

Lean Banking: An Approach to Improve Service Quality in Islamic Banks in the Era of the Digital Revolution

Case Study: Al Salam Bank Algeria

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Abstract:

This paper explores the Lean Banking role in improving Islamic banking service quality amid the Digital Revolution; it traces the evolution of Lean thinking from industry to Islamic financial services.

A conceptual model is proposed, integrating Lean tools with Sharia compliance and digital innovation. Digitization is shown to combat inefficiencies like redundancy and slow processes in Islamic banks.

Al Salam Bank Algeria serves as a case study, applying Lean through AI, RPA, and performance reengineering.

Empirical findings reveal a specific type of inefficiency "Sharia waste" from non-compliance in contracts. Three main sources of waste are identified: rigid administrative culture, weak training, and tech-Sharia disconnect.

The study confirms that quality and efficiency in Islamic banks require Sharia-focused operational reform since Lean principles alone are insufficient without Sharia governance integration and skill development.

The paper advocates for a responsive, ethical, and digitally empowered Islamic banking model.

Key Words: Banking Service Quality, Lean Approach, Lean Islamic Banking, Waste Reduction, Sharia Compliance, Value Creation.

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1. Introduction

In recent years, the banking sector has undergone profound transformations driven by intensified competition, rapid financial-technology development, and rising customer expectations for fast, intelligent, and secure services. The Digital Revolution has reshaped this landscape by introducing service-delivery models that emphasize efficiency and innovation over size and physical presence.

Within this evolving context, Islamic banks must reconsider their operational models to align quality standards with Sharia principles amid increasingly complex regulations. This requires improved performance and stronger value creation for both internal and external stakeholders. Among modern management approaches, the Lean methodology—long proven in industry—is gradually extending to the financial sector.

However, Lean Banking within Islamic institutions remains in its infancy and faces theoretical and practical challenges in an era of digital transformation. Accordingly, this paper examines the impact of Lean principles on Islamic-banking service quality and assesses their adaptability to Sharia and regulatory specificities.

Study Importance and Objectives:

The significance of this study lies in proposing an integrated approach that links contemporary operational-management practices with the Sharia-governed framework of Islamic finance. This perspective provides Islamic banks with new avenues to enhance performance and strengthen competitiveness in a rapidly changing environment.

The paper explores the practical application of Lean Banking principles by:

- Analyzing Lean theory and adapting it to Islamic-banking specificities.
- Identifying challenges and opportunities created by the Digital Revolution.
- Defining Islamic-service-quality dimensions focused on Sharia compliance and customer satisfaction.
- Developing an analytical model combining Lean tools with digital-transformation technologies.
- Evaluating Al Salam Bank Algeria as a case study linking theory with practice.

Research Problem:

Despite the significant development witnessed by Islamic banks in recent years in terms of product diversification and branch network expansion, many of them continue to face persistent challenges related to service quality, operational speed, and process efficiency.

Due to the nature of their products, that are based on contracts, which must be executed within a strict Sharia-compliant framework, resulting in increased procedural complexity and extended processing times.

On the other hand, the Digital Revolution presents extraordinary opportunities for re-engineering banking services through process automation, data analytics, and waste reduction in all its forms. However, adapting these tools within an Islamic banking model governed by stringent Sharia regulations raises essential questions about the extent to which these banks can adopt the Lean Banking model as a strategic tool for enhancing quality and performance.

Thus, the central research problem of this paper can be framed as follows:

What is the impact of applying Lean Banking principles on improving the quality of Islamic banking services in the context of the Digital Revolution?

❖ ***Sub-Questions***

- How can Lean principles be adapted to the operational specificities and Sharia requirements of Islamic banks?
- How does the integration of digital transformation technologies influence the implementation of Lean Banking in Islamic banks?
- What is the relationship between applying Lean Banking principles and improving service quality in Islamic banks, particularly in terms of efficiency and Sharia compliance?

❖ ***Hypothesis***

- The adaptation of Lean principles to Sharia-compliant frameworks positively contributes to the operational performance of Islamic banks.
- The integration of digital transformation tools facilitates the effective implementation of Lean Banking practices in Islamic banks.
- Applying Lean Banking principles has a significant positive impact on the overall quality of Islamic banking services, particularly by reducing procedural waste and enhancing compliance.

❖ ***Research Methodology***

The study adopts a descriptive-analytical approach on the theoretical level, through a thorough review of the literature related to the Lean Approach and its evolution within the banking context, with a specific focus on the particularities of the Islamic environment. In addition, the study draws on current reports and findings from studies addressing digital transformation in Islamic banking.

On the practical side, the research includes a case study of Al Salam Bank Algeria, relying on field data and documented insights available to the researcher in his capacity as a senior staff member at the bank's central administration. Furthermore, the study incorporates several administrative experiences and practices related to lean principles, multitasking, digital transformation, and other continuous improvement tools associated with quality and productivity.

