

ADOPTION AND ADAPTATION OF AGILE PROJECT MANAGEMENT IN THE GEORGIAN BANKING SECTOR: CHALLENGES AND INSIGHTS

Natia Surmanidze ¹, Lia Kiladze², Zurab Mushkudiani ³, Mariam Minadze⁴, Mariam
Kortava⁵

¹*Ilia State University, Tbilisi, Georgia, natia.surmanidze@iliauni.edu.ge, ORCID: orcid.org/0000-0003-2116-6571*

²*Ivane Javakhishvili Tbilisi State University, Tbilisi, Georgia, lia.kiladze687@eab.tsu.edu.ge, ORCID: orcid.org/0000-0002-4193-1181*

³*Georgian International University (GIU), Tbilisi, Georgia, zurab.mushkudiani@giu.edu.ge, ORCID: orcid.org/0000-0003-0987-3564*

⁴*The University of Georgia, Tbilisi, Georgia, mariam.minadze@ug.edu.ge, ORCID: orcid.org/0000-0003-5612-9890*

⁵*The University of Georgia, Tbilisi, Georgia, mariam.kortava@ug.edu.ge, ORCID: orcid.org/0000-0003-2693-3757*

Received 19 April 2026; accepted 25 May 2026

Abstract

Research purpose. The current paper analyzes the application and adaptation of Agile Project Management (APM) frameworks in Georgian banks' product development activities, namely at TBC Bank and Bank of Georgia. The purpose of this study is to explore the application of three agile frameworks: Scrum, Kanban, and ScrumBan, and evaluate the benefits of applying agile in operations, flexibility of work, digital transformation, and innovations focused on customers. Furthermore, the current paper highlights some of the challenges in adopting agile frameworks.

Design / Methodology / Approach. The qualitative research with a deductive approach was used for this research. Primary data were collected through 10 semi-structured interviews with Product Owners, Scrum Masters, and software developers from two leading Georgian banks. Secondary data were collected from organizational reports, publications about the Georgian banking sector, and academic works on Agile Project Management and digital transformation. In addition, the case study design allowed conducting in-depth analysis of agile practices in Georgian commercial banks.

Originality / Value / Practical implications. The results of this research suggest high usage of agile frameworks in the Georgian banking sector and customization of such frameworks by companies according to their needs. ScrumBan proved to be the dominant framework, providing both flexibility and a structured process flow. Moreover, this research found that agile practices increase collaboration among team members, increase autonomy, and enable better product development due to improved integration of customer feedback. However, a few challenges are still faced in the process of implementing agile frameworks. These challenges include regulatory issues, long and complicated decision-making processes, and difficulties of coordinating teams that operate with and without agile frameworks. The results show that the introduction of customer feedback procedures and iterative product deliveries help to increase customer satisfaction. This study adds value to the existing literature on Agile Project Management since there are very few studies devoted to the topic. It provides practical information for managers who consider the implementation of such frameworks in their operations. The findings can serve as a source of inspiration for financial institution's decision-makers and stakeholders to develop more effective project management strategies (Hoeseb, & Tanner, 2020).

Keywords: Agile Project Management; ScrumBan; Banking sector; Digital transformation; Regulatory compliance.

JEL codes: M15; G21.

* Corresponding author. E-mail: natia.surmanidze@iliauni.edu.ge

Introduction

The software development industry has undergone significant transformation by adopting agile methodologies, which have been proven to enhance productivity, collaboration, and overall project success. Agile methods, such as Agile Project Management (APM), have been notably recognized for their ability to promote self-planning, autonomy, and trust among team members while simultaneously ensuring the necessity of effective and timely communication (Surtherland & Schwaber, 2020; Sliger, 2011). Much of the existing literature on agile practices focuses on industries such as Information Technology (IT), where methodologies like Test-Driven Development (TDD) have been explored, addressing both the benefits and challenges of these approaches (Medeiros, Neto, Passos, & De Souza Araújo, 2015).

Despite the widespread use of agile practices in IT, there remains a considerable gap in the understanding and application of these methods in other industries, particularly in the banking sector. While some studies suggest positive outcomes for banks that implement agile practices (Dewantari, Raharjo, Hardian, Wahbi, & Alaydrus, 2021), a limited empirical body of research explores the use of Agile Project Management (APM) in banking, especially in Georgia. The lack of knowledge and understanding regarding how agile methodologies can be applied to banking product development limits financial institutions' ability to fully harness these approaches' potential to meet the demands of an increasingly digital and competitive market (Ivanov, 2021).

