensure effective team performance in agile project environments.

### **3. Development Approach and Lifecycle**

This performance domain consists of 3 factors: a lack of a complete set of Scrum (0.3567), ignorance of agile practices (0.3446), and a lack of agile process tracking (0.3005). The factors ranked 19<sup>th</sup>, 21<sup>st</sup>, and 23<sup>rd</sup>, respectively, indicate that the development approach and lifecycle are not very influential on the success of the IFID implementation.

The PMBOK Guide - Seventh Edition suggests a prioritized set of solutions for the development approach and life cycle performance domain. This is especially important due to a lack of a complete set of scrums, so that the agile approach must be in line with deliverables of the project (Project Management Institute, 2021), and the organization must have the same views on agile workflow before the project starts (Abdullah et al., 2023).

Based on confirmatory interviews with project managers, it can be seen that Scrum projects frequently fail to fully comply with agile principles. External agile project managers, PM1 and PM2, confirmed that Scrum does not fully follow its principles. On the other hand, internal project managers, PM3 and PM4, observed ongoing efforts to improve Scrum implementation at the bank, indicating a positive trend toward the implementation of agile values in the IT project. Despite these differences, all project managers interviewed agreed on the importance of using agile tools to monitor project progress.

### **4. Planning**

The agile software development challenges in the planning performance domain consist of 2 factors, which are adequate estimations (0.4366), ranked 14<sup>th</sup>, and misalignment of agile methods with business objectives (0.3922), ranked 17<sup>th</sup>. The proposed solution from the previous study employs planning strategies and techniques, estimates effort, and conducts verification (Abdullah et al., 2023).

PM2 experienced the misalignment of agile methods with business objectives because stakeholders did not understand agile but insisted on using agile methodology in their project.

Initially, the project did not align with the business objectives, leading stakeholders to change the methodology to waterfall. However, PM1, PM3, and PM4 did not encounter the same issue. According to PM3, selecting the appropriate project methodology should be done carefully during the initial phase.

Practical estimation is also a problem that all 4 project managers found. PM1 proposed continuously calibrating estimates, while PM2 noted that estimations become smoother as the sprint progresses. PM3 applied standard estimation techniques such as planning poker and fibonacci, and PM4 emphasized that higher management prioritizes tasks top-down and the team implements them using available resources.

## **5. Project Work**

Project work factors also hinder the implementation of the IFID and contribute to low user adoption. Task dependency (0.7496) and lack of multi-featured software (0.2056) took 2<sup>nd</sup> and 25<sup>th</sup> place in the rating as challenges in IFID implementation. This ranking shows that project work is very important to the successful implementation of the IFID, especially for task dependency. On the other hand, in terms of lack of tools, it has very little effect on the success of implementation. The solutions suggested for the project work performance domain, especially for task dependency, are regularly assessing the processes (Project Management Institute, 2021), and receiving feedback about performance and recommendations for project work (Abdullah et al., 2023).

Confirmatory interviews with project managers show that task dependency is a common problem in agile project management. PM1 and PM2, both external project managers, underlined the significance of prioritizing and listing the most significant features for early deployment. Meanwhile, internal project managers PM3 and PM4 addressed task dependency by implementing agile events, including backlog refinement, and utilizing agile tools such as JIRA, a project tracking and issue management tool developed by Atlassian, to keep track of tasks and coordinate them.

## **6. Delivery**

Based on performance score ranks, 4 out of 5 challenges in the project delivery performance domain are entering the top ten biggest challenges in the IFID implementation. The need for real-time analysis (0.7022), automated data collection (0.6515), capturing diverse data (0.5975), and the absence of clearly defined acceptance criteria (0.5282) took 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, and 7<sup>th</sup> place in the rating as challenges in IFID implementation. These results show the importance of effective project delivery in ensuring the success of the IFID implementation.

On the other hand, the performance rating for managing data integration processes is relatively low, with a performance score of 0.3011, putting it 22<sup>nd</sup> out of 26. The low ranking suggests that participants do not perceive data integration between applications as a significant issue. Instead, the underlying problem relates to the need for manual intervention. As noted by the product owner (R2), there are human interventions (humans in the loop) in the process of presenting budget data that cannot be standardized and accommodated in the system.

