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Challenges of Implementing Agile Methodology in the Jordanian Banking Sector

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Abstract

Traditional banking operations must change because financial industry dynamics and customer demands have started to transform the market. Financial institutions use Agile methods which were created for software development to increase operational efficiency while boosting customer satisfaction levels. Jordanian banks face various obstacles in Agile implementation which stem from banking employees' resistance to change and from regulatory requirements and legacy system integration complexities as well as low Agile skill levels within banking organizations. Decision-making patterns that enforce hierarchy act as an obstacle to the implementation process. This research combines interviews of banking experts and surveys to study Agile implementation in Jordanian banks through a mixed-methods approach. The study identifies important barriers that lead to proposed solutions including professional training for selected positions as well as top-level executive backing and stepwise rollouts. The solutions to these problems will enable Jordanian banks to gain agility and competitiveness as well as innovation potential. The study advances knowledge about Agile adoption in literature while presenting usable recommendations for financial institutions. Survey results show resistance to change was the highest barrier at 75% of Jordanian banking employees, then followed by insufficient training as the highest issue at 50%. Moreover, 45% of the participants struggled to implement Agile with existing banking systems. These remarks highlight formal Agile transformation approaches, including specialized training programs and executive-level sponsorship.

Keywords: Agile methodology, banking sector, Jordan, change management, digital transformation, organizational culture, regulatory compliance, Agile adoption challenges

Introduction

Current banking operations experience a deep transformation because state-of-the-art technology combines with new customer needs while facing escalating market competition. Technology has proven traditional bank systems which rely on rigid hierarchical organizations and bureaucratic decision process to be insufficient when handling the current financial market's flexible structure. The software development method known as Agile adopted for software development now finds substantial use across many sectors which includes banking. Through these modern business methodologies organizations create adaptive systems that enable quick market responses while getting continuous input from customers and teams for better results and client satisfaction.

Worldwide banking organizations embrace Agile methodologies to boost business operation performance and drive innovation development while strengthening user interaction. Banks achieve better product development outcomes and digital transformation speed through deployed Agile frameworks Scrum and Kanban as well as SAFe (Scaled Agile Framework). Survey results support the notion that 48 percent of Jordanian banking personnel advocate the use of a hybrid of project management methodologies, favoring Agile along the traditional method. In addition 44 percent supported the alternative Agile methodologies, with a mere 8 percent continuing to adhere to the Waterfall approach. The contemporary trend is toward a more flexible methodology.

Despite its numerous benefits Agile adoption in banking operations faces substantial implementation hurdles when applied to the banking sector within Jordan. Implementation barriers that stop successful Agile deployment include regulatory restrictions together with cultural opposition as well as the need to unite new systems with existing infrastructure and a shortage of experienced Agile professionals.

Problem Statement

Agile methodologies display success in multiple business fields but banking institutions in Jordan have not fully adopted them yet. Banking companies operating in Jordan face multiple barriers to Agile implementation due to their restrictive regulatory requirements and their strong hierarchical structures as well as their reliance on traditional legacy information systems. People from banking staff who work with conventional

banking processes show reluctance to change their cultural model and operational practices for implementing Agile principles. The successful implementation of Agile principles faces barriers from banking professionals who lack sufficient expertise in Agile principles.

The research investigates obstacles that prevent Jordanian banks from adopting Agile while assessing operational effects and developing strategic solutions for addressing these challenges. The resolution of these barriers will help Jordanian banks to improve their speed to market while strengthening their position in the changing financial sector.

Research Objectives

The research attempts to achieve four main goals:

1. Identifies and analyzes all major obstacles facing the implementation of Agile methodologies in the banking sector of Jordan.
2. Investigates three main elements: organizational culture as well as regulatory policies and technological infrastructure which affect Agile adoption rates.
3. Looks into Agile methodology perceptions at Jordanian banking institutions together with their prospective advantages.
4. Suggest both tactical resolutions and proven practices which aid Jordanian banking institutions overcome their Agile implementation barriers.
5. Enhance existing knowledge about Agile methodologies in financial institutions by supplying evidence that pertains specifically to Jordanian institutions.

Research Questions

This research study will tackle three main questions to deliver its objectives.