The Georgian banking sector is among the most digitally advanced sectors of the national economy. Leading institutions such as TBC Bank and Bank of Georgia have invested heavily in digital banking platforms, mobile applications, and fintech-driven innovation. These developments create a suitable environment for examining the implementation of Agile Project Management practices within a highly competitive and technology-oriented financial sector (Kerzner, 2020).

This study aims to address this research gap by examining the application of Agile Project Management (APM) in the banking sector, specifically focusing on Georgian banks. The goal is to explore how APM is utilized in developing and managing banking products and services, especially in the context of digital transformation. This study also aims to identify the challenges and barriers that banks face when implementing agile practices and to provide insights into how these practices can enhance efficiency, improve customer satisfaction, and ensure financial institutions' competitiveness in the rapidly evolving market.

To investigate adopting and applying Agile Project Management (APM) in the Georgian banking sector.

To assess the challenges and limitations faced by banks in implementing APM.

To analyze the impact of APM on the development of digital solutions and the overall efficiency of the banking sector.

Research Questions

1. How is Agile Project Management (APM) used in the banking sector during product development?
2. What are the key challenges associated with adopting and implementing Agile Project Management (APM) in banks?
3. How does using APM contribute to the digital transformation of banking services and improve customer satisfaction?

By addressing these research questions, this study seeks to fill the existing gap in the literature regarding the use of agile methodologies in the banking industry, particularly in Georgia. The findings of this research will provide practical insights into how APM can be leveraged to foster innovation and efficiency in the banking sector, helping financial institutions navigate the challenges of digital modernization and remain competitive in the global market.

Literature review

Contemporary Project Management Practices and Perspectives in Companies

In the modern world, project management is evolving rapidly, adapting to the increasing complexity and dynamism in industries. The traditional project management approaches, often termed waterfall models, are highly structured and typically follow a linear progression (Huemann & Turner, 2024). These projects are usually well-planned and well-defined, with clear goals and timelines. The main advantage of traditional methods is their certainty, especially for projects where scope, schedule, and resources are tightly constrained. However, the rigidity inherent in such models makes them less suitable for projects that require adaptability, particularly in fast-changing environments. For example, in industries like technology and software development, where rapid changes in customer demands or market conditions are common, traditional methods often fail to deliver results effectively (Meredith, Shafer, & Mantel Jr, 2017).

On the other hand, agile project management (APM) has gained significant traction in recent years due to its flexibility and adaptability. Agile methodologies allow for iterative development, where feedback is continuously gathered from stakeholders and incorporated into the project. This enables teams to adapt quickly to changing requirements and deliver products incrementally, reducing risks and improving customer satisfaction (Pelser & Gaffley, 2020). APM methods like Scrum, Kanban, and Lean have become particularly popular because they enable teams to respond to changes rapidly and efficiently. These methods promote collaboration, flexibility, and frequent updates, making them well-suited for industries characterized by uncertainty and rapid innovation (Tshabalala & Marnewick, 2021).

As companies increasingly operate in a globalized, competitive environment, the need for agility in project management has become more critical. In particular, businesses in sectors such as banking, technology, and manufacturing are adopting agile methods to enhance their responsiveness to customer needs and market dynamics (Lazariashvili & Surmanidze, 2025). Research has shown that agile methods are effective for small, dynamic projects and large-scale, complex initiatives. For instance, many Georgian banks have adopted Agile Project Management (APM) to respond to the growing need for flexible and responsive service offerings. This shift towards agility is primarily driven by the desire to stay competitive in a world where rapid technological advancements and shifting customer expectations require quick, adaptive responses.

Despite the success of APM, traditional project management remains relevant for specific types of projects where certainty, structured processes, and well-defined outputs are essential (Palfreyman & Morton, 2022). The continued relevance of traditional methods in industries like construction, government projects, and manufacturing underscores that both traditional and agile approaches have their place. The challenge, however, is for organizations to identify which approach works best depending on the nature of the project. Recent studies suggest that a hybrid approach, integrating both traditional and agile methods, might offer the most effective solution for managing diverse types of projects (Rigby et al., 2016).

