

UDC: 336.71:658.7

DOI: <https://doi.org/10.30546/2521-6341.2025.02.2012>

APPLYING SUPPLY CHAIN MANAGEMENT PRINCIPLES IN THE BANKING SECTOR: A CONCEPTUAL FRAMEWORK FOR AZERBAIJAN

Ahmet YILDIRIM¹, Intigam BASHIROV², Rufat MAMMADOV^{3*}

¹Suleyman Demirel University, Human Resources Management, Isparta, Turkey

²Baku Engineering University, Business Administration Department, Baku, Azerbaijan

³Baku Engineering University, Business Administration Department, Baku, Azerbaijan

ARTICLE INFO	ABSTRACT
<p>Article history: Received:2025-06-28 Received in revised form:2025-07-19 Accepted:2025-10-13 Available online:2025-12-25</p> <hr/> <p>Keywords: Supply chain management; Service supply chain; Banking; Azerbaijan; Emerging markets; Digital transformation; Mixed methods; JEL classification: G21, L23, M11</p>	<p><i>This study analyzes the adoption and performance consequences of supply chain management (SCM) strategies in the Azerbaijani banking sector, a post-Soviet emergent market undergoing fast digital transformation. Using a sequential explanatory mixed-methods design, quantitative data were collected from 178 managers in 18 commercial banks and analysed through confirmatory factor analysis and structural equation modelling, followed by interviews with 17 senior executives to contextualise the results. The findings show a moderate-to-high level of SCM adoption, with information sharing and process integration emerging as the strongest dimensions, while risk and revenue-sharing mechanisms remain least developed. SCM practices significantly enhance operational efficiency and service quality, which fully mediate their impact on overall bank performance, explaining 68% of its variance. Top management commitment further strengthens these effects. The study provides the first empirical evidence of service supply chain theory in the South Caucasus banking context, highlighting the role of regulatory-driven digitalisation and fintech partnerships as catalysts for SCM maturity.</i></p>

1. Introduction

SCM has long been associated primarily with manufacturing and the movement of physical goods. More recent research, however, emphasises that service organisations also rely on supply chains that coordinate information, processes and relationships across multiple internal and external actors (Ellram et al., 2004; Baltacioglu et al., 2007). In banking, these chains cover product development, channel and customer management, risk assessment, transaction processing, IT support, cooperation with outside providers, regulatory compliance and after-sales services. The effectiveness of these interlinked processes shapes cost structures, response times, service quality and ultimately customer loyalty and profitability (de Sousa Jabbour et al., 2019; Marodin et al., 2017).

*Corresponding author.

E-mail addresses: rmammadov@beu.edu.az (Rufat Mammadov).

2221-6341/© 2025 The Author(s). Published by Baku Engineering University.

This is an open access article under the CC BY 4.0 license (<http://creativecommons.org/licenses/by/4.0/>).

Although service supply chain management (SSCM) has attracted increasing attention, empirical work remains concentrated in a limited set of economies, such as the United States, the United Kingdom, Germany and Australia, and a few large emerging markets, including China, India, Malaysia and Turkey (Huo et al., 2015; Liu et al., 2018). By contrast, post-Soviet transition economies in the South Caucasus, and particularly Azerbaijan, have received very limited coverage, despite substantial reforms and rapid digital transformation since the mid-2010s. Between 2015 and 2024, Azerbaijan's banking sector underwent consolidation (the number of banks declined from 45 to 28), expanded outsourcing of IT and customer services, and intensified collaboration with fintechs, payment providers and logistics partners, underpinned by ISO 9001 and ISO/IEC 27001 requirements (CBAR, 2023; FIMSA, 2022).

At the same time, the COVID-19 pandemic and the diffusion of digital public and financial services—such as the “myGov” ecosystem, open banking initiatives and pilot blockchain applications—exposed banks to heightened expectations regarding speed, security and convenience (World Bank, 2022). To meet these expectations, banks must integrate their internal processes with those of external partners in a manner that mirrors modern supply chain thinking. SCM therefore offers a useful lens for understanding how banks orchestrate networks of partners to deliver reliable, efficient and high-quality services. Yet little is known about which SCM practices are adopted, how mature they are, what drivers and obstacles exist and how SCM influences performance in the Azerbaijani banking context.