1. What influences the implementation method of Agile within Jordanian financial institutions due to regulatory and compliance requirements?
2. What impact does the organizational culture maintain within Jordanian banking institutions when it comes to implementing Agile practices?
3. Which specific methods exist for businesses to break through implementation obstacles within the banking sector?
4. How do Banking professionals in Jordan view both advantages and constraints of Agile methodologies from their perspective.

Significance of the Study

This research establishes important insights which bankers need to implement along with governmental officers and IT developers as well as

financial control agencies. This research helps understanding the main obstacles which impede Agile adoption through analysis of available resolution options. Banking institutions need guidance to create effective strategies which become suitable for navigating Agile transformation processes. The discovered insights enable regulatory organizations to develop innovative policies which promote innovation and achieve regulatory standards. A research study will assist IT professionals along with project managers to understand the best methods for embedding Agile within traditional banking structures. This study contributes ideas on Agile methodologies in financial institutions toward the academic conversation about Agile methods in trending markets such as Jordan.

Management Theories Related to the Banking Sector

Classical Management Theory

The theory of Classical Management stands as one of the first methods that organizations originally used to increase their operational efficiency. The management theory maintains its main influences from Frederick Taylor's scientific management principles to focus on workflow structures and specialized labor systems as well as hierarchical organizational leadership. The management approach implemented by Taylor supported performance enhancement through standardized work assignments along with precise responsibility allocation and rigid supervision barriers to lower operational inefficiencies. The principles have extensive use in banking institutions because banks require strict adherence to regulations combined with dependable operational functioning.

Banks achieved stability through classical management principles which enable them to maintain financial procedures with strict control features while requiring accountability and standard operational practices. The rigid banking structure demonstrates powerful efficiency in typical banking operations yet causes problems during Agile implementation. The modular development principles of Agile create an opposite approach compared to classical management models because they value adaptability as well as iterative development and flexible methods (Masood, 2017). Accepting Agile approaches into Jordanian banking operations demands workplace change together with strategic adjustments where core management structure meets flexible work practices alongside regulatory adherence.

Contingency Theory

Contingency Theory demonstrates that there exists no universal best management approach because effective methods depend on multiple external plus internal elements. Although emerging to overcome traditional

management deficiencies Contingency Theory insists that organizations should modify their management systems according to specific variables such as market conditions along with regulatory requirements and technological developments and organizational culture factors.

The banking industry benefits strongly from contingency-based management because it faces regular shifts in finance-related conditions. Financial establishments must adapt their business practices due to changes in regulation and economics and both customer taste and technological developments. Traditional banks which refuse to update their management systems face decreased market competitiveness as well as impaired market response capabilities. The theory indicates that Jordanian banks need to establish adaptable approaches to decision-making and operational functions that meet financial standards (Beerbaum 2020). By embracing Agile methodologies banking institutions obtain better outcomes from contingency thinking because they develop flexible problem-solving processes that address new trends and unexpected issues effectively.

Modern Strategic Management Theories

Modern strategic management theories concentrate on delivering agility together with innovation and customer-centric approaches which correspond to Agile methodology principles. At present the Resource-Based View (RBV) together with Dynamic Capabilities Theory stand as significant modern theories because they stress building internal competencies to maintain competitive advantage.

According to Resource-Based View (RBV) the success of an organization depends mainly on three elements - human capital, technological assets and strategic capabilities. The banking industry depends on this perspective to focus investments on qualified personnel and digital banking systems together with innovative financial solutions to set itself apart from other organizations. The Agile methods work in harmony with this perspective to promote cooperative efforts and sustained knowledge expansion along with incremental service enhancements within banking service delivery (Amini & Rahmani, 2023).

Organizations need to develop their adaptive resource restructuring abilities based on Dynamic Capabilities Theory in order to adjust to evolving market conditions. Banks should make use of this approach as market conditions in banking constantly adjust due to new technologies alongside regulatory changes. Agile practices establishment helps banks develop dynamic capabilities which improve their innovation capacity and optimized customer interactions and enhanced competitive responsiveness. The principles of Agile empower Jordanian banks to enhance their service

delivery and operational management and develop permanent improvement practices.