The Concept of Project Management and Contemporary Understanding

Project management involves the application of knowledge, skills, tools, and techniques to project activities to meet project requirements. Its importance has grown as businesses face increasingly complex and multifaceted challenges. The primary goal of project management is to ensure that the project's objectives are met within the constraints of scope, time, and cost. Traditional project management methods prioritize predictability and control, providing a structured pathway to achieve specific outcomes. These methods are highly effective in scenarios where the scope and timeline are clearly defined and unlikely to change. However, they often struggle when applied to projects in highly dynamic environments where rapid shifts in scope or objectives occur (Chukwunweike & Aro, 2024).

As businesses face a rapidly evolving environment characterized by frequent market changes and technological advancements, the demand for more flexible project management approaches has surged. Agile project management methods prioritize adaptability and continuous improvement and offer a solution to this challenge. Unlike traditional models, which rely on detailed upfront planning, agile

methodologies focus on iterative development, regular feedback, and flexibility to accommodate change. Agile approaches have proven particularly effective in industries like software development, where customer requirements can change quickly and product development cycles are short. Agile methods enable project managers to adjust the project scope, timeline, and deliverables as needed, ensuring that the project remains aligned with the business's and stakeholders' evolving needs (Chen, Sun, & Liu, 2025).

The growing interest in agile project management has led to increased research exploring its benefits and challenges. By promoting collaboration, communication, and adaptability, Agile methods can lead to improved project outcomes, including increased customer satisfaction and faster time-to-market. Agile project management techniques also encourage more efficient use of resources, reducing waste and increasing productivity. However, adopting agile methods is not without challenges. Many organizations struggle with the cultural shift required to embrace agile practices fully, and there are concerns about scaling agile methodologies in large organizations. Research also highlights the need for a tailored approach when implementing agile methods, as what works for one team or project may not be suitable for another (Beck, 2000, Chagelishvili, Surmanidze, & Patsatsia, 2023).

In contrast, traditional project management methods remain highly effective in situations that demand high control and predictability. For instance, large infrastructure projects or projects with highly regulated environments may benefit from a traditional approach due to the detailed planning and risk management it provides. Nevertheless, as the business environment changes, companies need to balance traditional project management structures with the flexibility of agile practices. The combination of both approaches—hybrid project management—has gained attention as a promising solution to meet the diverse demands of modern projects. Hybrid project management allows organizations to leverage the strengths of both methodologies, adapting to the needs of each specific project while maintaining overall project control (Schwaber, 2004).

Different Approaches to Agile Methodology

Agile methodology has become the standard for many organizations, particularly those operating in dynamic and competitive sectors. Dynamic Systems Development Method (DSDM) stands out among the various agile approaches for its adaptability and focus on rapid decision-making. DSDM emphasizes the importance of delivering business value through frequent, incremental deliveries, ensuring that projects meet customer needs while maintaining business efficiency. The method's key advantage is its flexibility in accommodating changes during the project lifecycle, allowing teams to adjust based on emerging requirements. However, the reversibility of changes is critical, as it ensures that adjustments made during the project can be undone if they no longer align with business objectives (Molenaar & Nesselrode, 2015).

Another important agile method is Crystal, which significantly emphasizes team communication and collaboration. The Crystal Method encourages a personalized approach to each project, considering the team's and project's unique needs. This flexibility allows teams to adjust their working methods to suit their specific situation best. Crystal promotes a culture of continuous improvement through incremental work cycles and reflection workshops, enabling teams to assess their progress and make necessary adjustments. Crystal's strength lies in its focus on team dynamics, ensuring that team members' collective skills and experiences are utilized to their fullest potential (Cockburn, 2004).

Feature-Driven Development (FDD) offers a more structured agile methodology, focusing on creating specific features within a project. FDD breaks the project into smaller, manageable components and emphasizes the importance of modeling and creating features from the outset. This approach ensures that projects stay focused on clear goals while allowing for flexibility during development. FDD is particularly effective for large-scale projects, as it supports scalability while maintaining high accuracy at the project's start. By concentrating on key deliverables, FDD helps teams maintain a clear sense of direction and purpose, essential for ensuring successful project completion (Palmer & Felsing, 2001).

Lean Development (LD) and Extreme Programming (XP) are other agile approaches emphasizing efficiency and responsiveness. Lean Development focuses on improving internal processes and reducing waste, making it ideal for organizations looking to optimize their workflows and maximize efficiency.

Lean encourages organizations to take calculated risks to drive innovation and competitive advantage. In contrast, XP focuses on short, frequent iterations emphasizing technical excellence and close collaboration between developers and clients. Both approaches highlight the importance of feedback loops and continuous improvement, ensuring that projects always align with business goals and customer needs (Beck, 2000; Womack & Jones, 2022).