To address these gaps, this study focuses on four research questions:

1. What is the level of SCM adoption in Azerbaijani commercial banks?
2. Which SCM dimensions—supplier relationships, information sharing, process integration, risk management and performance measurement—are most and least developed?
3. What organisational and institutional factors drive or hinder SCM adoption?
4. How does SCM maturity affect operational efficiency, service quality and overall bank performance?

This paper contributes to the literature in three ways. First, it extends SSCM research to an underexplored post-Soviet emerging economy, thereby reducing the geographical bias of existing work. Second, it adapts the SCOR framework and the Service Profit Chain to a heavily regulated, digitally oriented banking environment and tests their relevance empirically. Third, it provides actionable insights for managers and regulators in Azerbaijan and similar economies seeking to build SCM capabilities for competitive advantage.

The paper is structured as follows. Section 2 reviews the literature on SCM in services and banking. Section 3 develops the conceptual framework and hypotheses. Section 4 explains the mixed-methods design. Section 5 presents the empirical results. Section 6 discusses theoretical and practical implications. Section 7 concludes with recommendations, limitations and directions for future research.

2. LITERATURE REVIEW

2.1. Supply Chain Management in Service Industries

SCM originated in manufacturing and focused on coordinating material flows across suppliers, manufacturers and distributors. Over time, scholars have argued that the underlying logic of

integration and coordination applies equally to service organisations, where key flows consist of information, tasks and customer interactions rather than physical goods (Ellram et al., 2004; van Looy et al., 2011). Customer involvement in production, intangible outputs, and a high degree of simultaneity between production and consumption are characteristics of service supply chains (Sampson & Froehle, 2006; Baltacioglu et al., 2007).

Recent work identifies several core SSCM dimensions that underpin performance improvements:

- **Supplier relationship management**, involving long-term partnerships, joint planning and problem-solving;
- **Information sharing and technology alignment**, which provide transparency and real-time coordination;
- **Process integration**, referring to harmonisation of key workflows and interfaces across organisational boundaries;
- **Risk and revenue sharing**, where partners jointly manage uncertainty and incentives;
- **Performance measurement and continuous improvement**, which generate feedback for learning and adaptation (Giannakis & Louis, 2011; Zhang et al., 2016; Liu et al., 2018).

Empirical studies in sectors such as healthcare, tourism, transport and retail suggest that these practices enhance service quality, responsiveness, cost efficiency and financial results (Boon-itt & Pongpanarat, 2011; de Sousa Jabbour et al., 2019). However, the extent to which such findings generalise to financial services and different institutional environments remains an open question.

2.2. SCM in Banking and Financial Services

Banks represent a complex form of service supply chain because they must coordinate internal functions and a differentiated portfolio of external partners, including software vendors, payment networks (e.g., Visa, Mastercard), credit bureaus, call centres, logistics operators and fintech companies (de Sousa Jabbour et al., 2019; Petersen et al., 2014). SCM practices in banking typically address loan origination, payments, card issuance, compliance screening and customer support, among others.

Evidence from advanced and large emerging economies indicates that SCM-inspired integration and information sharing can significantly improve banking operations. Integrated lending processes have been associated with reductions of 35–60% in loan processing times and improved on-time delivery of services (Wang et al., 2015; Marodin et al., 2017). Collaborative risk-management and data exchange with external partners can help reduce fraud and credit losses (Govindan et al., 2015). Multichannel integration and seamless customer journeys are linked to higher satisfaction and loyalty (Akter et al., 2018).

Furthermore, banks adopting SCM practices tend to achieve better financial outcomes, including higher ROA and more favourable cost-to-income ratios (Huo et al., 2015; Liu et al., 2018). Yet most studies focus on large, mature systems, leaving unresolved how SCM functions in smaller, regulation-driven emerging markets with legacy infrastructure and relatively concentrated banking sectors.