2. Islamic Banking Service Quality

2.1. Definition and Importance of Service Quality in Islamic Finance

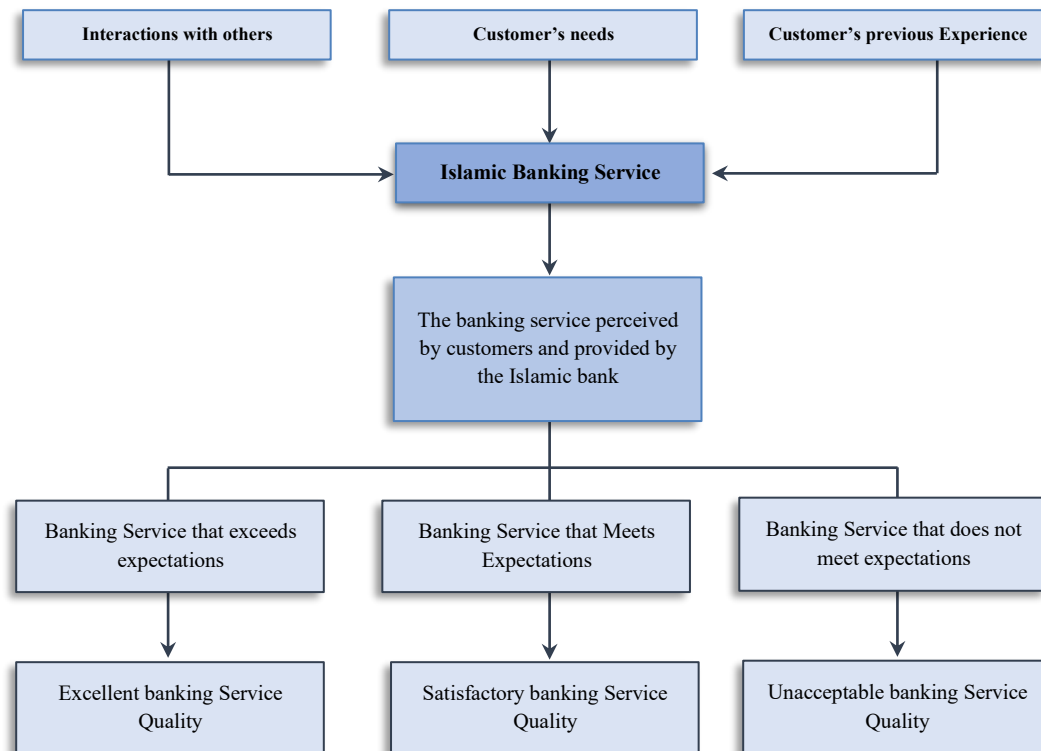
Since World War II, the financial-services sector has evolved from a supporting role into a key driver of economic growth. Consequently, service quality has become a decisive competitive factor for both conventional and Islamic banks.

a) Defining Islamic Banking Service Quality

Delivering quality services in Islamic banking is complex because it must align intangible service attributes with Sharia principles. Islamic banks aim to meet client needs ethically and efficiently while attracting those avoiding interest-based finance. Quality therefore involves satisfying customer expectations through available resources and continuous evaluation.

Service quality has two facets: internal compliance with standards and external customer satisfaction. As Attawi et al. (2014) note, perceived quality from the client's view outweighs technical or regulatory benchmarks.

Figure 1: Determinants and Components of Islamic Banking Service Quality



Source: Compiled by the researchers based on Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41–50.

b) Importance of Islamic Service Quality

Service quality has become a strategic management pillar (El-Bakri, 2002, p. 366) that directly enhances performance and competitive advantage. The U.S. Technical Assistance Research Programs Institute found that retaining a customer for five years can yield about \$175 in additional profit, confirmed by the American Society for Quality (Al Zaabi & Wilson, 2006, p. 30).

High-quality services thus strengthen financial results, customer retention, loyalty, reputation, and cost efficiency—driving sustainable growth and market share.

- 1. Achieving Financial Gains:** High-quality banking services enhance customer retention, attract new segments, and expand business volume, making service excellence a strategic driver of profitability and long-term performance.
- 2. Retaining Internal Customers (Employees):** Developing skills, recognizing performance, and fostering respect reduce turnover and costs while aligning employee motivation with institutional goals.
- 3. Retaining External Customers:** Customer retention is vital to profitability. Consistent, Sharia-compliant services build-enduring relationships that strengthen trust and loyalty.
- 4. Preserving Customer Loyalty:** Loyalty among clients and employees enhances stability and credibility and reflects effective relationship management.

5. **Reducing Reputational Risk:** Transparency and ethical conduct build a strong public image and reinforce stakeholder confidence.
6. **Cost Efficiency and Market Share:** Embedding quality across operations enables early error detection, minimizes waste, and optimizes resources—boosting productivity, profitability, and market strength.

2.2. Dimensions of Islamic Banking Service Quality

Banking-service quality is multidimensional. Lehtinen & Lehtinen (1982) proposed physical, corporate, and interactive quality; Grönroos (1984) distinguished technical and functional aspects; and Parasuraman, Zeithaml & Berry (1985) identified ten measurable dimensions forming the basis of modern assessment.

Synthesizing these, six key dimensions define Islamic-service quality:

- ✓ **Tangibility:** branch design, technology, facilities, staff appearance;
- ✓ **Reliability:** accuracy, consistency, and adherence to commitments;
- ✓ **Responsiveness:** prompt, efficient attention to customer needs;
- ✓ **Assurance:** confidence from error-free, transparent service;
- ✓ **Empathy:** personalized care reflecting religious sensitivities;
- ✓ **Sharia Compliance:** this dimension is specific to Islamic banking and reflects the bank's commitment to Sharia principles in its financial offerings. This is achieved through specialized internal departments and the establishment of Sharia Supervisory Boards at the governance level.

The standard for this type of quality is derived from Islamic jurisprudence (fiqh), particularly as framed by the Islamic Fiqh Academy, and applies especially to areas of financial ambiguity that invite scrutiny from modern Islamic legal scholars (Al-Subai'i, 2017, p. 179).

The Evaluating quality is complex due to its intangibility and customer involvement. Grönroos & Lovelock (1996) stress that perception arises from comparing expectations to performance. Despite contextual differences, SERVQUAL remains the leading tool. Al-Muhayawi (2006) identifies five assessment levels:

- **Expected Quality:** service level customers anticipate;
- **Perceived Quality:** quality bank management believes it provides;
- **Technical Quality:** the standards and methods staff employ;
- **Actual Quality:** real execution of services versus expectations;
- **Desired Quality:** the satisfaction level banks aim to achieve.