Core Principles of Agile Methodology

Agile methodology uses foundational principles for organizations to boost productivity together with fostering team relationships while making systems more flexible. The Agile Manifesto (Agile Alliance, 2001) provides principles which industries from banking to others implement because they help organizations achieve better innovation and operational speed. The Agile approach doesn't work like previous project management systems because it provides value delivery by letting teams progress in cycles with feedback in a continuous manner instead of using rigid structures along with detailed documentation. Agile methodology keeps its foundational structure based on four essential core values which form the basis of its practical execution framework.

The fundamental principle of Agile starts with putting individuals together with their interactions ahead of tools and processes. Agile places priority on human collaboration by understanding that productive teamwork and direct project communication produces superior results. The banking industry depends on bureaucratic hierarchy, standardized approaches that limit communication quality along with slowing down necessary decisions. Agile builds an open environment that allows multiple functional teams to work hand-in-hand to exchange information directly while performing continuous updates to their project targets (Ahmed & Elali, 2021). Agility receives improvement because this approach gives employees the power to proactively solve difficulties while sharing innovative ideas beyond the limitations of conventional bureaucratic processes.

Working Solutions Over Comprehensive Documentation stands as the second Agile principle. Agile development follows a different method than standard approaches because it delivers operational solutions fast without extensive pre-development documentation. Agile projects need documentation but maintain a casual approach to documentation procedures as a way to stop delays and help teams develop usable products that undergo multilevel improvements. The banking sector demands strict compliance demands that require detailed documentation; when implementing Agile methods this sector needs to find a proper balance between documentation needs and speed of product delivery. The implementation of Agile becomes possible in banks through automated reporting systems which integrate with Agile-friendly compliance frameworks (Brühl, 2022). Results from this change allow banks to launch products at a quicker pace without breaching regulatory requirements. The essential principle in agile development is for customers to lead the process rather than engage in bargaining stages. The

key principle of Agile methodologies requires continuous customer involvement because this leads to products that satisfy altered customer needs together with market requirements. The project development in traditional banking utilizes contractual requirements which stay unchanged from the initial definition point until the project's end. This model does not necessarily adjust to changing customer demands or new financial industry patterns. Agile implementation makes it possible for banks to keep their clients up-to-date while accepting continuous feedback that steers service development in better directions. The approach centers on customers because it makes banks develop customized financial products that match market needs and increases customer satisfaction (McKinsey & Company, 2021). The last essential component of Agile methodology demands priority of adaptation over faithful adherence to plans. Under the Agile system companies must accept flexibility along with sequential decision adjustment rather than following strict long-term plans with fixed guidelines. Banks operating in times of quick technological progress together with modifications in regulatory rules need to maintain flexible strategic approaches for unexpected market changes. Scrum and Kanban among other Agile frameworks enable teams to conduct ongoing evaluations through which they modify their methods according to present market situations. Financial institutions need this flexibility especially while handling regulatory alterations and dealing with market changes and emerging fintech developments according to Santhanam & Suresh (2023). Financial institutions gain resilience together with improved service quality by implementing Agile principles which helps them defend their market position in an evolving financial sector.