2.3. Theoretical Foundations

Several theoretical lenses assist in linking SCM adoption to performance in banking. The **Resource-Based View (RBV)** argues that firms derive sustained competitive advantage from resources and capabilities that are valuable, rare, inimitable and organised (Barney, 1991). Well-designed SCM practices—such as integrated processes, strong supplier relationships and advanced information systems—can be seen as such capabilities, especially when deeply embedded in organisational routines. The **dynamic capabilities** perspective further stresses the ability to reconfigure these resources in response to environmental change (Teece, 2018).

The **SCOR (Supply Chain Operations Reference) model** offers a structured overview of supply chain activities, traditionally in manufacturing, by grouping them into Plan, Source, Deliver, Return and Enable processes. Recent adaptations extend this logic to service environments, including financial services, by redefining these processes around information flows, customer interactions and regulatory tasks (APICS, 2017; Petersen et al., 2014).

Employee satisfaction, customer satisfaction, loyalty, and profitability are all impacted by internal service quality and process efficiency, as explained by **the Service Profit Chain (SPC)** (Heskett et al., 1994). In banking, SCM can be understood as a set of practices that improve internal process reliability and integration, thereby reinforcing the links described by the SPC (de Sousa Jabbour et al., 2019).

2.4. SCM in Emerging and Transition Economies

Research on SCM in emerging markets highlights the importance of institutional and organisational factors. Regulatory pressure, competitive intensity, IT readiness and organisational culture have been identified as key antecedents of SCM adoption in Turkey, Malaysia, India, Pakistan and China (Huo et al., 2015; Liu et al., 2018; Govindan et al., 2015). Frequent obstacles include resistance to change, skills gaps, outdated technology platforms and weak contractual enforcement.

In the South Caucasus, and particularly in Azerbaijan, similar drivers and barriers are likely to be present, but they have not been systematically examined. Azerbaijan combines crisis-driven banking sector consolidation, mandatory digitalisation and a rapidly expanding ecosystem of non-bank financial service providers. This combination generates strong incentives to develop SCM practices, but also significant challenges associated with legacy systems and institutional constraints.

2.5. Research Gap

Existing studies show that SCM practices can improve performance in banking sectors of advanced and large emerging economies. However, little is known about how these practices are adopted and perform in smaller post-Soviet transition economies such as Azerbaijan. Moreover, many previous studies are purely quantitative or qualitative, whereas a mixed-methods approach can capture both the magnitude of effects and the underlying mechanisms.

This study addresses these gaps by applying a sequential explanatory mixed-methods design to examine SCM adoption in Azerbaijani banks. It quantifies adoption levels and performance effects using survey data, and complements these results with qualitative evidence from executive interviews to understand how digitalisation, regulation and organisational factors shape SCM in this setting.

3. CONCEPTUAL FRAMEWORK AND HYPOTHESES

Drawing on the literature, this study proposes a conceptual framework that links SCM adoption to operational efficiency, service quality and bank performance, with top management commitment acting as a moderator. The framework integrates insights from RBV and dynamic capabilities, the SCOR model and the Service Profit Chain.

From an RBV perspective, SCM practices constitute bundles of organisational routines and relational capabilities that are difficult to imitate (Barney, 1991; Teece, 2018). These practices are grouped into five dimensions: supplier relationship management, information sharing, process integration, risk management and performance measurement. In line with SCOR, these dimensions support the planning, sourcing and delivery of services in banking (APICS, 2017; Petersen et al., 2014). The SPC suggests that improved internal efficiency and service quality mediate the effect of SCM on performance (Heskett et al., 1994).

The framework assumes that institutional factors such as IT infrastructure readiness and regulatory pressure act as antecedents of SCM adoption, while organisational factors such as legacy systems and resistance to change can constrain implementation. Once adopted, SCM practices are expected to enhance operational efficiency (e.g., shorter processing times, fewer errors, lower costs) and service quality (e.g., reliability, responsiveness, customer satisfaction). These two constructs, in turn, should improve overall bank performance, measured by financial indicators and customer-related outcomes.

Top management commitment is hypothesised to strengthen the relationship between SCM adoption and outcomes by providing resources, signalling strategic priority and encouraging cross-functional collaboration (Govindan et al., 2015; Zhang et al., 2016). In emerging markets, where formal processes may be less institutionalised, this moderating role can be particularly pronounced.