3. The Lean Management Approach in Islamic Banks: Theoretical Foundations.

Like The banking sector, like other industries, seeks profitability, competitiveness, and customer satisfaction through efficient, high-quality services. Globalization, liberalization, deregulation, and financial inclusion have reshaped banking, while the 2008 crisis revealed weaknesses such as eroded trust and stricter regulations. Banks have since restructured operations to improve agility and reduce waste.

Within this context, the Lean Approach offers a pathway to operational excellence, enabling value creation without major investment. However, transferring lean tools from manufacturing

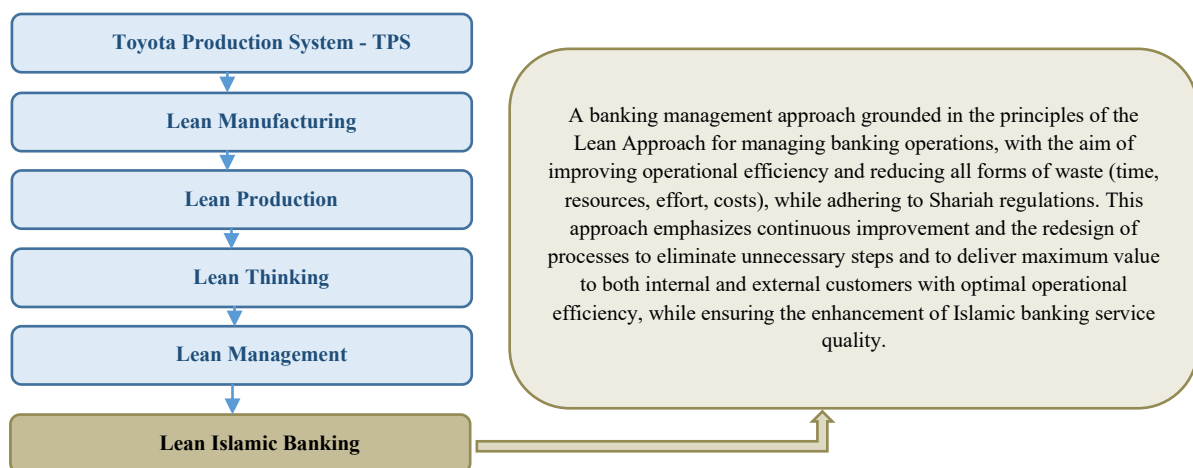
to services is complex. This study adapts Lean Production and Lean Management concepts to banking realities, drawing on Santos & Cabrita's "Lean Banking: Application of Lean Concepts and Tools to the Banking Industry".

3.1. The Emergence and Concept of the Lean Islamic Bank

The Lean principles in banking have evolved from limited back-office use to system-wide optimization that supports customer service and innovation (Grozdića, Demko-Rihtera & Benkovićb, 2023). Initially introduced by Womack & Jones (cited in Bowen & Youngdahl, 2002) and refined by Arfmann & Topolansky Barbe (2014), Lean methodology was later identified by Leite & Viera (2015) as lacking integrated service models. Grozdića et al. (2023) define lean banking as a process-improvement system focused on waste reduction.

Lean Islamic Banking thus emerges as a Sharia-compliant management model combining lean efficiency with ethical governance (Teich & Faddoul, 2013; Jurado & Fuentes, 2014; Bakri, 2019). Integrating Lean tools with digital technologies enables Islamic banks to streamline workflows, eliminate redundancy, and redirect resources toward value-adding, compliant activities—enhancing service quality, efficiency, and stakeholder value.

Figure 2 : The Historical Evolution of the Lean Islamic Bank Concept



Source: Compiled by the researchers based on previous literature.

3.2. Objectives of Lean Islamic Banking

Following the conceptual foundation of Lean Islamic Banking, these institutions are characterized by their strategic, flexible integration of information technologies, allowing them to respond swiftly to market volatility and external shifts (Apicha, 2012). They adopt dynamic change management and continuous performance monitoring aligned with internal capabilities to ensure sustainable success. To illustrate their distinctiveness, a comparative framework highlights key differences between traditional and lean Islamic banks focusing on structure, efficiency, service delivery, and value creation. This comparison underscores Lean Banking's added value in reconciling operational excellence with Sharia compliance, positioning it as a forward-looking model for modern Islamic finance.

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Table 1: Differences between the Traditional Islamic Bank and the Lean Islamic Bank

Criteria	Lean Islamic Bank	Traditional Islamic Bank
Organizational Structure	Networked, flat horizontal form	Hierarchical / vertical
Efficiency of Organizational Units	Multidisciplinary	Experience and/or expertise
Information Flow and Decision Making	Decentralized	Centralized
Role of Managers	Leadership; coordination & mediation	Classical; control & supervision
Quality of Staff	Adaptability, responsibility, autonomy	Respectfulness, competency

Source: Compiled by the researchers based on previous literature.

Based on the above, the objectives that Lean Islamic Banks strive to achieve are fundamentally those of lean management, complemented by other lean approach models, in addition to objectives that distinguish banking operations from other industrial and service organizations alike. The most important of these objectives include:

- ✓ **Primary Focus:** Commitment to Sharia compliance while improving efficiency and reducing waste.
- ✓ **Operations Management:** Continuous process improvement using the lean approach.
- ✓ **Operational Efficiency:** Based on institutional agility and value stream analysis.
- ✓ **Cost Management:** Waste reduction at all stages to lower operational costs.
- ✓ **Banking Services Delivery:** Customer-oriented banking services aimed at maximizing customer value with the highest possible efficiency.
- ✓ **Product Innovation:** Developing products and services based on continuous improvement and agile analysis.