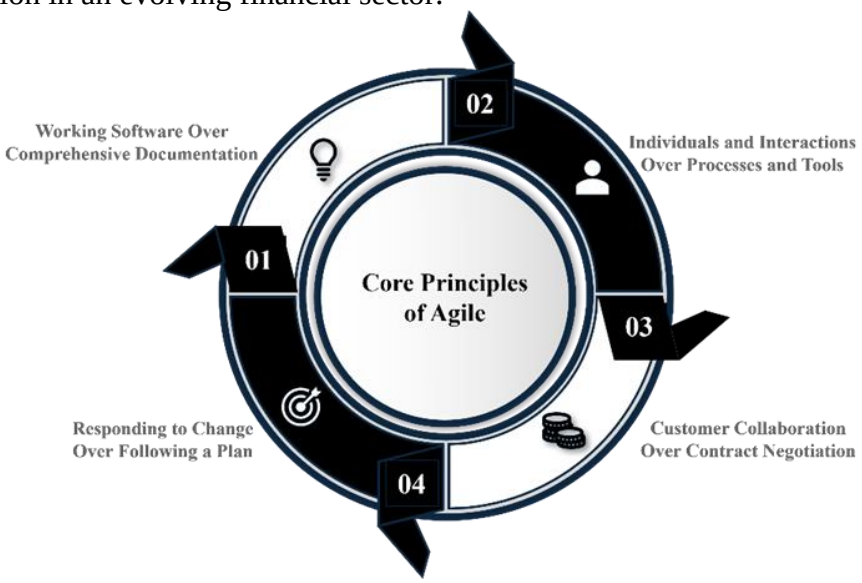

Fig. 1: Principles of Agile

General Challenges of Agile Methodology Implementation

The banking sector faces many obstacles during Agile methodology implementation which prevent a smooth transition. Several hurdles block swift Agile adoption in financial institutions because they result from organizational culture together with regulatory barriers as well as technical restrictions alongside institutional resistance. Like global financial institutions Jordanian banks find it hard to implement Agile principles within their established banking structures because those systems typically operate with rigid organizational models as well as established business processes. The following section outlines main obstacles that occur when banks implement Agile approaches.

Agile implementation faces significant challenges when dealing with banking institutions because staff members actively resist organizational change. Traditional banks maintain bureaucratic systems with hierarchy structures that require stability and defend against risk by following strict regulatory rules. The bank's established structures currently experience difficulties because they work against Agile principles which value flexible teamwork and iterative work cycles. A working paradigm based on top-down management requires employees to adapt to collaborating and adapting in their new work environment. A significant problem occurs when middle managers resist changes because Agile approaches decrease their authority to make direct decisions (Brühl, 2022). The implementation of Agile requires financial institutions to create organizational changes that build a workplace culture enabling open collaboration along with experimentation and distributed decision-making authority.

Agile implementation faces major challenges in the banking sector because of the numerous regulatory standards in place. To operate banks need to follow strict financial regulations together with central financial authority imposed risk management policies and data security requirements. Consulting Beerbaum (2020) reveals how Agile methodology encounters difficulties with regulatory compliance structures because flexible development methods might create risks involving regulations and security breaches. The Central Bank of Jordan imposes strict regulatory guidelines at banks in Jordan causing an extra challenge for Agile implementation. Financial institutions should create Agile method hybrids which combine compliance regulations with security protocols in their Agile development framework to ensure flexibility.

Agile's continuous development cycles cannot function with the outdated legacy systems that traditional banks currently use. Traditional waterfall methodologies used for creating legacy systems do not provide enough flexibility for implementation of Agile methodologies. Banking institutions face a crucial technological hurdle when they try to merge Agile

methods with their established core banking systems because this necessitates strong financial investment to modernize their IT infrastructure (Tengstrand et al., 2021). Many financial organizations including Jordanian banks face difficulties in implementing Agile transformation because of their requirement to adapt to limitations in legacy IT frameworks. Although Agile methodologies need Agilistic solutions like microservices architecture, cloud-based platforms and DevOps practices to work successfully with banking IT systems.

A proper Agile transformation depends on employees with knowledge of Agile frameworks and methodologies and best practices alongside skills in Agile method implementation. Agility implementation faces obstacles because banking professionals do not possess adequate Agile skills. Insufficient training during Agile implementation leads to operational problems and poor results because of imprecise implementations according to Bitzer et al. (2023). Banks must deliver extensive training to their workers because it enables better understanding and correct implementation of Agile principles throughout different teams. Outside Agile experts and consultants help facilitate better transitions when organizations bring Agile into their operations.

Large financial institutions face substantial barriers when they attempt Agile expansion throughout their entire organizational structure. The implementation of Agile across their organization faces major challenges for large banks because they operate with multiple departments across an extensive hierarchical framework while dealing with strict regulations. Isolated Agile team implementation within banks leads to Agile failure because banks do not address essential organizational changes that would make their Agile model scalable. The practical execution of Agile scaling requires full leadership engagement as well as team cross-cooperation and standardized organizational goals according to Kapur et al. (2019) through established frameworks such as SAFe and LeSS.