3.1. Hypotheses

Based on this reasoning and prior evidence, the following hypotheses are proposed:

H1: SCM adoption in Azerbaijani banks has a positive direct effect on operational efficiency.

H2: SCM adoption in Azerbaijani banks has a positive direct effect on service quality.

H3: Operational efficiency positively mediates the relationship between SCM adoption and bank performance.

H4: Service quality positively mediates the relationship between SCM adoption and bank performance.

H5: Top management commitment positively moderates the relationship between SCM adoption and both operational efficiency and service quality.

These hypotheses are tested using structural equation modelling based on survey data from managers in Azerbaijani banks.

4. Methodology

4.1. Research Design

The study adopts a **sequential explanatory mixed-methods** design (Creswell & Plano Clark, 2018). In the first, quantitative phase, a structured survey is used to measure SCM adoption,

operational efficiency, service quality, bank performance and key antecedent variables. In the second, qualitative phase, semi-structured interviews with executives from the same banks are conducted to interpret and contextualise the quantitative results.

4.2. Population and Sampling

The population consists of all commercial banks operating in Azerbaijan as of December 2023. According to CBAR (2024), 26 licensed banks were active at that time. A stratified sampling approach was adopted using bank asset size as the criterion, categorising banks as large (assets above AZN 1 billion), medium (AZN 200 million–1 billion) and small (below AZN 200 million).

From these strata, 18 banks were selected, including at least five from each category. Within each bank, the target respondents were senior and middle managers from operations and supply chain-related functions, IT and digital banking, risk and compliance, procurement and vendor management, and customer service or branch management. Each bank was asked to provide 8–12 respondents, yielding an initial pool of 214 managers.

For the qualitative phase, **purposive sampling** was used to select 15–18 executives (C-level and department heads) from the same banks, with attention to variation in perceived SCM maturity.

4.3. Data Collection Instruments

4.3.1. Survey Instrument

The survey instrument was developed by adapting established scales from the SCM and service management literature:

- SCM practices (five dimensions; 25 items) from Boon-itt and Pongpanarat (2011) and Huo et al. (2015);
- Operational efficiency (6 items) from Wang et al. (2015);
- Service quality (8 items) from Akter et al. (2018);
- Bank performance (5 perceptual items focusing on ROA, cost-to-income ratio and customer-related indicators) from Liu et al. (2018);
- Antecedents and moderators (top management commitment, IT infrastructure readiness, regulatory pressure; 12 items) from Govindan et al. (2015) and Zhang et al. (2016).

Items were measured on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The questionnaire was drafted in English, translated into Azerbaijani and back-translated into English following Brislin's (1970) procedure. A pilot test with 30 managers indicated good reliability (Cronbach's alpha between 0.81 and 0.94) and clarity of wording.

4.3.2. Interview Guide

The semi-structured interview guide contained 12 open-ended questions on current SCM-related practices, perceived benefits of integration and collaboration, main implementation challenges, the role of fintech partnerships, the impact of regulatory requirements (e.g., ISO/IEC 27001, open banking) and perceived changes in performance. Probing questions were used to explore issues emerging from the quantitative findings.

4.4. Data Collection Procedure

The survey was administered online via a secure platform between March and May 2024. Bank management were contacted to obtain permission and support. Invitations with the survey link

were sent by email to identified managers, followed by reminders and, where necessary, telephone follow-ups. Participation was voluntary and anonymous.

A total of 178 usable responses were received, corresponding to a response rate of 83.2%. Non-response bias was assessed by comparing early and late respondents on key variables; no significant differences were detected ($t < 1.96$, $p > .05$).

Qualitative data were collected in June–July 2024. Interviews with 17 executives (CEOs, COOs, CIOs, Chief Risk Officers and heads of key departments) were conducted face-to-face or via online platforms, depending on availability. Interviews lasted between 45 and 75 minutes and were recorded with consent. The recordings were transcribed verbatim for analysis.

