

What are the Right Performance Dimensions to Gain Customers' Satisfaction? A Configural Approach in the Logistics Service Provider' Context

Barbara Gaudenzi, Ilenia Confente, Ivan Russo

Department of Business Administration, University of Verona (Italy)

email: *barbara.gaudenzi@univr.it, ilenia.confente@univr.it, ivan.russo@univr.it*

Abstract

In supply chains, third-party logistics (3PL) service providers play a key role in assuring high logistics service levels and consequently customer satisfaction.

The purpose of this study is twofold: the first goal is to investigate how business customers perceive the dimensions of logistics service quality (LSQ) in a domain of B2B relationships with a particular focus on the role of 3PL activities; the second goal is to analyze how such dimensions, combined together, lead to reach high levels of customer satisfaction.

This study employs a qualitative approach, namely the Qualitative Comparative Analysis (QCA). Then, data analysis has been done via the QCA approach, in order to explore how customer satisfaction can be reached through different combinations of LSQ dimensions and not only via a "single recipe" as most of symmetrical methods do.

The paper also presents useful implications for practitioners, describing several ways LSQ dimensions can be combined together in order to gain high levels of customer satisfaction by 3PL service providers.

Keywords: logistics service quality, third-party logistics, customer satisfaction, B2B relationships, Qualitative Comparative Analysis, QCA.

1. Introduction

Companies can achieve success not only by providing good products but also by offering effective service and developing good relationships within the supply chain (Carter et al., 2015). In parallel to be more competitive, many companies outsource their activities, which enables them to improve their operational efficiency, reduce costs, and strengthen their focus on their core competencies (Autry and Moon, 2016).

The research also extends understanding of logistics customer service more broadly by building on what is known about logistics customer service phenomena to explore what is unknown about how, when, and in what ways logistics management in particular drives customer service outcomes (Stank et al., 2017).

Thus it becomes necessary to understand the cross enterprise processes that take place between the manufacturing companies and the service providers given the heavy reliance on 3PLs in this area (Govindan et al., 2015; Shaharudin et al., 2014; Sharif et al., 2012). A growing number of companies have begun to realize the importance of implementing integrated supply chain management supported by their 3PLs. This is done in response to the pressure for filling customers' orders faster as well as for improving efficiencies in serving customers.

For 3PL, ensuring customer satisfaction is a key goal of service delivery; previous research indicates a strong link between this outcome and profitability (Stank et al., 2003). However, a customer satisfaction orientation in a supply chain represents a far more complex issue than managing customer satisfaction within a single firm, even as it offers the potential for increased benefits to participant firms.

Previous research has already identified the various antecedents of customer satisfaction derived from logistics service quality (LSQ). With respect to LSQ, past studies have exclusively focused on the 'net effects' of these antecedents. Based on that, we propose to analyze how the different LSQ constructs of managing the customer-3PL operations in B2B markets can lead to achieve high levels of satisfaction via different combinations of such constructs. In doing so, we adopted a qualitative approach, namely the Qualitative Comparative Analysis (QCA) (Wagemann et al., 2016; Russo and Confente, 2017).

The present study is focused on the food supply chain context, and attempts to understand which configurations of LSQ dimensions may lead to customer satisfaction. The study also addresses the limitations of existing research on LSQ and provides new implications and insights.

2. Literature review

Service quality has been described in quality management and service management literature as a multidimensional construct, characterized by technical, functional and image dimensions (Grönroos, 1990; Parasuraman et al., 1988; Lehtinen and Lehtinen, 1982). In particular, the technical dimension is related to process outcomes, the functional dimension addresses how the service is supplied, and the image dimension is related to the potential influence that an organization's image can have on consumer perceptions.

In a logistics domain, service performance has been described as a key driver to create value and to gain competitive advantage (Stank et al., 2003; Mentzer et al. 2001; Mentzer et al., 1999). In particular, logistics service performance has been categorized by Stank et al. (2003) into the operational and the relational dimensions, while Rafele (2004) proposed a framework for

measuring logistic service performance, considering in particular three logistics quality dimensions: tangible components, fulfillment methods, and informative actions.

With respect to logistics service quality (LSQ) and its contribution to customer satisfaction, there are several studies analyzing business to business relationships and logistics service outsourcing. Maltz and Ellram (1987) investigated the total cost of relationship in logistics outsourcing decision. Rahman (2006) and Gotzamani et al. (2010) analyzed the links between logistics service outsourcing and quality management, highlighting the relationship between logistics service and operational / financial performance. Kilibarda et al. (2016) applied the SERVQUAL technique to logistics and freight forwarding.