Scrum, one of the most popular agile frameworks, is based on iterative cycles known as sprints, typically lasting two to four weeks (Iivari, Hirschheim, & Klein, 2000). Scrum emphasizes teamwork, accountability, and regular communication to ensure that projects stay on track. Each sprint ends with a review and retrospective, which helps teams reflect on their performance and identify areas for improvement. Scrum teams are small and multifunctional, ensuring a diverse set of skills is brought to bear on the project. The method's key strength is its flexibility and the ability to adjust project direction based on ongoing stakeholder feedback (Schwaber, 2004).

Kanban is a just-in-time methodology that focuses on workflow management and continuous improvement. Unlike other agile methods, Kanban does not rely on fixed iterations but instead uses visual boards to track the progress of tasks. This method emphasizes limiting work in progress to maintain a steady flow of tasks, ensuring that the team can focus on completing one task before moving on to the next (Esamah, Aujirapongpan, Rakangthong, & Imjai, 2023). Kanban's strength lies in its simplicity and flexibility, making it an excellent choice for teams that must manage a continuous stream of work without the constraints of fixed timelines or milestones (Anderson, 2024).

Theoretical Framework: Agile Project Management in the Modern Business Environment

The theoretical framework for this study draws from key project management theories, primarily focusing on the evolution of traditional project management approaches towards more adaptive and flexible methodologies, such as Agile Project Management (APM). Based on the Waterfall model, traditional methodologies emphasize a structured, linear process with defined stages such as initiation, planning, execution, monitoring, and closure (Surmanidze, 2026). These approaches are practical in stable environments with predictable project scope, budget, and timelines. However, in the current dynamic business landscape, characterized by rapid technological advancements and shifting customer demands, traditional models often fail to deliver projects that meet evolving needs (Cohen, Lindvall, & Costa, 2003). This has driven the adoption of Agile methodologies, allowing continuous improvement and adaptation throughout the project lifecycle. Agile's focus on iterative processes, feedback loops, and flexibility supports rapid response to change, a crucial factor for modern organizations seeking to maintain competitiveness (Florek-Paszkowska & Ujwary-Gil, 2025).

A central aspect of the Agile framework is its values and principles outlined in the Agile Manifesto (Cohen, Lindvall, & Costa, 2003). These principles prioritize customer collaboration over contract negotiation, welcoming changes in requirements even late in the development process, and delivering minor, frequent releases of working software. The theory behind these principles is rooted in the belief that continuous customer feedback is vital for ensuring that the final product aligns with user needs and market demands. In contrast to the rigid planning of traditional methods, Agile project management thrives in environments where requirements evolve, and flexibility is key. By focusing on delivering incremental value, organizations can adapt quickly to external shifts, reducing the risks associated with long-term planning (Tharanga & Uzule, 2025).

Integrating feedback loops and iterative development is another crucial theoretical component in the framework (Surmanidze, 2026). Short sprints in Agile methodologies, particularly within Scrum, allow teams to release functional product versions quickly, gather user feedback, and refine the product in the next cycle (Schwaber, 2004). This iterative approach supports continuous learning and improvement, ensuring that each stage of development is aligned with customer needs and expectations. The feedback-driven approach fosters a collaborative team environment, enabling teams to adjust and innovate based on real-time information. This shift from traditional, phase-gated methods to a more fluid, responsive system is central to the success of modern project management, especially in sectors requiring rapid technological adaptations, such as software development and digital services (Buonocore, Annosi, De Gennaro, & Riemma, 2024).

In addition to Agile methodologies, Lean principles contribute significantly to this framework by emphasizing efficiency, waste reduction, and creating value for customers (Womack & Jones, 2022). Lean principles are deeply embedded in Agile methods like Kanban, which focuses on reducing bottlenecks and optimizing workflow by limiting work in progress (Anderson, 2024). The combination of Lean and Agile approaches helps organizations create more value with fewer resources while ensuring that products meet customers' needs more effectively. This theoretical integration supports the hypothesis that flexibility, continuous feedback, and efficiency are essential for successfully implementing projects in today's competitive and fast-paced business environment.