4.5. Data Analysis

Quantitative data were analysed using SPSS and AMOS. Descriptive statistics and reliability analyses were performed first. A **confirmatory factor analysis (CFA)** assessed the measurement properties of the constructs. Convergent validity was evaluated by factor loadings, composite reliability (CR) and average variance extracted (AVE), while discriminant validity was assessed using the Fornell–Larcker criterion (Fornell & Larcker, 1981).

After confirming the measurement model, **structural equation modelling (SEM)** with maximum likelihood estimation was used to test the hypothesised relationships. Mediation effects were assessed through bootstrapped confidence intervals based on 5,000 resamples. Moderation by top management commitment was examined via interaction terms and the PROCESS macro. Model fit was evaluated using χ^2/df , CFI, TLI, RMSEA and SRMR.

Qualitative data were analysed using NVivo 14 and the thematic analysis approach of Braun and Clarke (2006). Initial codes were generated inductively from the transcripts, then grouped into broader themes that were compared with and used to elaborate the quantitative findings.

4.6. Validity, Reliability and Ethics

Content validity of the survey instrument was reviewed by three SCM scholars and two senior Azerbaijani bank executives. Reliability was confirmed through Cronbach's alpha and composite reliability. Harman's single-factor test and the marker-variable technique suggested that common method bias was not a major concern.

Ethical approval was obtained from the relevant university ethics committee. Participants were informed about the study's purpose, the voluntary nature of participation, the academic use of data and the measures taken to protect anonymity and confidentiality.

5. Findings

5.1. Response Rate and Sample Profile

The survey produced 178 valid responses from managers in 18 commercial banks, representing a substantial share of the Azerbaijani banking sector by number of institutions and total assets. Large banks (assets above AZN 1 billion) accounted for 46.1% of the sample, medium banks for 34.3% and small banks for 19.7%.

Most respondents were middle managers (77.0%), with 23.0% in senior management (C-level or deputy level). Functional areas included operations and supply chain-related activities (30.3%), IT and digital banking (27.0%), risk and compliance (20.8%), procurement and vendor

management (13.5%) and customer service and branches (8.4%). A majority of respondents (61.2%) had more than ten years of professional experience, suggesting strong familiarity with their banks' processes and partnerships.

5.2. Measurement Model

The CFA supported the proposed eight-factor model representing the five SCM dimensions, operational efficiency, service quality and bank performance. All standardised factor loadings were above 0.70 and statistically significant ($p < .001$). CR values ranged from 0.87 to 0.95, and AVE values from 0.58 to 0.76, indicating good convergent validity.

Discriminant validity was confirmed by the Fornell–Larcker criterion, as the square root of AVE for each construct exceeded its correlations with other constructs (Fornell & Larcker, 1981). Overall model fit was satisfactory ($\chi^2/df = 1.84$, CFI = 0.96, TLI = 0.95, RMSEA = 0.049, SRMR = 0.041).

Harman's single-factor test showed that a single factor accounted for 38.2% of the variance, and all correlations with the marker variable remained below 0.12, indicating that common method bias was unlikely to distort the results.

5.3. Descriptive Results on SCM Adoption

Descriptive statistics indicate that SCM adoption in Azerbaijani banks is **moderate to high**, with an aggregate mean of 4.92 (SD = 1.04) on the seven-point scale. Among the five SCM dimensions, **information sharing** scores highest (M = 5.61), reflecting extensive use of digital channels, open-banking APIs and collaboration with fintech partners.

In contrast, **risk management and risk/revenue-sharing arrangements** score lowest (M = 4.31), suggesting that banks are more advanced in sharing information and integrating processes than in formalising balanced mechanisms for joint risk taking and incentive alignment with third-party providers. Supplier relationship management, process integration and performance measurement fall between these extremes.

5.4. Structural Model and Hypothesis Testing

The structural equation model, estimated with 5,000 bootstrap resamples, exhibits acceptable fit ($\chi^2/df = 2.01$, CFI = 0.95, TLI = 0.94, RMSEA = 0.053). All five hypotheses are supported.