Project managers should effectively manage the prioritized solution proposed for the delivery performance domain, as this domain challenges ranked 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> in the IFID implementation. A solution based on the PMBOK Guide - Seventh Edition, for this domain is completion criteria, a statement of work, a clear definition of done, or requirement documentation (Project Management Institute, 2021). Proposed solutions from previous studies

for the delivery performance domain are to create the easiest change requirement document to fill (Abdullah et al., 2023) and create a flexible project scope and frequent delivery (Abdullah et al., 2023; Aoufi et al., 2022).

All four project managers indicated the absence of issues related to technical data delivery in their previous agile projects. This suggests issues with data are specific to the context of IFID implementation. PM1 stressed the importance of discussing technical solutions before the start of each sprint to avoid problems during implementation. Similarly, PM2 highlighted the need to address data-related technical problems in collaboration with database administrators. Internal project managers PM3 and PM4 endorsed the role of Extract, Transform, and Load (ETL) tools in creating efficient data collection processes.

## **7. Uncertainty**

In the uncertainty domain, delayed and changing requirements got a performance score of 0.4417 in 13<sup>th</sup> place, and prolonged task switching got a performance score of 0.7792, which put it was the highest performance score above all other challenges. The results show that uncertainty, especially when it comes to continuous task switching over an extended period, significantly affects the successful implementation of the IFID. This finding is supported by user feedback, as expressed by R6, that the progress of requirement gathering and user acceptance testing depends on the availability of the person in charge.

To address challenges within the uncertainty domain, the suggested solutions include finding potential risks early and using the right mitigation strategies (Project Management Institute, 2021), as well as assigning appropriate team members to reduce the probability of disruptive task switching (Abdullah et al., 2023; Aoufi et al., 2022), and the completion of the product backlog as a unified record of work to enhance clearness and transparency among the scrum team and stakeholders (Lawong & Akanfe, 2025).

All four project managers who were interviewed agreed that the prolonged task switching is a prevalent challenge in agile project management. PM1 stressed the need for commitment and capacity management, and also encompassing team timesheet planning. PM2 proposed that the team members be temporarily assigned only to less critical projects. On the other hand, internal project managers took a stricter approach; PM3 advised to avoid task switching for large-scale projects, while PM4 recommends that team members' involvement in projects be limited to a maximum of two projects at a time.

## **B. Ranking of Challenges within Performance Domain**

Prolonged task switching is the most significant challenge in implementing the IFID with agile project management (Figure 3). This finding aligns with prior research indicating that frequent switching between tasks, or projects switching between team members, will reduce productivity and efficiency (Murugesan, 2017). The PMBOK Guide - Seventh Edition stated that a long period of switching tasks is linked to the uncertainty performance domain, where the reassignment of team members is seen as a manageable risk (Project Management Institute, 2021). The project team should talk about these risks during daily stand-ups, weekly reviews, retrospectives, and lessons-learned sessions (Project Management Institute, 2021).



**Figure 3. Overall TOPSIS Ranking for Challenges**

Source: Author's data analysis, 2025

The second significant challenge for an agile project is task dependency. Task dependency related to the project work performance domain through activities like setting up project processes, managing resources, and creating a learning environment (Project Management Institute, 2021). The PMBOK recommends continuous evaluation and improvement of processes in retrospective meetings to mitigate such dependencies. In agile settings, retrospectives are essential for identifying inefficiencies and resolving interdependencies that hinder team performance (Project Management Institute, 2021).

As stated before, 3 out of 5 challenges in the project delivery performance domain are entering the top five biggest challenges in the IFID implementation. Fawzy et., al (2025) recommend integrating user feedback throughout the agile development process and utilizing automation tools to improve data reliability and availability (Fawzy et al., 2025).

Confirmatory interviews with experts indicate that data-related issues are a common challenge in the IFID projects. R2 said that the IFID application relied on data transmission from ERP and needed a user for data correction. Another respondent, R4, reports that no data errors were found during deployment, but after implementation, users found the data to be outdated or inconsistent. These findings reinforce ongoing concerns regarding the quality and reliability of the IFID data.

Proposed solutions were formulated with the PMBOK Guide - Seventh Edition, where improving product quality can be achieved by meeting acceptance criteria, a clear Definition of Done (DoD), and complete documentation (Project Management Institute, 2021). Based on project documentation, the existing DoD in the IFID includes only the completion of code review, unit testing, and documentation as required by internal regulations. The lack of clear criteria related to data quality was evident.

