IDENTIFYING CRITICAL LOGISTICS SERVICE QUALITY FACTORS IN THIRD PARTY LOGISTICS INDUSTRY IN JORDAN: IMPLICATIONS FOR MANAGERIAL DECISIONS

LUAY JUM'A

Logistic Sciences Department German Jordanian UniversityJordan
E-mail:luay.juma@gju.edu.jo

Abstract - Third-party logistics (3PL) service providers are striving to improve the level of services provided to their customers since the competition is rising in 3PL industry. One of the most important sources of information for 3PL companies in making their managerial decisions is the perspective of their customers. This valuable information provide guidance for improving logistics service quality (LSQ) levels in the context of 3PL industry in Jordan. Therefore, the study suggested a managerial tool that guides 3PL companies in making improvements for their LSQ factors based on a quadrant analysis using two main dimensions: LSQ declared importance and LSQ inferred importance. Moreover, the data were collected through conducting a survey on Business-to-Business (B2B) customers of 3PLs in Jordan. The results showed that the following LSQ factors are crucial and therefore need to be maintained by 3PL service providers in the Jordanian market: timeliness/responsiveness, ordering procedures, information quality and personnel contact quality while other LSQ factors differ in their importance from the perspective of 3PL service providers' customers.

Keywords - Logistics Service Quality, 3PL, Quadrant Analysis, Third-Party Logistics

I. INTRODUCTION

The dynamic changes in 3PL industry create many challenges in the domestic, international and global markets. All these challenges put more pressure on the decision makers of 3PL companies that are required to cope with changes in consumer behaviour, demanding expectations from customers and reductions in lead times (Langley &CapGemini, 2017). Moreover, the need to have a competitive advantage and core competencies over competitors in 3PL market increase since the movement towards using outsourced 3PL service outpaced the movement towards producing goods and services internally by companies according to a global logistics survey completed by Langley &CapGemini (2017).

As this trend is expected to grow over the coming years, B2B and B2C customer satisfaction become a priority for 3PL companies. One important way to improve 3PL service quality levels is to identify areas of strengths and improvements based on thorough analysis of their customers' perception on the provided logistics services (Soh, Chin, & Wong, 2015).

II. LITERATURE REVIEW

2.1. 3PL and Logistics Service Quality

Third-party logistics (3PL) service providers can be defined as an external service provider that performs part or all of the company's logistical activities with focus on customer service (Berglund et al., 1999; Rafiq&Jaafar, 2007; Razzaque& Sheng, 1998; Coyle et al., 2013; Hwang, Chen & Lin, 2016). The main advantage for the companies to use such a trend is the realised percentage of cost reduction on the total cost of logistics operations and an incremental improvement in customer service (Langley &CapGemini, 2016; Govindan, Khodaverdi&Vafadarnikjoo, 2016).

Therefore, logistics Service Quality (LSQ) has been studied thoroughly in the last few decades, since it is considered one of the most critical factors that contribute to the satisfaction of B2B customers in the logistics industry (Mentzer& Williams, 2001; Mentzer , Flint &Hult, 2001; Bienstock et al., 2008; Juga, Juntunen& Grant, 2010; Thai, 2013; Yang et al., 2016; Fernandes, Moori, and Filho, 2018).Mentzer, Flint & Kent (1999) completed a qualitative study on DLA Logistics Company, which introduced a specialised LSQ measurement scale, resulting in the production of nine LSQ dimensions: personnel contact quality, order release quantities, information quality, ordering procedures, order accuracy, order condition, order quality, order discrepancy handling and timeliness. This LSQ measurement scale was validated in the 2001 work of Mentzer, Flint &Hult, with Rafiq&Jafaar (2007) testing and validating Mentzer, Flint & Kent (1999) in the context of the 3PL industry in order to to improve its overall generalisability and its external validity.