- **H1:** SCM adoption has a strong positive effect on operational efficiency ($\beta = 0.68$, SE = 0.06, $t = 11.32$, $p < .001$).
- **H2:** SCM adoption has a strong positive effect on service quality ($\beta = 0.74$, SE = 0.05, $t = 14.81$, $p < .001$).
- **H3:** Operational efficiency positively influences bank performance ($\beta = 0.41$, SE = 0.08, $t = 5.13$, $p < .001$), and the indirect effect of SCM on performance via efficiency is significant ($\beta_{\text{indirect}} = 0.28$, $p < .001$).
- **H4:** Service quality has a significant positive effect on bank performance ($\beta = 0.49$, SE = 0.07, $t = 7.00$, $p < .001$), and the indirect effect of SCM on performance through service quality is also significant ($\beta_{\text{indirect}} = 0.36$, $p < .001$).
- **H5:** The interaction between SCM adoption and top management commitment is positive and significant ($\beta = 0.22$, SE = 0.07, $t = 3.14$, $p = .002$), indicating that managerial support amplifies the effects of SCM on both efficiency and quality.

The model explains 54% of the variance in operational efficiency, 61% in service quality and 68% in bank performance, demonstrating strong explanatory power.

5.5. Qualitative Findings

The thematic analysis of 17 executive interviews produced four overarching themes that enrich the quantitative findings:

1. **Digitalisation as a Structural Enabler.** Executives stressed that mandatory ISO/IEC 27001 certification, open banking regulations and the “myGov” ecosystem accelerated information sharing and process integration with external partners. Many banks portrayed digitalisation as a regulatory necessity that catalysed SCM-like practices.
2. **Fintech Partnerships and New Supplier Configurations.** Collaboration with fintechs, payment service providers and global technology firms has become central to service delivery. Traditional vendor relationships are evolving into more strategic partnerships, although formal risk- and revenue-sharing contracts remain less developed.
3. **Legacy Systems and Cultural Resistance as Barriers.** Several banks rely on legacy core-banking systems that complicate integration and automation. Hierarchical organisational cultures and siloed structures inherited from the Soviet period hinder cross-functional collaboration and process redesign, particularly in smaller and state-influenced banks.
4. **Visible Performance Improvements.** Executives reported that banks with higher SCM maturity achieved noticeable improvements, such as reductions of around 40–45% in loan-processing time and increases of approximately 15–20 percentage points in customer satisfaction scores.

Overall, the qualitative insights corroborate the quantitative model and highlight how regulation, digitalisation and organisational factors interact to shape SCM adoption and outcomes in Azerbaijani banks.

6. DISCUSSION

6.1. Interpretation of Key Findings

The study provides strong evidence that SCM practices, originally developed for manufacturing and logistics, are highly relevant for service-dominant sectors such as banking in a small post-Soviet emerging economy. The strong positive effects of SCM adoption on operational efficiency and service quality, and the full mediation of the SCM–performance relationship through these constructs, are consistent with RBV and the Service Profit Chain (Barney, 1991; Heskett et al., 1994; Teece, 2018).

The relatively high levels of explained variance (54% for efficiency, 61% for service quality and 68% for performance) suggest that SCM practices account for a substantial share of inter-bank performance differences. Compared with findings from more mature markets, the indirect effects observed here appear particularly strong, supporting the idea that introducing integration and collaboration mechanisms in previously fragmented systems yields substantial performance gains (Huo et al., 2015; Liu et al., 2018).

The moderating effect of top management commitment underscores the importance of leadership for successful SCM implementation, especially in contexts where formal processes are less institutionalised. Banks whose senior teams actively champion SCM initiatives, allocate

resources and encourage cross-functional collaboration seem better able to convert SCM adoption into tangible improvements in efficiency, service quality and performance.

6.2. Theoretical Contributions

The study contributes to the SCM and service operations literature in several ways. First, it extends empirical research on SSCM to the South Caucasus, helping to diversify the geographical focus of existing evidence, which has been dominated by Anglo-Saxon and East Asian contexts (Ellram et al., 2004; Baltacioglu et al., 2007).

Second, by adapting and testing a framework that integrates RBV, SCOR and the Service Profit Chain, the study shows that these theoretical perspectives remain applicable in a heavily regulated, digitally transforming banking sector. The findings suggest that SCM practices can be interpreted as dynamic capabilities that help banks reconfigure processes and partnerships in response to regulatory and technological change (Teece, 2018; APICS, 2017).

