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B2B Logistics Service Quality: Towards a Digitally Augmented Model

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Abstract— **In digitally enabled B2B markets, logistics service quality (LSQ) has emerged as a strategic lever for value creation, yet traditional evaluation models such as SERVQUAL fail to address the relational, adaptive, and technological expectations of contemporary clients. This study develops the B2B Logistics Service Quality Model (B2B-LSQM), a conceptual framework grounded in a qualitative investigation of how B2B clients assess logistics service quality. Drawing on 22 interviews across four types of wholesalers in the pastry-ingredient sector, the study employs thematic analysis to identify five empirically derived dimensions: technological reliability, proactiveness, transparency, personalization, and after-sales support. These findings reveal a paradigm shift in service logic—from transactional, static, and standardized delivery to relational, dynamic, and context-sensitive engagement. The B2B-LSQM contributes both theoretical refinement to service quality scholarship and practical guidance for logistics providers seeking competitive differentiation in digitally complex supply chains. Implications for measurement, implementation, and future research are discussed.**

Keywords— **logistics service quality, B2B, SERVQUAL, qualitative research, supply chain, digital transformation, value co-creation**

I. Introduction

In today's fast-paced B2B commerce landscape, logistics service quality (LSQ) has evolved into a strategic differentiator, where delivery services serve as platforms for value co-creation—combining tangible outcomes like on-time delivery with relational factors such as communication, adaptability, and mutual interaction [1], [2], [3], [4], [5], [6].

Yet traditional models like SERVQUAL [7] neglect critical expectations in digitally complex logistics ecosystems—real-time visibility, customized responsiveness, and post-delivery support [8]. Modern supply chains— marked by digital tracking, data integration, and transparency demands—require anticipatory services and end-to-end engagement, underscoring the need to revise existing frameworks to mirror contemporary logistics networks [9], [10], [11]. This study addresses that gap by exploring how B2B wholesalers assess logistics service quality across diverse business models. introduces the B2B Logistics Service Quality Model (B2B-LSQM)

II. Literature Review

Logistics Service Quality (LSQ) has evolved from a narrow operational performance metric—centered on punctuality and reliability—into a value-driven, relational, and digitally mediated paradigm. In B2B settings, where strategic alignment, operational interdependence, and risk exposure are high, clients derive value from transparency, configurability, and co-created solutions across the service lifecycle [14], [15]. Yet classical models like SERVQUAL [7] and its five dimensions—tangibility, reliability, responsiveness, assurance, empathy—were developed in consumer contexts and now overlook emergent expectations such as real-time visibility, personalized responsiveness, and post-delivery support [6], [8], [9], [16]. Empirical evidence shows that lacking these anticipatory capabilities undermines perceived value and trust—even when core KPIs are met—driving calls for frameworks that integrate foresight and technology into service-quality assessments [10], [17], [18], [19], [22].

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Building on these insights, scholars identify three critical paradigm shifts underpinning contemporary LSQ:

1. **Transactional → Relational**: Emphasizing trust, continuity, and personalized interaction [20], [21].
2. **Static → Dynamic**: Prioritizing real-time responsiveness over reactive service logic (Christopher, 2016; Zeithaml et al., 2002).
3. **Standardized → Contextual**: Leveraging data-driven customization to address unique client environments
   [4].

These shifts together justify a digitally augmented framework—grounded in relational depth, technological reliability, and proactive engagement—that the B2B Logistics Service Quality Model (B2B-LSQM) aims to fulfill.

III. Methodology

To investigate how logistics service quality is understood and evaluated in B2B contexts, this study adopts a qualitative, interpretivist research design. This approach is particularly suited for exploring nuanced, context-specific insights into client perceptions and experiences (Guba & Lincoln, 1994; Denzin & Lincoln, 2011). It aligns with the study's objective of identifying emergent service dimensions that extend beyond existing theoretical models.

A. Research Setting and Rationale

The empirical investigation focused on the pastry-ingredient wholesale sector, a strategically chosen context where delivery service quality has a direct and visible impact on product viability, client satisfaction, and supply chain responsiveness. The sector’s operational complexity—due to perishability, time sensitivity, and varied delivery formats—makes it ideal for exploring the interplay between digital infrastructure and relational service quality.