Consequently, the transition toward the modern and advanced Lean Islamic Banking model with its transparency and holistic vision has become a strategic necessity for any bank seeking to gain a competitive edge in the banking market. This is to keep pace with the latest developments and rapid changes in modern technologies such as digitization, artificial intelligence, and big data analytics. Achieving this is only possible through eliminating heavy management practices, bureaucratic challenges, organizational and procedural obstacles, among others, thus enabling the bank to absorb accelerating banking changes and enhance its role in achieving sustainable development with a comprehensive vision and high operational efficiency for the bank, employees, and customers alike.

3.3. Core Principles of Lean Islamic Banking:

Lean Islamic Banking applies the philosophy of Lean Production and the Toyota Production System (TPS) to ensure Sharia-compliant efficiency and value creation its principles are as followed:

- I. Defining Value from the Customer's Perspective: Banking processes must reflect client expectations (El-Sayed, 2020, p. 12).

- II. Analyzing the Value Stream and Eliminating Waste: Identify and remove inefficiencies and non-compliance (Womack & Jones, 1996, p. 25).
- III. Ensuring a Smooth Flow of Operations: Remove non-value-adding activities to maximize efficiency.
- IV. Pulling Value According to Customer Needs: Allow clients to “pull” services flexibly through lean, Sharia-compliant processes.
- V. Pursuing Perfection through Continuous Improvement: Continuously eliminate waste to balance cost, quality, and compliance (Abdullah, 2020, pp. 42–43).

3.4. *Approaches to Diagnosing Waste in Islamic Banks*

Eliminating waste is central to Lean philosophy; in Islamic banking, diagnosis is the foundation for improvement. It employs quantitative and qualitative tools to detect inefficiencies and Sharia-related issues. Waste (Muda) is any activity lacking real value (Jainury et al., 2013; El-Ashry, 2021, p. 622; Klein et al., 2021, pp. 286–336; Al-Rubaie et al., 2020, p. 104). It includes resource loss, procedural delays, and non-compliance (Al-Qara Ghuli, 2020).

Main waste types include overproduction, waiting, decision delay, excessive setup, unnecessary processes, errors, and underused talent (Al-Dulaimi & Abdullah, 2018; Melović et al., 2016). Additional forms—Mura (irregularity) and Muri (overburden)—represent hidden inefficiencies from variable demand and overwork (Qara Ghuli, 2020; Jasim, 2016; Albernaz, 2012). Though some waste is unavoidable, systematic lean diagnostics minimize inefficiency without compromising Sharia integrity (Al-Jubouri & Elias, 2021).

4. *Requirements for Implementing the Principles of a Waste-Free Islamic Bank in the Context of the Digital Revolution*

In light of the ongoing digital revolution, banking performance is increasingly evaluated not just through technical or quantitative metrics, but by the institution’s capacity to navigate complex organizational and technological transformations. This reality necessitates a reconsideration of the foundational requirements for implementing modern management models particularly lean thinking within Islamic banks. According to the literature and reinforced by the researcher’s practical experience, these requirements may be systematically classified into three interrelated domains to ensure the effective integration of lean principles amid digital and technological advancements:

4.1. *Organizational and Managerial Requirements*

a) *Top Management Commitment and Active Support*

The successful implementation of lean thinking in Islamic banking fundamentally relies on strong top management commitment. As emphasized by Al-Shahri and Oqaili (2023), this commitment must be reflected in the strategic allocation of resources material, human, and financial along with a readiness to move away from bureaucratic routines toward a modern lean philosophy. Effective leadership also requires administrative reform through democratic governance, the promotion of creativity, and active encouragement of staff involvement in quality enhancement and continuous improvement initiatives.

b) Strengthening Collaboration between Management and Employees

Establishing a collaborative, trust-based climate is essential for successful lean implementation, requiring the integration of key success factors and participatory decision-making into the bank's institutional culture. As Nicolas and Thomas (p. 92) note, lean adoption depends on shifting from routine individual practices to teamwork, shared responsibility, and employee engagement in waste identification ultimately boosting efficiency and service quality across banking operations.

4.2. Human and Cognitive Requirements

a) Comprehensive and Quality Training

The success of lean implementation in Islamic banking hinges on the alignment between knowledge acquisition and its practical application. This requires structured, outcome-driven training at all levels, delivered by qualified personnel to enhance performance and reduce waste.

As Al-Mutairi (2019) emphasizes, training should focus on diversifying content, empowering staff with modern lean tools, leveraging internal expertise, and linking continuous learning to performance evaluation grounded in operational realities.

b) Cultural Transformation Within the Bank

Achieving a waste-free Islamic banking model demands a deep-rooted cultural transformation, particularly in managerial mindsets and attitudes toward resource utilization. As Ben Ouareth and Djabba (2021) emphasize, this shift requires consistent messaging across all organizational levels to instill zero tolerance for material, time-related, or administrative waste. Embedding lean thinking into the institution's identity promotes a shared culture of efficiency, proactivity, and accountability.

4.3. Digital and Technological Requirements

a) Keeping Up with Digital Challenges and Enhancing Information Systems Security

Digital transformation bridges modern innovation and Lean implementation. Workflow-automation systems streamline approvals, maintain continuity, and improve information security, directly reducing cost and inefficiency (Al-Kandari, Al-Jumhudi & Al-Sheikh, 2024, p. 1036).

b) Integration Between Technology and Sharia Compliance

This Merging technology with Sharia principles minimizes procedural and time-related waste. Tools such as electronic signatures on Islamic contracts close approval gaps, enhance reliability, and ensure real-time compliance.