Third, the observed mediation patterns strengthen the understanding of operational efficiency and service quality as central channels through which SCM affects financial and customer-related outcomes, extending the logic of the service profit chain to a new institutional context.

6.3. Managerial and Policy Implications

For bank executives, the findings underline that SCM should be treated as a **strategic capability**. Investments in integrated information systems, collaborative supplier governance and robust performance measurement can yield substantial efficiency and quality improvements that translate into better financial results.

Particular emphasis should be placed on **formalising risk- and revenue-sharing arrangements** with fintech and IT partners. The relatively low scores on SCM's risk management dimension show that many banks still rely on asymmetrical or ad hoc contractual structures, which may weaken incentives for innovation and joint problem-solving. Developing standardised templates for such arrangements could help institutionalise more balanced partnerships.

For regulators such as CBAR and FIMSA, the study demonstrates that digitalisation and open banking regulations already act as powerful external catalysts for SCM maturity. Future regulatory initiatives could build on this foundation by encouraging clearer frameworks for vendor performance evaluation, data governance and joint risk management.

For banks in neighbouring transition economies such as Georgia, Armenia and selected Central Asian countries, the Azerbaijani case illustrates how sector consolidation, mandatory digitalisation and SCM-based process redesign can support rapid modernisation of banking service supply chains.

6.4. Limitations and Future Research

This study has several limitations. First, it relies primarily on **perceptual measures** of performance, which may be affected by respondent bias. Linking SCM adoption data with objective financial indicators from official sources would provide a stronger test of the hypothesised relationships.

Second, the cross-sectional design limits causal inference. Longitudinal studies following banks over time—for instance, before and after the full implementation of open banking or expansions of the “myGov” ecosystem—would provide more robust evidence on the dynamics of SCM adoption and performance.

Third, while the sample covers a large proportion of the Azerbaijani banking sector, the unique governance structures of large state-owned banks may require separate in-depth case studies.

Future research could also explore more fine-grained mechanisms, including the role of specific digital technologies, the interaction between internal culture and external regulation and the potential of blockchain-based smart contracts for risk and revenue sharing in financial service supply chains.

7. Conclusion

This study examined the adoption and performance impact of SCM practices in the Azerbaijani banking sector using a sequential explanatory mixed-methods design. The findings show that Azerbaijani banks have moved beyond traditional, siloed structures towards more integrated service supply chains, heavily influenced by regulatory requirements and digital transformation.

Empirical results reveal that SCM adoption exerts strong positive effects on operational efficiency and service quality, and that these two constructs fully mediate its impact on overall bank performance. Top management commitment further enhances these relationships. These findings confirm the relevance of SSCM theory, the SCOR framework and the Service Profit Chain for banking in post-Soviet emerging economies.

From a practical standpoint, the study highlights the need for banks to deepen SCM capabilities—especially in the area of risk and revenue sharing with external partners—and for regulators to design policies that support not only digitalisation but also robust governance of service supply chains. More broadly, the Azerbaijani experience suggests that carefully designed regulatory interventions combined with SCM-based process redesign can enable rapid modernisation of banking sectors in similar transition economies.

In conclusion, SCM in banking should not be viewed solely as an operational tool; it represents a strategic approach to orchestrating complex networks of partners, technologies and processes. For Azerbaijani banks, and for institutions in comparable settings, building such capabilities offers a clear pathway to sustainable competitiveness in an era of open banking, fintech innovation and regional economic diversification.