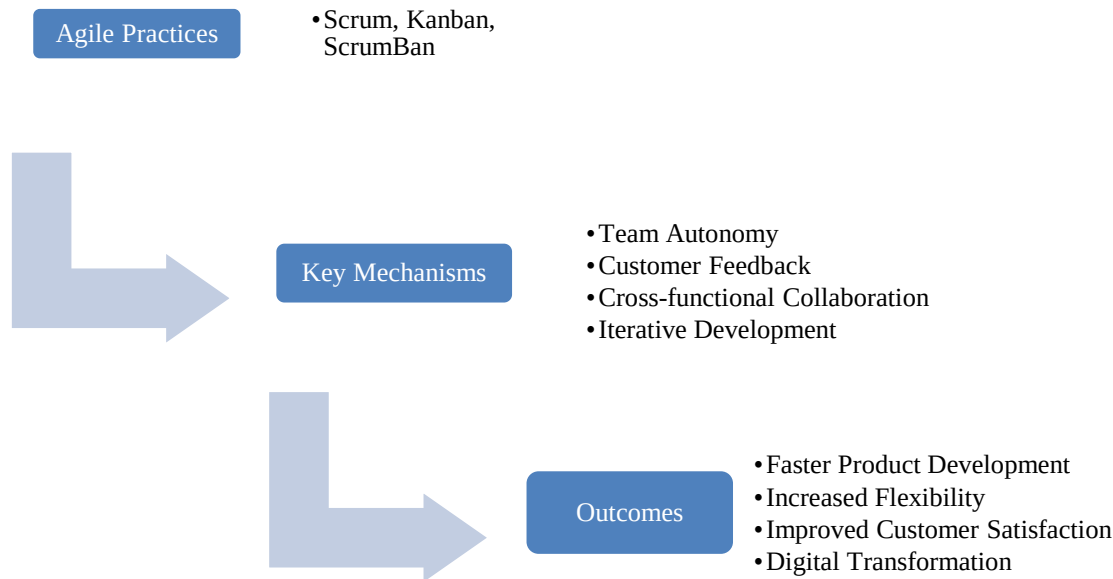


Figure 1. Conceptual Framework of Agile Project Management Adoption in the Georgian Banking Sector. (Source: Author’s compilation based on Cohen, Lindvall, & Costa, (2003), Schwaber (2004), and Anderson (2024))

The visual representation illustrates the theoretical Agile Project Management (APM) framework. It highlights the central concept of APM, emphasizing its core components: Flexibility, Collaboration, and Customer Satisfaction. Key principles such as Iterative Development, Continuous Feedback, and Adaptability to Change support these components, allowing teams to work efficiently in dynamic environments. The framework also incorporates specific methodologies like Scrum, Kanban, and Extreme Programming (XP), each contributing to the agile process through different practices, such as sprints, boards, and frequent releases. The diagram emphasizes the importance of communication and feedback loops in achieving project success, ensuring the process remains responsive to stakeholder needs and evolving requirements.

Research Methodology

The research aimed to explore using Agile Project Management (APM) in product development processes at two central commercial banks in Georgia. To address the research problem, a qualitative research approach was adopted, enabling the collection of detailed, context-rich data from the specific environment where agile methodologies have been implemented. The research was designed to understand the organizational adaptation of agile practices, specifically focusing on the way these methods impact product development processes and exploring the perceptions and experiences of individuals directly involved in those processes.

A deductive reasoning approach was employed throughout the study. This method allowed the researchers to conclude existing theories and models on agile project management, validating or challenging them with empirical findings. Deductive reasoning was chosen because it offers a structured

way to assess how agile methodologies are utilized in real-world applications. This ensures that the research findings can be integrated into the established theoretical framework surrounding agile practices in different industries, especially the banking sector. The research used secondary and primary data sources to collect relevant information. Secondary data was gathered from internal documents the banks provided, including detailed reports of product development projects. These documents offered insight into the organizational approach to agile management and helped contextualize the interviews.

The primary data was collected through semi-structured interviews with key individuals involved in the agile process. These interviews were conducted with Product Owners (POs), front-end and back-end engineers, and Scrum Masters from TBC Bank and Bank of Georgia. TBC Bank and Bank of Georgia were selected because they are the two largest commercial banks in Georgia and are recognized as leaders in digital banking innovation (Munteanu & Dragos, 2021). Their extensive adoption of agile practices made them appropriate cases for examining the opportunities and challenges associated with Agile Project Management implementation. The selection of participants was strategic, aiming to gather information from individuals who had a comprehensive understanding of the agile processes, from initial communication with upper management to the technical development phase. Semi-structured interviews allowed the researchers to probe deeper into participants' perspectives while maintaining a flexible interview format that encouraged detailed responses. Using this method, the researchers explored various dimensions of agile management, including its challenges, benefits, and practical applications in product development.