Effective Lean implementation requires flexible structures emphasizing talent development, continuous learning, and knowledge sharing. Leadership should pursue gradual, culturally aligned transformation over rapid adoption.

5. Empirical Study: Survey Implementation and Statistical Analysis

As part of the empirical phase of this research, a field study was conducted within Al Salam Bank Algeria, focusing on the evaluation of Islamic banking service quality from the perspective of internal stakeholders.

5.1. Overview of Al Salam Bank Algeria

Al Salam Bank Algeria is a subsidiary of Al Salam Bank Bahrain, a leading Islamic banking institution in the region.

It was established under the principles of Sharia-compliant finance, where the bank officially launched its operations in Algeria in 2008. Since then, it has steadily expanded its presence across the country, currently operating 26 branches in various provinces.

With a strong commitment to innovation, customer satisfaction, and ethical banking practices, Al Salam Bank Algeria has positioned itself as a key player in the Islamic finance sector.

The study's objective was to collect primary data that reflects the perceptions and insights of individuals directly involved in service delivery and management.

To ensure a comprehensive and representative understanding, the survey was distributed to a targeted sample consisting of:

- 26 branch directors,
- 26 deputy branch directors,
- 30 department heads,
- As well as selected staff members from various central departments and directorates.

The total population surveyed represents a cross-sectional sample of the bank's internal decision-makers and operational leaders, allowing the study to capture both strategic and operational perspectives on service quality within an Islamic banking context.

The survey was initially designed in Arabic the bank's official language, to ensure clarity and ease of understanding for all participants.

Following the data collection phase, the responses were translated to English to facilitate statistical processing using the Statistical Package for the Social Sciences (SPSS).

This phase provided the necessary empirical foundation for evaluating the perceived quality of services offered by Al Salam Bank Algeria, as well as identifying areas of strength and opportunities for improvement within the bank's service delivery processes.

The survey was composed of two main sections:

1. A set of general questions, designed to gather demographic and contextual information about the respondents (such as job role, seniority, and familiarity with digital banking tools).
2. A structured section developed in line with the requirements and dimensions identified in the theoretical framework. Specifically, the survey was built upon the key requirements for implementing the principles of a waste-free Islamic bank in the context of the digital revolution.

These requirements include:

- Organizational and Managerial Requirements
- Human and Cognitive Requirements
- Digital and Technological Requirements

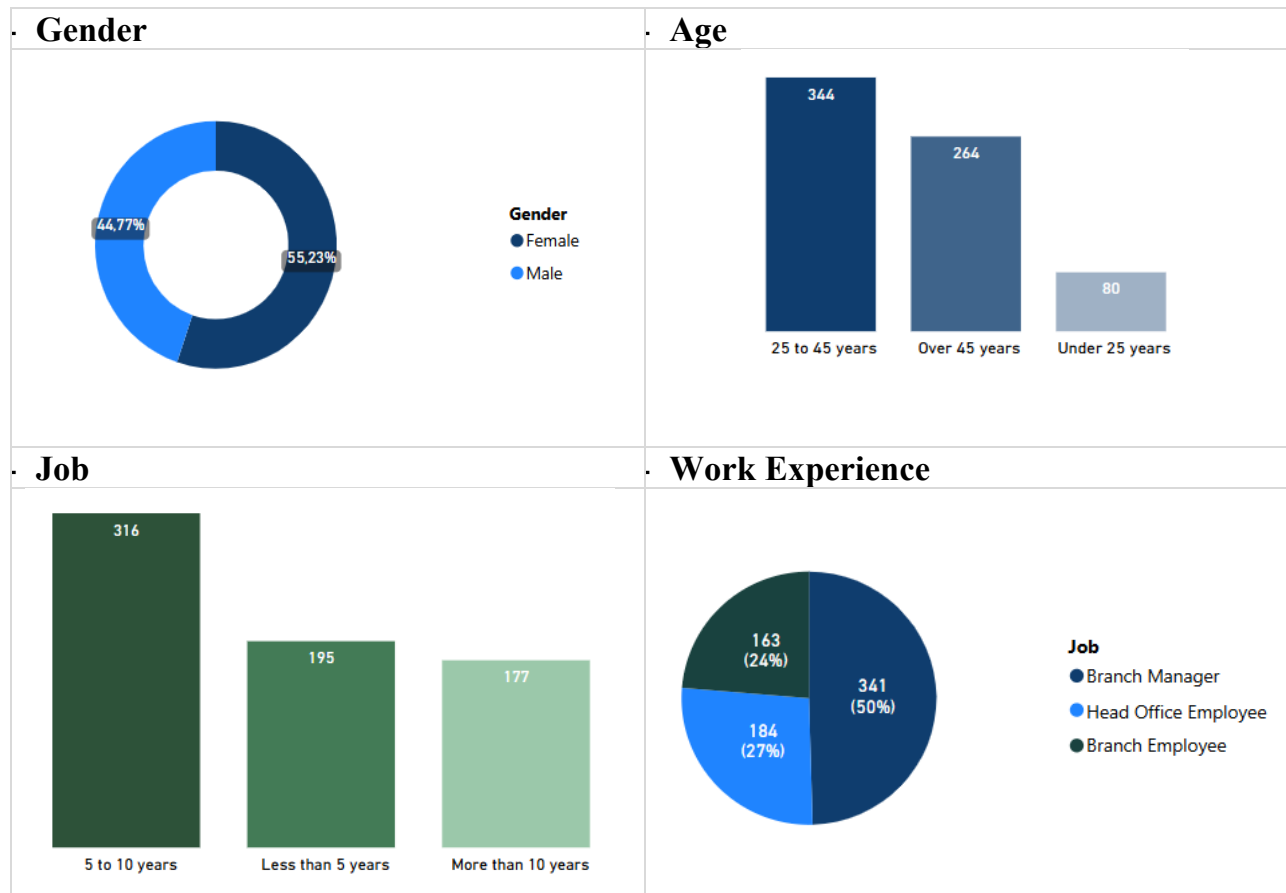
Each item in the second section was designed to reflect one or more of these requirements, allowing the research to measure both awareness and implementation readiness across the bank's structure.