Traditional banking risk management functions oppose the adaptive and speedy methods of Agile due to their different approaches to risk assessment. Financial institutions need to validate that Agile practices adhere to their existing risk management frameworks while maintaining agile speed versus doing comprehensive risk assessments (Mustafa et al. 2019). The development of Agile risk management strategies by banks requires systems which perform recurring risk evaluation together with regulatory requirements but also preserve market responsiveness. The development of an integrated system demands joint effort between risk management teams and Agile project groups that combines Agile methodologies with risk reduction protocols.

Review of Literature

A review of the published literature examines research about Agile methodology in banking along with theoretical views and case studies and gathered empirical results. The section integrates essential findings from three main sources which include academic literature and industry reports as well as practical Agile framework implementations in banking institutions. The Agile methodologies expanded their scope after origin to embrace software creation and now cover numerous businesses such as banking. Agile frameworks emerged as modern project management systems because they address three crucial requirements: quick financial product delivery along with customer satisfaction through flexibility. Initial banking institutions adopting Agile programs have identified better operational performance along with better customer satisfaction and enhanced product development from their Agile structure changes (Beck et al., 2001; Highsmith, 2009).

Different Agile frameworks exist which banking institutions implement to solve their unique business issues. Financial organizations make extensive use of Scrum and Kanban together with SAFe (Scaled Agile Framework) as their primary organizational methodologies. Through Scrum institutions receive structured management methods for iterative development together with Kanban mechanism which supports workflow visualization and delivers projects continuously. Largely-run banking institutions benefit from implementing the SAFe framework because it helps to scale Agile development at the organizational level and unifies project objectives among multiple teams (Leffingwell, 2011).

Most studies about Agile adoption in banking showed both the advantages and the challenges facing its implementation. Agile technology enables banks to enhance their speed at adapting to regulatory changes as well as market requirements and digital transformation needs according to Dikert et al. (2016). Agile implementation faces widespread barriers because of cultural resistance together with regulatory requirements and difficulties with enterprise system alignment (Conboy, 2009).

The rising number of studies examining Agile in banking has not filled all the operative knowledge gaps. Few research studies examine Agile banking practices in emerging markets while most investigation centers on Western banking institutions such as Jordan. Current research about Agile frameworks and benefits exists but lacks substantial findings regarding both Agile sustainability into the long term and its effects on organization culture as well as financial results. Research that resolves these knowledge deficits will generate essential data about Agile methodology success in Jordanian banking institutions and global institutions.

Methodology

This research extends previous literature proof which demonstrates Agile methodologies' destructive impact on banking while exploring Jordanian banking commercial implementation through Mixed-Methods research to study implementation complexities and create practical implementation strategies. This study adopts the diverse research approaches observed in the literature review about quantitative surveys and qualitative case studies due to their proven influence on understanding successful Agile methodology adoption through statistical data and real-life narratives

Quantitative and Qualitative Data Collection:

This study emulated the survey approach established by Alallaf (2010), Ahmed & Elali (2021), and Tengstrand et al. (2021) to discover and analyze and respond to Jordanian banking sector obstacles of agile methodology adoption. The survey methodology holds its validity because research proves it effectively collects extensive experiences and opinions from numerous participants. The survey contained established questions which aimed to measure the scope and depth of Agile implementation challenges according to the literature review findings. Descriptive along with inferential statistics were used for survey data analysis to understand what factors influence Agile implementation throughout these institutions.

The research used semi-structured interviews because it adopted the methodological approaches from pivotal studies in the literature review to explore ten important banking stakeholders in Jordan. The group of stakeholders consisted of Agile practitioners along with IT professionals who work directly on Agile programs and management staff. The interview sessions explore detailed individual perspectives of staff members directly implementing Agile which extends beyond survey-based data to deliver substantial insights.

The methodology used selection criteria based on bank role together with experience levels and Agile transformation involvement in different financial institutions. The researchers conducted interviews where they studied bank representatives to analyze Agile implementation hurdles combined with the realized benefits and strategic approaches for Agile integration across different financial institutions. The gathered interview details provide essential knowledge for comprehending actual Agile difficulties and achievements through implementation. The interview findings show how various banking institutions implement Agile and demonstrate shared challenges related to change resistance and training needs alongside the importance of powerful leadership**.**

Population and Sampling Strategy

All Jordanian commercial banks that implemented Agile methodologies make up the focus group for this investigation. The extensive research method allows the study to collect experiences and practices from various banking institutions. The quantitative survey used a comprehensive method by reaching out to employees from every Jordanian commercial bank which practiced Agile to obtain standardized information. Research interviews included ten key stakeholders who possessed firsthand knowledge of implementing Agile methodologies as the research objective was to obtain detailed qualitative information.