However, in most of the existing studies, the unit of analysis is the buyer-supplier relationship. As highlighted by Bask (2001), in the logistics service providers' context, LSQ should be addressed not in this dyadic perspective, analyzing buyer-supplier relationships, but in a "logistics triad", involving buyer, supplier, and logistics service provider in third-party logistics (3PL) (Sohn et al., 2017). From this perspective, the complex nature of the relationships makes it difficult to assess outsourcing performance (Leuschner et al., 2014; Knemeyer and Murphy, 2004), and few empirical studies address LSQ and customer satisfaction, involving 3PLs (Selviaridis and Spring, 2007).

Customer satisfaction and service quality are related concepts. When service performance goes beyond expectations, the customer is highly satisfied or even delighted (Juga et al., 2010), with a positive effect for developing successful relationships (Skarmeas et al., 2008).

Anderson and Narus (1984, pag. 66) defined satisfaction in B2B relationships as "a positive affective state resulting from the appraisal of all aspects of a firm's working relationship with another firm". However, LSQ has multi-dimensional attributes, and customers do not perceive service characteristics as equally relevant (Mikulic and Prebezac, 2011).

The customer perception of LSQ and its relationship with customer satisfaction have been described by Rafiq and Jaafar (2007), which consider 'functional measures' – particularly personnel contact quality, information quality, ordering procedures – as excellent quality indicators, which are most important for customers. In parallel, these authors consider 'technical measures' – such as order quality, order release quantities, and order accuracy – as less appropriate to address LSQ.

Therefore, we undertook a qualitative study, based on a QCA approach, to measure the overall satisfaction perceived by the customers of a 3PL provider in different business-to-business service settings.

3. Research Method

QCA explores the relationships between the outcome of interest (satisfaction in our study) and all possible combinations of binary states (i.e., presence or absence) of its conditions (the independent variables; in our case we have LSQ constructs) (Fiss, 2007; Ragin, 2000). QCA is based on the principles of set theory, formal logic, Boolean and fuzzy algebra and it is gaining more and more importance in management studies due to its usefulness in configurations analysis (see for instance Russo et al., 2016; Leischnig and Kasper-Brauner, 2015; Ordanini et al., 2014; Greckhamer et al., 2008).

3.1 Data collection

We collected data in the food industry, particularly through a global 3PL company, a leader in the Italian food industry.

The focus on a particular sector is in line with previous studies on customer satisfaction (e.g., Lam et al., 2004; Shankar et al., 2003) and allows collecting more accurate responses and can provide a better internal validity, reducing the error variance.

3.2 Sample characteristics

The survey link was sent via email to a sample of a total of 257 customer firms of the 3PL company. Finally, 150 completed surveys were collected. With regards to the organizations dimension, respondents belonged to three categories of companies: big companies, in terms of volumes/revenues (36% of the sample), medium companies in terms of volumes/revenues (61% of the sample) and “smaller retailer customers” (3% of the sample).

Respondents were mainly logistics managers (49%), CEO’s (8%), sales and key account managers (10%), procurement and supply chain managers (10%), managers from other functions (23%), and they were asked to evaluate the quality of the logistics service they receive from the 3PL company.

3.3 Data analysis: a Qualitative Comparative Analysis (QCA)

As stated before, this study adopts a QCA approach to analyse the data in order to better capture the complexity of the phenomenon and its relationship with other dimensions. This is in line with the principle of causal asymmetry introduced by Fiss (2007). This supports configuration theory, which suggests that the same set of causal factors can lead to different outcomes, depending on how such factors are arranged (Ordanini et al., 2014). This supports the tenant of equifinality determined by complexity theory that states that an outcome can be reached through different combinations of variables (Ragin, 2000).

In order to implement such analysis the fuzzy set QCA (fsQCA) software¹ has been adopted. fsQCA represents a useful means to screen and identify the configurations of variables that are sufficient to reach a high level of an outcome. We followed the procedure composed by four steps elaborated by Fiss (2007).

4. Findings from the Qualitative Comparative Analysis

Our findings indicate three possible solutions to achieve high customer satisfaction.

The first solution presents a combination of the presence of only order discrepancy handling and the absence of all the other LSQ dimensions. This configuration shows the case where customers are mainly satisfied of just one component of LSQ while they do not pay the same attention for the other variables. However, this “recipe” has the lowest consistency compared to the other two solutions where more variables are present.

The second solution brings together the presence of information quality, order accuracy and condition, order discrepancy handling and timeliness while the absence of personnel contact quality and ordering procedure in determining high levels of customer satisfaction.

Finally, the third solution includes the presence of all the LSQ dimensions.

¹ For further information about the usage and guidelines of fsQCA, please visit the website: <http://www.u.arizona.edu/~cragin/fsQCA/>.

5. Implications and conclusions

In detail this research identified – by using a QCA approach – how different combinations of LSQ lead to high levels of customer satisfaction. Past studies focused exclusively on the ‘net effects’ of these antecedents, thus not capturing the complexity of the links between LSQ antecedents and customer satisfaction. This study highlights a rich and comprehensive perspective on different combinations that lead to the same outcome. This is an important finding as it highlights the complexity of the factors that may impact on perceived customer satisfaction, in the relationship between customers and 3PL service providers.