A purposive sampling strategy was employed to select participants directly involved in agile product development processes. The study included 10 participants from TBC Bank and Bank of Georgia, including Product Owners, Scrum Masters, front-end and back-end developers. Semi-structured interviews were conducted between March-May 2025, with each interview lasting approximately 45–60 minutes. All interviews were recorded with participants' consent, transcribed, and analyzed using thematic analysis. The coding process focused on identifying recurring themes related to agile adoption, team autonomy, customer collaboration, regulatory compliance, and organizational challenges.

In addition to the qualitative interviews, case study methodology was applied to explore the unique and complex circumstances of the two banks' agile practices. Case studies are instrumental when examining how specific organizations adapt and apply methodologies like APM. The case study design facilitated an in-depth examination of the agile methodologies used at TBC Bank and Bank of Georgia, allowing for a thorough understanding of their implementation and impact. By examining these two cases, the study gained valuable insights into the contextual factors that influence the successful application of agile practices in the banking sector, contributing to a more nuanced understanding of how agile methodologies function in non-software development contexts.

The research methodology was designed to answer the key research questions regarding the adoption, adaptation, and effectiveness of agile project management methods in the banking sector. By combining qualitative interviews with secondary data analysis and using a case study approach, the research aimed to comprehensively understand how agile methodologies are reshaping product development processes within these two banks. The study's findings contribute to the growing knowledge of applying agile management outside the traditional software development domain, particularly in industries like banking, where agility is becoming increasingly important for organizational success.

Research Results

This study aims at evaluating the introduction of Agile Project Management (APM) into two top banking companies of Georgia. Specifically, the project assesses how agile practices have been implemented into product development processes and organizational culture among TBC Bank and Bank of Georgia. Based on the interviews conducted with POs, Scrum masters, and software developers, the results reveal a high level of agile adoption into product development activities. More specifically, there has been ample discretion on selecting agile methodologies based on specific needs of a team, mostly focusing on Kanban or ScrumBan.

There is a clear trend towards implementing ScrumBan rather than pure Scrum, which is largely linked with the ineffectiveness and cumbersome nature of Scrum ceremonies. Thus, some participants state that "We use methods depending on what is comfortable both for the whole team and for individual employees. We do things the way the team likes" (Respondent 4). It seems evident that hybrid practices in complex industries allow achieving better outcomes because of the greater flexibility and adaptability provided by these frameworks (Lazariashvili & Surmanidze, 2025). Therefore, ScrumBan allows for managing tasks faster and adjusting products to changing requirements effectively.

Adequate team autonomy and motivation proved to be critical for successful agile implementation. Product owners actively involved developers in making decisions about future product development, emphasizing the commercial side of features and product. As a result, there has been observed increased awareness among team members about their role in creating business value. Thus, a participant noted that "We try to provide developers with more responsibilities, giving them the freedom to make decisions from the point of view of information technologies. Eventually, this gives them more opportunities to develop professionally" (Respondent 1). Such an outcome corroborates Self-Determination Theory that states that autonomy and competence are primary motivational factors (Deci & Ryan, 2000). Moreover, such an observation is consistent with the agile principle supporting the concept of self-organization (Schwaber & Sutherland, 2017).

It is necessary to highlight that customer collaboration was one of the key elements in product development. Both companies actively relied on various methods of obtaining customer feedback, including conducting surveys, analyzing activity on social media, and reviewing digital banking platform analytics. In turn, such customer engagement allowed for releasing improved versions in shorter sprints based on user experience. Thus, one participant shared that "Sometimes, we just release something quickly and then revise it next week. We receive feedback during this period and release an updated version based on this information" (Respondent 4). Consequently, such an approach demonstrates the agile principle concerning customer collaboration (Rigby, Sutherland, & Takeuchi, 2016) and is consistent with adaptive feedback mechanism recommended by the authors. However, it is possible to admit that there were also obstacles to maintaining customer contact due to strict regulatory requirements.

Regulatory issues appear to be the most important barrier to efficient agile practices. Even though agility involves flexibility and speed, the process of product development must be performed in accordance with numerous regulatory measures. Thus, participants stated that "We have all those parties who need to approve our ideas, including legal department, compliance department, and the security team. Very often, we consult these departments whether our new solution meets their requirements. However, all these processes tend to take much time" (Respondent 6). This finding corresponds to previous findings concerning tensions between agility and regulatory requirements in structured environments (Boehm & Turner, 2003).