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5.2. Dataset Overview

Key statistics from the survey dataset collected from Al Salam Bank Algeria employees.

Table 2: Dataset statistics



Source: Compiled by the researchers using Microsoft Power BI Desktop

5.3. Statistical Analysis and Results: Organizational and Managerial Requirements

The table below presents the statistical results for the first group using the SPSS 30.0.0.0(172)

Table 3: Organizational and Managerial Requirements Results

Indicator	Value
Number of Individuals (N)	688
Number of Variables	15
Cronbach's Alpha Coefficient	0.938
Standardized Cronbach's Alpha	0.939
Average Inter-Item Correlation	0.504
Average Correlation Between Variables	0.504
Average Variance Between Variables	1.049
Average Covariance Between Variables	0.528

Source: Compiled by the researchers using SPSS 30.0.0.0(172)

The statistical analysis results of the Organizational and Managerial Requirements scale, which consists of 15 variables and was applied to a sample of 688 employees; indicate that the scale possesses a very high degree of internal consistency.

The Cronbach's Alpha coefficient was calculated at 0.938, reflecting excellent reliability.

Furthermore, the standardized Cronbach's Alpha reached 0.939, reinforcing the credibility of the results.

The average inter-item correlation was 0.504, indicating moderate to strong positive correlations between the items, without complete redundancy. This suggests a healthy diversity among items within the same conceptual dimension.

The average variance between items was 1.049, reflecting an acceptable level of variation in participants' responses, without indicating excessive dispersion. Meanwhile, the average covariance was 0.528, suggesting a good degree of partial independence among the items, meaning they are neither repetitive nor unnecessary.

Overall, these indicators support the validity of the scale for use in this study and confirm that it accurately and consistently measures the dimension of managerial culture within the bank under investigation.

a) Interpretation from the Perspective of Waste in Islamic Banks

The Relationship between Organizational and Managerial Requirements and Sharia-Compliance-Induced Waste

In Islamic banking, one of the key challenges in implementing Lean Banking principles lies in the complex regulatory procedures associated with compliance to Sharia law. These include:

- The necessity of having contracts reviewed and approved by Sharia supervisory boards,
- The requirement for repeated audits to ensure conformity with Islamic legal principles,
- The slowing down of certain administrative processes due to the need to align financial contracts with Islamic jurisprudence.

A strong managerial culture can play a direct role in reducing such sources of waste, by fostering:

- Active management support for new initiatives,
- Encouragement of innovative ideas,
- Participation in decision-making,
- Openness to change,
- Clear goals and guidance,
- Constructive performance monitoring,
- Reinforcement of loyalty and institutional commitment.

The internal consistency analysis of the managerial culture scale at Al Salam Bank Algeria revealed a Cronbach's Alpha coefficient of 0.938, indicating a very high degree of alignment among variables. This suggests a strong convergence in employee perceptions regarding the institution's administrative practices.

These findings can be interpreted, within the context of Islamic banking, to imply that a positive managerial culture contributes significantly to reducing waste stemming from Sharia-compliant procedures. The greater the managerial support, openness to change, and encouragement of initiative, the more flexible and efficient the bank becomes in managing Sharia requirements, thus minimizing delays and institutional complexity.

Therefore, managerial culture stands as a pivotal factor in enhancing service quality and optimizing processing times, without compromising the integrity of Sharia compliance.

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b) Analysis of the Impact of Each Variable

Table 4: Analysis of the Impact of Each Variable Organizational and Managerial Requirements

Variable	Observations
Management Support	Influences decision-making participation, work environment motivation, and clarity of guidance.
Encouragement of Ideas	Acts as the primary driver of creativity; has a significant impact on both recognition and collaboration.
Decision-Making Participation	Strongly associated with loyalty and task fairness; positively affects the sense of belonging.
Openness to Change	Helps stimulate a culture of innovation, but its effectiveness is dependent on management support.
Clarity of Guidance	Tied to recognition and belonging; considered a central organizational element.
Availability of Resources	Does not directly stimulate, but enhances leadership effectiveness and employee recognition.
Performance Monitoring	Related to work quality, though its impact tends to be indirect.
Recognition	Influenced by idea encouragement and freedom of expression; significantly increases employee loyalty.
Internal Collaboration	Affected by the presence of innovative ideas; reinforces loyalty and task fairness.
Freedom of Expression	Influences recognition, innovation, and belonging.
Conflict Resolution	Impacted by management support, collaboration, and fairness.
Innovation Culture	Influenced by idea encouragement, freedom of expression, and openness to change.
Task Fairness	Reflects management balance, but is not a direct driver of motivation.
Work Environment Motivation	Emerges as a result of management support and recognition.
Loyalty	Influenced by all the above factors; serves as a comprehensive reflection of managerial effectiveness.

Source: Compiled by the researchers based on results

5.4. Statistical Analysis and Results: Human and Cognitive Requirements

The table below presents the statistical results for the second group using the SPSS

Table 5: Human and Cognitive Requirements Results

Indicator	Value
Number of Individuals (N)	688
Number of Variables	6
Cronbach's Alpha Coefficient	0.888
Standardized Cronbach's Alpha	0.889
Average Correlation Between Variables	0.571
Average Variance Between Variables	1.082
Average Covariance Between Variables	0.615

Source: Compiled by the researchers using SPSS 30.0.0.0(172)

This group represents the "Skill Development" dimension, which comprises six core elements: training opportunities, training impact, knowledge sharing, growth opportunities, talent utilization, and learning from mistakes.