Results and Data Analysis

Chart below indicates a majority of bank employees being managers who offer analysis from leader and executive perspectives focused primarily on decision-making responsibilities. Technical implementation of Agile systems requires IT professionals representing 24% of the respondents while Agile practitioners specializing in methodologies form 10% of the group. Aside from other indirect roles 6% of bank employees participated in the study.

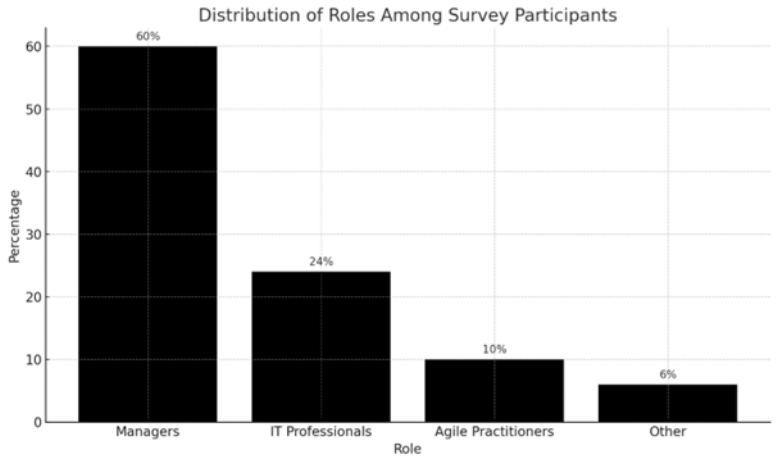

Figure 2: Distribution of Roles According to Survey Participants

Experience with Agile Methodology:

Table 1 shows that 40% of surveyed individuals possess 3-5 years of Agile experience reflecting an advancing phase of Agile application in their banking institutions. Twenty percent of survey participants hold 1-3 years of Agile experience followed by ten percent who began working under one year. These numbers indicate continued implementation and interest in Agile methodology.

Role	%	Experience with Agile	%	Preferred Methodology
Managers	60%	< 1 year	10%	Agile
IT Professionals	24%	1-3 years	20%	Waterfall
Agile Practitioners	10%	3-5 years	40%	Hybrid
Other	6%	> 5 years	30%	

Table 1 shows that 48% of participants opt for using Agile method together with traditional approaches in their projects while 44% support Agile-only approaches. Only 8% of the participants support the traditional Waterfall method because there has been an apparent reduction in the use of rigid linear approaches.

Key Challenges and Impediments

Survey results show that multiple essential challenges exist for Jordanian banks when implementing Agile methodologies. Fig 3 summarizes these key obstacles:

- The majority of 75 percent of respondents selected organizational opposition to change as the primary barrier in their path toward implementation.
- The survey demonstrated that training deficiencies affected half of all respondents who saw implementation challenges in Agile methodology deployment.
- Existing systems posed technical problems for Agile implementation according to 45% of participants who responded to the survey.
- Traditional corporate cultures pose a challenge in Agile implementation according to 40% of those surveyed because of their cultural barriers.
- Agile adoption faces challenges when leaders fail to provide support according to 35% of respondents who participated in the survey.