B. Sampling Strategy

A purposive sampling method was employed to ensure variation in logistics expectations and service experiences (Patton, 2002). The study engaged 22 wholesalers distributed across four distinct business models:

- Wholesale-Retailers
- Specialized Wholesalers
- Distributor Wholesalers
- Bulk Wholesalers

C. Data Collection

Data was gathered through 20 semi-structured interviews and 2 non-directive interviews conducted with logistics and operations managers responsible for client service quality. Interviews explored themes of reliability, digital visibility, flexibility, disruption management, and post-delivery engagement.

D. Analytical Procedure

Data was analyzed using thematic analysis (Braun & Clarke, 2006). Both inductive and abductive reasoning guided the development of codes and themes. Peer debriefing and partial member-checking were used to enhance the trustworthiness of the findings.

IV. Findings and Model Development

Thematic analysis of 22 interviews revealed five core dimensions that B2B clients consistently use to evaluate logistics service quality. These dimensions go beyond traditional SERVQUAL criteria and reflect the influence of digital infrastructure, proactive engagement, and sustained relational support.

1) Technological Reliability

“I need to see where the shipment is at any time—not just get a call later saying it’s delayed.” (R3)

2) Proactiveness

“I don’t want to be the one chasing for answers—I need them to tell me what’s going wrong and how they’re fixing it.” (R12)

3) Transparency

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"It's not just about things going wrong—it's about knowing that something might go wrong and being told early." (R6)

4) Personalization

"Some of our clients open only after 3 PM—we need deliveries scheduled around that, not just the standard route." (R10)

5) After-Sales Support

"We don't just need delivery; we need someone who checks in the next day, who solves issues if the order wasn't right." (R14)

Together, these five dimensions form the empirical foundation of the **B2B Logistics Service Quality Model (B2BLSQM)**, reflecting the shift toward digitally enabled, client-centric, and relationally embedded logistics service delivery.

V. Discussion

This study proposes a reframing of logistics service quality (LSQ) through the B2B-LSQM model, aligning traditional principles with the strategic, digital, and relational imperatives of modern B2B ecosystems. While classical dimensions from SERVQUAL—such as reliability and responsiveness [7] retain foundational value, they no longer suffice in environments where service quality is judged through digital transparency, proactive engagement, and sustained client relationships [8].

A. Strategic Augmentations of SERVQUAL

Empirical evidence highlights three critical extensions:

- Relational depth supersedes transactional efficiency: Institutionalized empathy and continuity are now baseline expectations [5].
- Proactive adaptation redefines responsiveness: Foresight and real-time agility replace reactive service logic [2].
- Technology-enabled transparency trumps tangibility: Clients prioritize data visibility and digital integration [22].

B. Empirical Validation of Paradigm Shifts

Findings confirm the relevance of earlier theoretical transitions: B2B clients no longer seek generic efficiency but value context-aware, real-time, and co-designed services. Providers must operate as strategic allies embedded in dynamic value networks [4], [21].

VI. Managerial Implications

Rather than offering a new checklist, the B2B-LSQM positions LSQ as a strategic platform for differentiation, trustbuilding, and competitive value in Logistics 4.0 contexts. Its implementation requires:

- Integrated digital infrastructures for visibility and reliability
- Proactive protocols for disruption handling
- Cultural and automated transparency
- Modular service architectures for customization
- Institutionalized after-sales engagement.

This repositioning elevates logistics from cost center to value creation enabler.

VII. Future Research Directions

Future work should focus on:

1) Developing validated scales for each B2B-LSQM dimension.
2) Testing the model across sectors and geographies to assess generalizability.
3) Conducting longitudinal studies to understand lifecycle dynamics.
4) Integrating co-creation and service-dominant logic to deepen theoretical framing.
5) Comparing 3PLs and in-house logistics to identify perception differences.

VIII. Conclusion

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This study introduced and empirically validated the five-dimensional B2B Logistics Service Quality Model (B2BLSQM), reframing logistics as a relational, anticipatory, and strategic function—and offering both scholars and practitioners a concise, actionable framework for measuring and enhancing service quality in today's digitally connected B2B supply chains.

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