The analysis results indicated that the Cronbach's Alpha coefficient reached 0.888, reflecting a high level of internal consistency among the items in this dimension, and thus, a very good reliability of the measurement tool used.

The standardized Cronbach's Alpha was also 0.889, which further confirms the stability of the analytical results.

The average inter-variables correlation was 0.571, indicating a moderate to high correlation, suggesting that the items measure the same underlying concept from different angles.

Meanwhile, the average variance was approximately 1.082, which reflects an appropriate level of variation in participant responses.

Additionally, the average covariance was 0.615, indicating a good balance in the relationships between items without any evident redundancy.

a) Pairwise Relationships (Bivariate Correlations)

Through the correlation matrix, we observe the following relationships:

Table 6: Bivariate Correlations - Human and Cognitive Requirements Results

Variables	Correlation Coefficient	Interpretation
Training Opportunities & Training Impact	0.561	A moderately strong correlation indicating that the availability of training opportunities is associated with improved employee performance.
Training Opportunities & Learning from Mistakes	0.567	The more training opportunities available, the more employees become aware of the importance of learning from mistakes instead of repeating them.
Training Impact & Growth Opportunities	0.635	Indicates that effective training boosts professional ambition and encourages career development.
Knowledge Sharing & Talent Utilization	0.718	The strongest correlation observed, suggesting that a culture of knowledge sharing leads to actual and effective utilization of employee capabilities.
Growth Opportunities & Learning from Mistakes	0.636	Employees who perceive real opportunities for growth are more likely to learn from mistakes rather than fear them.
Talent Utilization & Learning from Mistakes	0.619	Proper utilization of talent naturally contributes to process improvement and a reduction in errors.

Source: Compiled by the researchers using SPSS 30.0.0.0(172)

Accordingly, it can be concluded that these requirements effectively measure the bank's commitment to developing employee skills, through the provision of training opportunities, facilitation of knowledge sharing, and focus on professional growth and talent investment. This

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aspect plays a vital role in reducing waste and in the implementation of quality principles within Islamic banking institutions.

b) Interpretation of Skill Development in Relation to Sharia Compliance and Waste Reduction in Islamic Banks

Sharia-compliant contracts in Islamic banks are among the most sensitive and complex components of operations. They demand a high degree of accuracy and adherence, placing an obligation on institutions to continually train and equip their employees with the necessary knowledge to ensure proper Sharia compliance and execution.

A lack of adequate training results in poor understanding of Sharia procedures, which negatively affects the precision of contract implementation and leads to repeated Sharia violations, ultimately causing time, administrative, and operational waste. Similarly, inefficient use of human capital within the organization often results in task duplication or misallocation of responsibilities.

Moreover, the absence of a learning-from-mistakes culture prevents employees from correcting past practices or enhancing performance, which contributes to the recurrence of both Sharia and administrative violations. This undermines the clients' confidence in the institution's commitment to Sharia principles, leading to reputational and compliance-related waste.

Thus, strengthening the Skill Development dimension does not merely improve internal performance; it serves as a critical prerequisite for reducing waste stemming from weak Sharia compliance. It is therefore essential to ensure the sustainability of a waste-free banking model that aligns with the distinctive principles of Islamic finance.

5.5. Statistical Analysis and Results: Digital and Technological Requirements

The following table presents the statistical results for the third group, which addresses the dimension of "Digital Transformation and Sharia Compliance," based on the analysis conducted using the SPSS software.

Table 7: Digital and Technological Requirements Results

Indicator	Value
Number of Individuals (N)	688
Number of Variables	11
Cronbach's Alpha Coefficient	0.874
Standardized Cronbach's Alpha	0.875
Average Correlation Between Variables	0.390
Average Variance Between Variables	1.039
Average Covariance Between Variables	0.401

Source: Compiled by the researchers using SPSS 30.0.0.0(172)

This group represents the dimension related to Digital Transformation and the Bank's Compliance with Sharia Guidelines, and includes 11 key variables: digital systems, technical support, data security, paper reduction, service improvement, integration with Shariah, reduction of Shariah-related errors, profit segregation, trust enhancement, contract signing, and alignment between quality and Sharia compliance.

The analysis revealed that the Cronbach's Alpha coefficient reached 0.874, indicating a very good level of internal consistency among the items, which reflects a high reliability of the measurement tool. The standardized Alpha coefficient was 0.875, very close to the previous value, which suggests the stability of the results and that they are not influenced by differences in measurement scales.

The average inter-item correlation was 0.390, representing a moderate correlation showing that the items are related yet reflect distinct aspects of digital transformation, highlighting the richness and multidimensionality of the concept.

Additionally, the average variance across variables was 1.039, indicating noticeable diversity in respondents' views regarding the level of digital transformation and the bank's compliance with Sharia standards.

The average covariance was 0.401, suggesting a moderate relationship among the variables without significant overlap or redundancy in item formulation. This serves as a strong indicator of the quality and soundness of the scale's construction.