In detail the study highlighted that the effective capability to handle the order discrepancy represents a key competence for 3PL service providers. This LSQ dimension is present in all the three configurations emerged in the analysis.

These are interesting implications, which might help companies in the challenge to satisfy customers with a micro-segmentation strategy in the B2B context. Firms could in fact split the supply chain into several micro-segments, based on specific customer’s needs, service levels and an effective allocation of company’s resources and capabilities. Given these goals and competitive challenges, firms - in our case 3PL service providers - must choose between different recipes that lead to the same result (i.e. customer satisfaction).

There also are several managerial implications of this study. Managers might be keen on learning which specific LSQ dimensions they must prioritize to ensure the satisfaction perceived by their customers. This information can be relevant for developing a customer relationship strategy and defining the logistics and service agreements. In addition, this information can support managers in determine how to allocate resources to achieve customer satisfaction in the case of 3PL service providers.

References

- Anderson, J.C., Narus, J.A. (1984). “A model of the distributor's perspective of distributor-manufacturer working relationships”, *Journal of Marketing*, 48(4): 62-74.
- Autry, C.W. and Moon, M.A. (2016). *Achieving supply chain integration: connecting the supply chain inside and out for competitive advantage*, Old Tappan, NJ: FT Press.
- Bask, A.H. (2001). “Relationships among TPL providers and members of supply chains – a strategic perspective”, *Journal of Business and Industrial Marketing*, 16(6): pp. 470-486.
- Carter, C.R., Rogers, D.S., Choi, T.Y. (2015). “Toward the theory of the supply chain”, *Journal of Supply Chain Management*, 51(2): 89-97.
- Fiss, P.C. (2007). “A set-theoretic approach to organizational configurations”, *Academy of Management Review*, 32(4): 1190–1198.
- Gotzamani, K., Longinidis, P., Vouzas, F. (2010). “The logistics services outsourcing dilemma: quality management and financial performance perspectives”, *Supply Chain Management: An International Journal*, 15(6): 438-453.
- Govindan, K., Soleimani, H., Kannan, D. (2015). “Reverse logistics and closed-loop supply chain: A comprehensive review to explore the future”, *European Journal of Operational Research*, 240(3): 603-626.
- Greckhamer, T., Koro-Ljungberg, M., Cilesiz, S., Hayes, S. (2008). “Demystifying interdisciplinary qualitative research”, *Qualitative Inquiry*, 14(2): 307-331.

Grönroos, C. (1990). *Service Management and Marketing*. Lexington Books, Lexington, MA.

Juga, J., Juntunen, J., Grant, D. B. (2010). "Service quality and its relation to satisfaction and Loyalty in logistics outsourcing relationships", *Managing Service Quality*, 20(6): 496-510.

Kilibarda, M., Nikolicic, S., Andrejic, M. (2016). "Measurement of logistics service quality in freight forwarding companies: A case study of the Serbian market", *The International Journal of Logistics Management*, 27(3): 770-794.

Knemeyer, A.M., Murphy, P.R. (2004). "Evaluating the performance of third-party logistics arrangements: a relationship marketing perspective", *Journal of Supply Chain Management*, 40(1): 35-51.

Lam, S.Y., Shankar, V., Erramilli, M.K., Murthy, B. (2004). "Customer value, satisfaction, loyalty, and switching costs: an illustration from a business-to-business service context", *Journal of the Academy of Marketing Science*, 32(3): 293-311.

Large, R.O., Kramer, N. and Hartmann, R.K. (2011). "Customer-specific adaptation by providers and their perception of 3PL-relationship success", *International Journal of Physical Distribution & Logistics Management*, 41(9): 822-838.

Lehtinen, U., Lehtinen, J.R. (1982). *Service Quality: A Study of Quality Dimensions*. Service Management Institute, Helsinki.

Leischnig, A., Kasper-Brauer, K. (2015). "Employee Adaptive Behavior in Service Enactments", *Journal of Business Research*, 68(2): 273-280.

Leuschner, R., Carter, C.R., Goldsby, T.J., Rogers, Z.S. (2014). "Third-party logistics: a meta-analytic review and investigation of its impact on performance", *Journal of Supply Chain Management*, 50(1): 21-43.

Lewin, J.E. (2009). "Business customers' satisfaction: What happens when suppliers downsize?", *Industrial Marketing Management*, 38(3): 283-299.

Luo, X., Homburg, C., Wieseke, J. (2010). "Customer satisfaction, analyst stock recommendations, and firm value", *Journal of Marketing Research*, 47(6): 1041-1058.