## CONCLUSION

Implementation of the agile framework in highly regulated financial institutions presents its own challenges. This study aims to explore the challenges in agile projects using a case study in a financial institution. The research identifies challenges through SLR, groups the challenges into the PMBOK performance domain, and prioritized them using TOPSIS. Based on prioritized challenges, strategic solutions were proposed with the PMBOK Guide - Seventh Edition and a confirmatory interview with an expert. In response to RQ1, the main challenges of agile projects in financial institutions are prolonged task switching, task dependency, real-time analysis requirements, automating data collection, capturing diverse data, lack of teamwork, team members being over-qualified or under-qualified, lack of acceptance criteria, lack of cross-functionality, and lack of management commitment. In response to RQ2, several strategic solutions have been proposed. Prolonged task switching is treated as a manageable risk that must be mitigated during the scrum event. Task dependency is reduced by continuous evaluation and improvement of processes in retrospective meetings. Problems with delivery can be addressed by a clear definition of acceptance criteria. This study helps organizations or practitioners to understand challenges and strategic solutions for agile software development in highly regulated financial institutions. The results of this study show that uncertainty, project work, and delivery performance domain are the main challenges in agile project management. The research study also has a few limitations that need to be considered for future research. The identified challenges are specific to the IFID application, and therefore, the results may not comprehensively represent other agile initiatives within the bank. Future research is encouraged to investigate the implementation of scaled agile frameworks within the organization.

## REFERENCES

- Abdullah, P. P., Raharjo, T., Hardian, B., & Simanungkalit, T. (2023). Challenges and best practices solution of agile project management in public sector: A systematic literature review. *International Journal on Informatics Visualization*, 7(2), 606–614. <https://doi.org/10.30630/joiv.7.2.1098>
- Agrawal, V., Mohanty, R. P., Agarwal, S., Dixit, J. K., & Agrawal, A. M. (2023). Analyzing critical success factors for sustainable green supply chain management. *Environment, Development and Sustainability*, 25(8), 8233–8258. <https://doi.org/10.1007/s10668-022-02396-2>
- Alsubaie, M., & Sarbazhosseini, H. (2025). People capabilities for successful hybrid agile project management. *Procedia Computer Science*, 256, 1896–1904. <https://doi.org/10.1016/j.procs.2025.02.331>
- Ansari, M. S. A., Abouraia, M., El Morsy, R., & Thumiki, V. R. R. (2024). Influence of transformational and transactional leadership on agile project success. *Project Leadership and Society*, 5. <https://doi.org/10.1016/j.plas.2024.100136>
- Aoufi, A., Schoeman, M., & Turner, N. (2022). How to outsource agile projects effectively. *Research-Technology Management*, 65(1), 59–66. <https://doi.org/10.1080/08956308.2022.1987792>
- Chakraborty, S. (2022). TOPSIS and modified TOPSIS: A comparative analysis. *Decision Analytics Journal*, 2, 100021. <https://doi.org/10.1016/j.dajour.2021.100021>

- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Sage Publications.
- Digital.ai. (2025). *18th state of agile report*. <https://digital.ai/resource-center/analyst-reports/18th-state-of-agile-report/>
- Fawzy, A., Tahir, A., Galster, M., & Liang, P. (2025). Exploring data management challenges and solutions in agile software development: A literature review and practitioner survey. *Empirical Software Engineering*, 30(3). <https://doi.org/10.1007/s10664-025-10630-4>
- Fissalma, H., Ferdinansyah, A., & Purwandari, B. (2025). Investigating challenges in agile software development: A cross-country comparative analysis. *International Journal of Electrical and Computer Engineering*, 15(1), 855–869. <https://doi.org/10.11591/ijece.v15i1.pp855-869>
- Hoda, R., & Murugesan, L. K. (2016). Multi-level agile project management challenges: A self-organizing team perspective. *Journal of Systems and Software*, 117, 245–257. <https://doi.org/10.1016/j.jss.2016.02.049>
- Jia, T., Wang, C., Tian, Z., Wang, B., & Tian, F. (2022). Design of digital and intelligent financial decision support system based on artificial intelligence. *Computational Intelligence and Neuroscience*, 2022. <https://doi.org/10.1155/2022/1962937>
- Julianasari, R., Raharjo, T., Hardian, B., & Simanungkalit, T. (2022). Critical failure factor using TOPSIS method: A case study of an Indonesian poultry agrotechnology startup. *Journal of Theoretical and Applied Information Technology*, 100(31), 20.
- Lauesen, S. (2020). IT project failures, causes and cures. *IEEE Access*, 8, 72059–72067. <https://doi.org/10.1109/ACCESS.2020.2986545>
- Lawong, D. A., & Akanfe, O. (2025). Overcoming team challenges in project management: The Scrum framework. *Organizational Dynamics*, 54(1). <https://doi.org/10.1016/j.orgdyn.2024.101073>
- Letelay, K., Santoso Mola, A., & Yulika Go, R. (2025). Challenges of agile software development in the banking sector: A systematic literature review.
- Ma'arif, S., Hartono, B., Arini, H. M., & Deendarlianto. (2024). Factors influencing household intentions to embrace solar power systems: A systematic literature review for Indonesia. In *IEEE International Conference on Industrial Engineering and Engineering Management* (pp. 824–828). <https://doi.org/10.1109/IEEM62345.2024.10857182>
- Marnada, P., Raharjo, T., Hardian, B., & Prasetyo, A. (2021). Agile project management challenge in handling scope and change: A systematic literature review. *Procedia Computer Science*, 197, 290–300. <https://doi.org/10.1016/j.procs.2021.12.143>
- Mishra, A., & Alzoubi, Y. I. (2023). Structured software development versus agile software development: A comparative analysis. *International Journal of System Assurance Engineering and Management*, 14(4), 1504–1522. <https://doi.org/10.1007/s13198-023-01958-5>
- Murugesan, L. K. (2017). *Overcoming challenges in self-organizing agile software teams*.
- Omid Bozorg-Haddad, Zolghadr-Asli, B., & Loáiciga, H. A. (2021). *A handbook on multi-attribute decision-making methods* (1st ed.). John Wiley & Sons.

- Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., ... McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: Updated guidance and exemplars for reporting systematic reviews. *BMJ*, *372*, n160. <https://doi.org/10.1136/bmj.n160>
- Project Management Institute. (2021). *A guide to the project management body of knowledge (PMBOK® guide)* (7th ed.). Project Management Institute.
- S, G. L., El-Ebiary, Y. A. B., Rao, B. S., Rautrao, R. R., Rao, T. S. M., Ramesh, J. V. N., Al-Omari, O., & Reddy, T. K. (2025). Challenges and solutions in agile software development: A managerial perspective on implementation practices. *International Journal of Advanced Computer Science and Applications*, *16*(3).
- Schmidt, J. (2023). Mitigating risk of failure in information technology projects: Causes and mechanisms. *Project Leadership and Society*, *4*. <https://doi.org/10.1016/j.plas.2023.100097>
- Shafir, M., Saha, P. P., Araf, A. T., Nishi, J. F., Hasan, M., & Sadia, F. (2025). The success factors of agile methodologies in software development based on developing countries' software firms. *Procedia Computer Science*, *256*, 1954–1961. <https://doi.org/10.1016/j.procs.2025.02.338>
- Sharma, M., Luthra, S., Joshi, S., & Joshi, H. (2022). Challenges to agile project management during COVID-19 pandemic: An emerging economy perspective. *Operations Management Research*, *15*(1–2), 461–474. <https://doi.org/10.1007/s12063-021-00249-1>
- Sithambaram, J., Nasir, M. H. N. B. M., & Ahmad, R. (2021). Issues and challenges impacting the successful management of agile-hybrid projects: A grounded theory approach. *International Journal of Project Management*, *39*(5), 474–495. <https://doi.org/10.1016/j.ijproman.2021.03.002>
- Susheela Hooda, Mohindru Sood, V., Singh, Y., Dalal, S., & Sood, M. (2023). Agile software development: Trends, challenges, and application. In *Agile Software Development*. Wiley. <https://doi.org/10.1002/9781119896838.fmatter>
- Ylinen, M. (2021). Incorporating agile practices in public sector IT management: A nudge toward adaptive governance. *Information Polity*, *26*(3), 251–271. <https://doi.org/10.3233/IP-200269>