Table 8: Intercorrelations between Variables - Digital and Technological Requirements

Interpretation	Correlation Coefficient (r)	Variable 1	Variable 2
Improving digital systems accelerates the signing of Shariah-compliant contracts, thus reducing time waste.	0.665	Digital Systems	Contract Signing
The use of technology reduces the freezing or delay of profit distribution caused by slow compliance.	0.546	Digital Systems	Profit Segregation
Relying on digital tools facilitates compliance with the requirements of Sharia contracts.	0.594	Paper Reduction	Sharia Integration
The more technical support is available, the less reliance there is on paper-based processes, enhancing efficiency.	0.609	Technical Support	Paper Reduction
There is a clear link between avoiding profit freezing and the alignment of quality with Sharia compliance.	0.625	Profit Segregation	Sharia-Quality Alignment
Accelerating contract signing enhances customer trust in the Sharia-compliance of banking operations.	0.622	Contract Signing	Trust Enhancement

Source: Compiled by the researchers using SPSS 30.0.0.0(172)

a) Interpretation of Digital Transformation in Relation to Sharia Compliance in Reducing Waste in Islamic Banking

The results of this group highlight the importance of digital transformation integrated with Sharia compliance in reducing various forms of waste within Islamic banks. The data clearly show that enhancing digital systems, ensuring technical support, and reducing paperwork are all strongly correlated with faster contract execution, avoiding profit segregation, and enhancing trust in the quality of Sharia-compliant services.

Accordingly:

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- Time-related waste is reduced when technology contributes to accelerating Sharia-related processes (such as contract signing).
- Operational waste decreases when procedures are automated, secure, and Sharia-compliant, eliminating redundancy and manual steps.
- Reputational and institutional waste is avoided through the reinforcement of customer trust in the bank's commitment to Sharia principles.

6. Results and Discussion

The findings of this study reveal that waste in Islamic banks extends beyond financial or time-based inefficiencies, manifesting primarily in what can be described as “Sharia waste” the deviation from or failure to fully implement contracts and financial transactions in accordance with Islamic legal principles. This dimension of waste is what fundamentally distinguishes Islamic banks from their conventional counterparts.

Al Salam Bank Algeria serves as a compelling case for exploring this phenomenon, given its reliance on Islamic financial instruments that require high standards of precision, compliance, and Sharia governance.

Through the three key pillars examined in this study, we can understand the sources of waste based on the principles of Lean Banking, which aims to eliminate all processes and elements that do not add real value to the client or hinder operational flow.

- Administrative Culture:** The results indicate that limited employee involvement in decision-making and a lack of encouragement for innovation create resistance to change and managerial stagnation, especially when applying complex Sharia standards. This form of inefficiency can be classified as organizational waste, where critical decisions such as adopting a Murabaha contract or an Istisnaa structure are made without ensuring that the administrative framework is prepared to handle their Sharia-specific requirements.
- Skills Development:** The analysis reveals that the absence of continuous training programs and weak knowledge exchange related to Islamic financial jurisprudence often result in repeated errors in contract documentation and execution. These mistakes not only compromise the legitimacy of transactions but also erode customer trust and expose the bank to Sharia non-compliance risks. This reflects both knowledge-based and operational waste.
- Digital Transformation and Sharia Compliance:** Although the study recorded moderate to strong acceptance levels regarding the effectiveness of digital systems, some indicators highlighted a disconnect between technology and Sharia adherence, particularly concerning reducing contract-related errors and ensuring timely contract execution. These are critical touchpoints in Islamic banking, where any delay or procedural error in executing a Sharia-compliant contract before the transaction takes place can render it invalid. The lack of robust Sharia-Integrated digital systems represents a core value waste within the Islamic financial context.

Given these insights, the implementation of Lean Banking principles within Islamic banks particularly Al Salam Bank must incorporate an additional dimension absent in conventional banking: full Sharia compliance, which requires:

- A flexible administrative structure that supports continuous improvement,
- Ongoing skills development in Islamic financial jurisprudence,
- Technological integration that ensures precise timing and execution of Sharia contracts.

In summary, waste in Islamic banks is not confined to bureaucratic inefficiencies or duplicated tasks. It extends to Sharia-related trust waste, which is arguably the most critical, given its implications for the institution's reputation, customer loyalty, and the legitimacy of its financial operations.

7. Conclusion

This study uncovers the fact that waste in Islamic banks is not limited to financial or operational inefficiencies, but includes a distinct form which is vital and termed "Sharia waste" deviations from proper implementation of Islamic financial contracts. This sets Islamic banks apart from conventional ones and underscores the urgency of adopting a values-based operational model.

Al Salam Bank Algeria serves as an imperative case, highlighting the challenges and opportunities of integrating Lean Banking with Sharia compliance. Empirical findings identified three key areas of inefficiency: an administrative culture resistant to innovation and lacking participatory decision-making, weak training in Islamic jurisprudence leading to frequent contractual errors, and a digital transformation effort that, while accepted, remains insufficiently integrated with Sharia oversight thereby generating value waste.

These insights affirm that Lean Banking in Islamic institutions like Al Salam Bank must go beyond standard efficiency goals. It demands a strategic alignment between three core elements; flexible administrative structures that support continuous improvement, robust staff development in Islamic finance, and Sharia-compliant digital infrastructures to ensure precision and timeliness in service delivery.

The paper further highlights the broader potential of Lean Thinking when incorporated in Islamic banking, particularly through the Digital Revolution.

Tools such as AI, automation, and advanced analytics can play a key role in waste elimination, service quality enhancement, and reinforcing trust in Islamic financial operations. Al Salam Bank Algeria exemplifies institutional readiness, evidenced by initiatives like digital banking, RPA, Six Sigma, branch optimization, youth incubators, and ISO 9001-based quality systems positioning it as a leader in reform and innovation.

Ultimately, this study contributes to the evolving model of a responsive, agile, and human-centered Islamic banking system one that bridges operational excellence with religious values. It calls for Lean principles and digital transformation to move beyond slogans into tangible practices that generate real value for all stakeholders, charting a long-term path where performance and ethics are inseparable.

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