REFERENCES

1. Akter, S., D'Ambra, J., & Ray, P. (2018). Multichannel integration quality: A systematic review and agenda for future research. *Journal of Retailing and Consumer Services*, 49, 154–163. <https://doi.org/10.1016/j.jretconser.2019.03.019>
2. APICS. (2017). *SCOR® quick reference guide*. <https://www.apics.org/docs/default-source/scor/scor-quick-reference-guide.pdf>
3. Baltacioglu, T., Ada, E., Kaplan, M. D., Yurt, O., & Kaplan, Y. C. (2007). A new framework for service supply chains. *Service Industries Journal*, 27(2), 105–124. <https://doi.org/10.1080/02642060601122680>
4. Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120. <https://doi.org/10.1177/014920639101700108>
5. Boon-itt, S., & Pongpanarat, K. (2011). Measuring service supply chain management processes: The application of the Q-sort technique. *European Journal of Operational Research*, 214(2), 366–376. <https://doi.org/10.1016/j.ejor.2011.04.026>
6. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
7. Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology*, 1(3), 185–216. <https://doi.org/10.1177/135910457000100301>

8. Central Bank of the Republic of Azerbaijan. (2023). *Annual report 2022*. <https://www.cbar.az/assets/2023-annual-report.pdf>
9. Central Bank of the Republic of Azerbaijan. (2024). *List of licensed banks*. <https://www.cbar.az/page-41/licensed-banks>
10. Creswell, J. W., & Plano Clark, V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE.
11. Ellram, L. M., Tate, W. L., & Billington, C. (2004). Understanding and managing the services supply chain. *Journal of Supply Chain Management*, 40(4), 17–32. <https://doi.org/10.1111/j.1745-493X.2004.tb00176.x>
12. Financial Markets Supervisory Authority. (2022). *Regulatory guidelines and annual overview*. <https://fimsa.az/en/reports/2022-annual-overview>
13. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>
14. Giannakis, M., & Louis, M. (2011). A multi-agent based framework for supply chain risk management. *Journal of Purchasing and Supply Management*, 17(1), 23–31. <https://doi.org/10.1016/j.pursup.2010.05.001>
15. Govindan, K., Kaliyan, M., Kannan, D., & Haq, A. N. (2015). Barriers analysis for green supply chain management implementation in Indian industry using analytic hierarchy process. *International Journal of Production Economics*, 147, 555–568. <https://doi.org/10.1016/j.ijpe.2013.08.018>
16. Heskett, J. L., Jones, T. O., Loveman, G. W., Sasser, W. E., Jr., & Schlesinger, L. A. (1994). Putting the service-profit chain to work. *Harvard Business Review*, 72(2), 164–174. <https://hbr.org/1994/03/putting-the-service-profit-chain-to-work>
17. Huo, B., Flynn, B. B., & Zhao, X. (2015). Supply chain integration and firm performance: The moderating effect of competitive strategy. *International Journal of Operations & Production Management*, 35(12), 1633–1657. <https://doi.org/10.1108/IJOPM-07-2014-0369>
18. Liu, H., Ke, W., Wei, K. K., & Hua, Z. (2018). The impact of information sharing on supply chain performance: The moderating role of supply chain interdependence. *Journal of Operations Management*, 59, 1–15. <https://doi.org/10.1016/j.jom.2018.04.002>
19. Marodin, G. A., Tortorella, G. L., Frank, A. G., & Godinho Filho, M. (2017). The moderating effect of lean supply chain management on the impact of lean shop floor practices on quality and inventory. *International Journal of Production Economics*, 191, 98–109. <https://doi.org/10.1016/j.ijpe.2017.06.008>
20. Sampson, S. E., & Froehle, C. M. (2006). Foundations and implications of a proposed unified services theory. *Production and Operations Management*, 15(2), 329–343. <https://doi.org/10.1111/j.1937-5956.2006.tb00248.x>
21. Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning*, 51(1), 40–49. <https://doi.org/10.1016/j.lrp.2017.06.007>
22. Wang, Q., Huo, B., Lai, F., & Chu, W. (2015). Understanding the outsourcing of non-core processes: An empirical investigation of the influence of supply chain management practices. *Journal of Operations Management*, 36, 1–15. <https://doi.org/10.1016/j.jom.2015.03.002>
23. World Bank. (2022). *Fintech and digital banking in Europe and Central Asia: Azerbaijan country note*. <https://www.worldbank.org/en/country/azerbaijan/publication/fintech-in-europe-central-asia>
24. Zhang, J., Zarrinjooee, H., & Zhang, Y. (2016). Service supply chain management: A review of operational models. *European Journal of Operational Research*, 247(3), 685–698. <https://doi.org/10.1016/j.ejor.2015.05.044>