It is possible to identify interdepartmental collaboration as another challenge that should be mentioned. Agile teams faced considerable problems while cooperating with other departments that preferred traditional management methods. Differences in processes, priorities, and communication lead to additional obstacles and inefficiencies. Thus, these observations coincide with prior research emphasizing the necessity of organization-wide change while implementing agile methods (Conforto et al., 2016; Highsmith, 2013; Dybå, Dingsøy, & Moe, 2014).

In conclusion, the current study demonstrates the ability of agile practices to significantly improve flexibility, collaboration, and responsiveness of a company towards customers' needs. At the same time, successful implementation of these practices requires proper adjustment to organizational peculiarities, particularly to regulation-related issues.

Research Results

This study investigates the adoption and adaptation of Agile Project Management (APM) within the Georgian banking sector, with a focus on TBC Bank and Bank of Georgia. The findings indicate that agile methodologies enhance flexibility, collaboration, and customer-oriented product development

even in highly regulated environments. The research highlights the increasing relevance of hybrid frameworks, such as ScrumBan, which integrate Kanban's adaptability with Scrum's structured processes to meet the operational demands of banking institutions.

Theoretically, the study contributes to the literature on agile adoption beyond software development by demonstrating how agile principles—such as team autonomy, iterative development, and customer collaboration—can be effectively tailored to regulated sectors. The findings further emphasize that a successful agile transformation relies on balancing flexibility with compliance requirements and organizational coordination.

Practically, the study suggests that banks and analogous organizations should customize agile frameworks to align with their operational structures, regulatory obligations, and team dynamics, rather than adopting standardized solutions. Key factors supporting effective implementation include empowering teams, fostering cross-functional collaboration, and integrating continuous customer feedback.

The study has several limitations. It concentrates on two commercial banks in Georgia, which constrains the generalizability of the findings to other contexts. Moreover, the qualitative approach and the limited number of interview participants may not fully capture the diversity of experiences within the banking sector. Future research could broaden the sample to encompass different countries and industries, examine the long-term impact of agile adoption on organizational performance, and further explore the effectiveness of hybrid methodologies such as ScrumBan in regulated environments. In sum, the study provides both academic and practical insights into implementing agile methodologies in complex and highly regulated industries, underscoring the importance of adaptability, collaboration, and organizational alignment for achieving successful agile transformation.

References

- Anderson, D. J. (2024). *Kanban: Successful evolution of the agile method*. Blue Hole Press.
- Huemann, M., & Turner, J. R. (Eds.). (2024). *The handbook of project management*. Routledge.
- Beck, K. (2000). *Extreme programming explained: Embrace change*. Addison-Wesley.
- Cohen, D., Lindvall, M., & Costa, P. (2003). Agile software development. *Dacs Soar Report*, 11(5), 1-57.
- Munteanu, V. P., & Dragos, P. (2021). A theoretical view about agile management in bank sector. *Annals of the University of Oradea, Economic Science Series*, 30(2), 344-352.
- Dewantari, D., Raharjo, T., Hardian, B., Wahbi, A., & Alaydrus, F. (2021, November). Challenges of agile adoption in banking industry: A systematic literature review. In *2021 25th International Computer Science and Engineering Conference (ICSEC)* (pp. 357-362). IEEE.
- Hoeseb, C. H., & Tanner, M. (2020, December). Large-scale agile implementation in large financial institutions: A systematic literature review. In *2020 International Conference on Computational Science and Computational Intelligence (CSCI)* (pp. 1780-1786). IEEE.
- Buonocore, F., Annosi, M. C., De Gennaro, D., & Riemma, F. (2024). Digital transformation and social change: Leadership strategies for responsible innovation. *Journal of Engineering and Technology Management*, 74, 101843.
- Cockburn, A. (2004). *Crystal clear: A human-powered methodology for small teams*. Addison-Wesley.
- Chagelishvili, A., Surmanidze, N., & Patsatsia, K. (2023). The importance of career in human resource development. *International Journal of Multidisciplinary: Applied Business and Education Research*, 4(4), 1064-1071.
- Chen, M., Sun, X., & Liu, M. (2025). Critical success factors in agile-based digital transformation projects. *Systems*, 13(8), 694.