Maltz, A.B., Ellram, L.M. (1997). "Total cost of relationship: an analytical framework for the logistics outsourcing decision", *Journal of Business Logistics*, 18(1): 45-66.

Mentzer, J. T., Flint, D. J., Kent, J.L. (1999). "Developing a logistics service quality scale", *Journal of Business Logistics*, 20(1): 9-32.

Mentzer, J.T., Flint, D.J., Hult, G.T.M. (2001). "Logistics service quality as a segment-customized process", *Journal of Marketing*, 65(4): 82-104.

Mikulic, J., Prebezac, D. (2011). "A critical review of techniques for classifying quality attributes in the Kano model", *Managing Service Quality: An International Journal*, 21(1): 46-66.

Ordanini, A., Parasuraman, A., Rubera, G. (2014). "When the recipe is more important than the ingredients: A qualitative comparative analysis (QCA) of service innovation configurations", *Journal of Service Research*, 17(2): 134-149.

Parasuraman, A., Zeithaml, V.A., Malhotra, A. (2005). "ES-QUAL: A multiple-item scale for assessing electronic service quality", *Journal of Service Research*, 7(3): 213-233.

Petersen, J. Andrew, V. Kumar (2009). "Are product returns a necessary evil? Antecedents and consequences", *Journal of Marketing*, 73(3): 35-51.

Rafele, C. (2004). "Logistic service measurement: a reference framework", *Journal of Manufacturing Technology Management*, 15(3): 280-290.

Rafiq, M., Jaafar, H. S. (2007). "Measuring customers' perceptions of logistics service quality of 3PL service providers", *Journal of Business Logistics*, 28(2): 159-175.

- Ragin, C.C. (2000). *Fuzzy Set Social Science*, Chicago University Press, Chicago.
- Rahman, S.U. (2006). "Quality management in logistics: an examination of industry practices", *Supply Chain Management: An International Journal*, 11(3): 233-240.
- Russo, I., Confente, I. (2017). *Customer Loyalty and Supply Chain Management: Business-to-Business Customer Loyalty Analysis*, Routledge, New York.
- Russo, I., Confente, I., Gligor, D.M., Autry, C.W. (2016). "To be or not to be (loyal): Is there a recipe for customer loyalty in the B2B context?", *Journal of Business Research*, 69(2): 888-896.
- Selviaridis, K., Spring, M. (2007). "Third party logistics: a literature review and research agenda", *The International Journal of Logistics Management*, 18(1): 125-150.
- Shaharudin, M.R., Zailani, S., Ismail, M. (2014). "Third party logistics orchestrator role in reverse logistics and closed-loop supply chains", *International Journal of Logistics Systems and Management*, 18(2): 200-215.
- Shankar, V., Smith, A.J., Rangaswamy, R. (2003). "Customer satisfaction and loyalty in online and offline environments", *International Journal of Research in Marketing*, 20(2): 153-175.
- Sharif, A.M., Irani, Z., Love, P. E., Kamal, M.M. (2012). "Evaluating reverse third-party logistics operations using a semi-fuzzy approach", *International Journal of Production Research*, 50(9): 2515-2532.
- Skarmeeas, D., Katsikeas, C.S., Spyropoulou S., Salehi-Sangari, E. (2008). "Market and supplier characteristics driving distributor relationship quality in international marketing channels of industrial products", *Industrial Marketing Management*, 37(1): 23-36.
- Sohn, Jea-Il, Woo, Su-Han, Kim, Taek-Won (2017). "Assessment of logistics service quality using the Kano model in a logistics-triadic relationship", *The International Journal of Logistics Management*, 28(2): 680-698.
- Stank, T.P., Goldsby, T.J., Vickery, S.K., Savitskie, K. (2003). "Logistics service performance: estimating its influence on market share", *Journal of Business Logistics*, 24(1): 27-55.
- Stank, T.P., Pellathy, D.A., In, J., Mollenkopf, D.A., Bell, J.E. (2017). "New Frontiers in Logistics Research: Theorizing at the Middle Range", *Journal of Business Logistics*, 38(1): 6-17.
- Vanichchinchai, A., Igel, B. (2009). "Total quality management and supply chain management: similarities and differences", *The TQM Journal*, 21(3): 249-260.
- Wagemann, C., Buche, J., Siewert, M.B. (2016). "QCA and business research: Work in progress or a consolidated agenda?", *Journal of Business Research*, 69(7): 2531-2540.
- Woodside, A.G. (2014). "Embrace perform model: Complexity theory, contrarian case analysis, and multiple realities", *Journal of Business Research*, 67(12): 2495-2503.
- Woodside, A.G., Baxter, R., (2013). "Achieving accuracy, generalization-to-contexts, and complexity in theories of business-to-business decision processes", *Industrial Marketing Management*, 42(3): pp. 382-393.