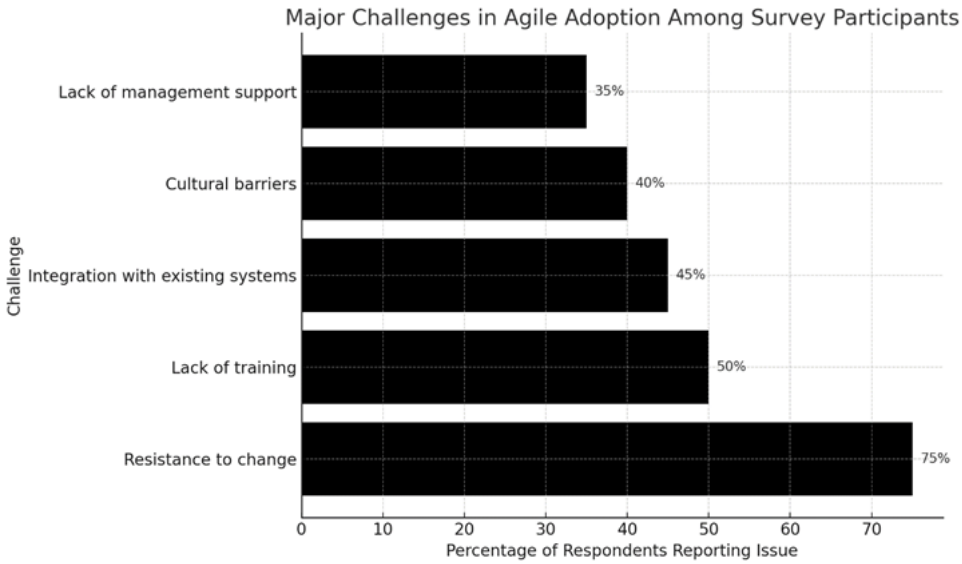

Fig 3. Major Challenges in Agile Adoption Among survery Participant

Conclusion

Agile methodologies implementation in Jordanian banking services creates multiple opportunities to improve operational efficiency and both individual and organizational innovation as well as customer satisfaction levels. The study recognizes multiple challenges which prevent effective Agile practice adoption. The path to Agile implementation within Jordanian banks becomes challenging because of cultural resistance coupled with regulatory constraints and integration challenges and a lack of qualified Agile experts and difficulties in increasing operations scale. Traditional banking institutions together with their hierarchical structures and regulatory environments prevent them from successfully implementing Agile methodologies because digital banks and fintech firms have shown better results in Agile implementation. This research demonstrates that different banking institutions experience different levels of Agile implementation and identifies specific why tailored Agile deployment strategies become essential. Agile frameworks help financial businesses adapt yet monetary regulatory requirements and organizational procedures in the banking sector demand balanced implementation methods. These barriers require a detailed solution which should unite executive backing with ongoing staff instruction together with technological funding.

Recommendations

The following suggestions will help implement Agile methodologies successfully in Jordanian banking institutions:

1. Organizational leaders need to create an agile work environment through promoting agile principles by enabling teamwork and continuous learning together with adaptation to change. Leaders should use change management strategies to lower the resistance that exists when implementing Agile frameworks.
2. Banks along with regulatory bodies should team up to establish Agile-compliant compliance frameworks which regulatory bodies must support. Banks should gain access to testing areas through regulatory sandboxes where they can test Agile methods according to financial rules.
3. Banks must establish comprehensive Agile training programs which need to cover all organizational employee levels. Agile development training gets implemented through workshops and certification courses as well as mentorship programs that foster Agile competence inside organizations.
4. The successful integration of Agile practices depends on banking institutions implementing contemporary IT infrastructure based on cloud computing with micro services architecture and DevOps methods. Modern technology platforms will speed up code evolution as well as let Agile models function more efficiently.
5. Agile deployment in banking requires a divided implementation strategy where chosen departments first embrace Agile practices which later expand organizational Agile adoption. Businesses seeking to achieve a seamless transformation should adopt hybrid Agile methods that unite Agile with established bank business practices.
6. Agile excels when companies establish departments which support collaborative work relationships. The grouping of bank teams should bring together representatives from IT together with members from risk management operations and customer service and ensure their work advances Agile objectives.
7. Successful implementation of Agile needs consistent feedback assessments combined with iterative processes. Performance metrics must be created by banks to conduct Agile reviews with feedback collection from staff members and customers as part of enhancing Agile deployment strategies.

Future Research Directions

The present research has yielded beneficial knowledge regarding Agile adoption in Jordanian banks yet additional studies must investigate how Agile will affect financial outcomes and client experiences long-term. Research should extend beyond banks to assess Agile implementation within insurance and investment sectors of the financial industry for a wider understanding of its application in the field.

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Data Availability: All data are included in the content of the paper.

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