- Chukwunweike, J., & Aro, O. E. (2024). Implementing agile management practices in the era of digital transformation. *World Journal of Advanced Research and Reviews*, 24(1), 2223-2242.
- Esamah, A., Aujirapongpan, S., Rakangthong, N. K., & Imjai, N. (2023). Agile leadership and digital transformation in savings cooperative limited: Impact on sustainable performance amidst COVID-19. *Journal of Human, Earth, and Future*, 4(1), 36-53.
- Florek-Paszkowska, A., & Ujwary-Gil, A. (2025). The Digital-Sustainability Ecosystem: A conceptual framework for digital transformation and sustainable innovation. *Journal of Entrepreneurship, Management and Innovation*, 21(2), 116-137.
- Ivanov, I. I. (2021, July). Digital Transformation: Current Challenges. In *Business Modeling and Software Design: 11th International Symposium, BMSD 2021*, Sofia, Bulgaria, July 5–7, 2021, Proceedings (p. 275). Springer Nature.
- Dybå, T., Dingsøyr, T., & Moe, N. B. (2014). Agile project management. In *Software project*
- Highsmith, J. (2013). *Adaptive software development: a collaborative approach to managing complex systems*. Addison-Wesley.
- Kerzner, H. (2020). *Project management: A systems approach to planning, scheduling, and controlling*. Wiley.
- Lazariashvili, R., & Surmanidze, N. (2025). Job satisfaction management and its impact on burnout and turnover among auditors. *Agora International Journal of Economic Sciences*, 19(2), 222-231.
- Meredith, J. R., Shafer, S. M., & Mantel Jr, S. J. (2017). *Project management: a strategic managerial approach*. John Wiley & Sons.
- Pelser, T. G., & Gaffley, G. (2020). Implications of digital transformation on the strategy development process for business leaders. In *Promoting inclusive growth in the fourth industrial revolution* (pp. 1-43). IGI Global Scientific Publishing.
- Palfreyman, J., & Morton, J. (2022). The benefits of agile digital transformation to innovation processes. *Journal of Strategic Contracting and Negotiation*, 6(1), 26-36.
- Palmer, S. R., & Felsing, J. M. (2001). *A practical guide to feature-driven development*. Pearson Education.
- Rigby, D. K., Sutherland, J., & Takeuchi, H. (2016). *Embracing agile*. Harvard business review, 94(5), 40-50.
- Sliger, M. (2011, October). *Agile project management with Scrum*. Newtown Square, PA: Project Management Institute.
- Schwaber, K. (2004). *Agile project management with Scrum*. Microsoft Press.
- Schwaber, K., & Sutherland, J. (2017). *Scrum Kılavuzu*.
- Medeiros, D. B., Neto, P. D. A. D. S., Passos, E. B., & De Souza Araújo, W. (2015). Working and playing with scrum. *International Journal of Software Engineering and Knowledge Engineering*, 25(06), 993-1015.
- Molenaar, P. C., & Nesselroade, J. R. (2015). Systems methods for developmental research. *Handbook of child psychology and developmental science*, 1-31.
- Iivari, J., Hirschheim, R., & Klein, H. K. (2000). A dynamic framework for classifying information systems development methodologies and approaches. *Journal of management information systems*, 17(3), 179-218.
- Surmanidze, N. (2026). Strategic Human Resource Innovations for Sustainable Organizational Futures: Scenario Planning, Resilience Strategies, and Ethical Innovation. In *Exploring Human Resource Innovations in E-Economy* (pp. 381-408). IGI Global Scientific Publishing.

Sutherland, J., & Schwaber, K. (2020). The Scrum Guide: The Definitive Guide to Scrum: The Rules of the Game. *Scrum.org*.

Tharanga, W.A.T. & Uzule, K. (2025). Associations between Motivation at Fast Food Restaurants in Sri Lanka and Human Capital Indicators within the Integrated Reporting Framework. *Sustainability, Social Innovations and Digital Transformation*, 1(1), 1-11. <https://doi.org/10.2478/ssidt-2025-0001>

Tshabalala, M. M., & Marnewick, C. (2021). Agile as an enabler towards innovation-based organisational transformations. *South African Journal of Information Management*, 23(1), 1-10.

Womack, J. P., & Jones, D. T. (2022). *Lean thinking: Banish waste and create wealth in your corporation*. Free Press.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.

Boehm, B., & Turner, R. N. (2003). *Balancing agility and discipline: A guide for the perplexed*. Addison-Wesley Professional.

Conforto, E. C., Amaral, D. C., Da Silva, S. L., Di Felippo, A., & Kamikawachi, D. S. L. (2016). The agility construct on project management theory. *International Journal of Project Management*, 34(4), 660-674.