Mentzer, Flint and Hult (2001) briefly defined the nine factors as follow: personnel contact quality refers to the orientation made by the logistics customer service contact people of the logistics company to the contact people of customers. Order release quantities are a dimension related to the aspects of product availability and the release of order sizes based on several criteria set by the logistics service provider. The information quality dimension

refers to the information provided by suppliers to their customers, and how it is perceived. Ordering procedures are a dimension centred on the accuracy of procedures and information availability of the order; therefore, it refers to the efficiency and effectiveness of the procedures followed by the supplier. Order accuracy refers to the accuracy of the order upon arrival and how closely the shipment matches the customer order. Order condition refers to the percentage of damage to the orders received; the lower the percentage of damage, the greater the level of service quality. Order quality refers to the quality of the products from the source company or the vendor; hence, such quality is related to how well the product works. Order discrepancy handling refers to how well the logistics service provider deals with any discrepancies after the order received by customers. Timeliness/responsiveness refers to the receipt of the order at the customer location, as scheduled and promised by the logistics service provider.
Since the model is specialized in investigating LSQ, the study employed this model in order to generate managerial actions regarding each LSQ factor.

2.2. Quadrant Analysis and Logistics Service Quality Measurement

While a considerable number of researches have been conducted to examine the relationship between LSQ and customer satisfaction, few studies focused on developing managerial tools to help decision makers to improve LSQ levels (Politis, Giovanis, and Binioris, 2014; Thai, 2013; Gil-Saura, Servera-Francés& Fuentes-Blasco, 2010; Gil Saura, Ruiz Molina &Servera Frances, 2008; Gil-Saura& Ruiz-Molina, 2011; Hwang, Chen & Lin, 2016).
In this regard, having a managerial tool that help 3PL service providers in managing the LSQ factors portfolio effectively and efficiently would be a great investment for service providers (Langley &CapGemini, 2017). One way of improving LSQ factors for 3PL service providers is the use of attribute categorization tools such as Importance–Performance Analysis (IPA) that is proposed by Martilla& James (1977).

However, there are several techniques for attribute categorisation, one of which uses two dimensions: the declared importance, which relates to the direct assessment of an attribute's importance; and the inferred importance which relates to the strength of the correlation between the attribute and overall customer satisfaction (Vavra, 1997; Bartikowski&Llosa, 2004).

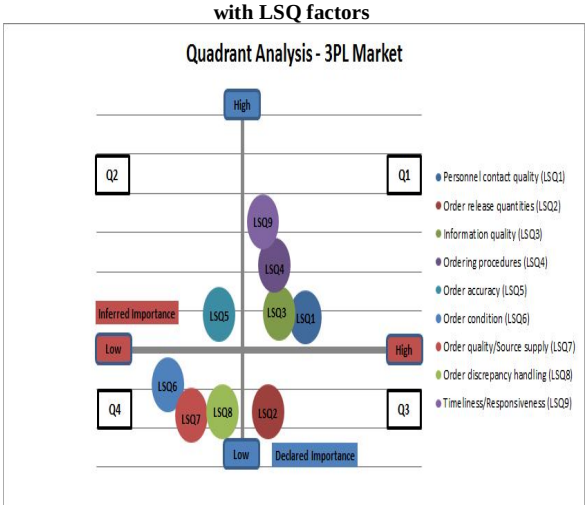
In mind of the above, the dual importance analysis will create a matrix that provides 3PL service providers with an opportunity to have a valuable guidance on how to improve LSQ factors since the importance of these factors will be identified in two different ways that complete each other. Bartikowski&Llosa (2004) explain that the factors receiving high importance ratings from both scales are the most important factors while the factors receiving low importance ratings from both scales are considered the least important factors.
Thus, the evolution of logistics service quality can affect 3PL customer satisfaction and therefore 3PL service providers should understand how to improve LSQ levels in order to improve their logistical capabilities accordingly (Malgorzata and Gajewska, 2014; Fernandes, Moori, and Filho, 2018).

III. RESULTS AND DISCUSSION

The present study focused on B2B customers in Jordan who are outsourcing more than one logistical activity from 3PL service providers. The study employed a Stratified Random Sample (SRS) type of sampling and it ended up with having 288 usable and valid questionnaires and the data were inputted into SPSS for the purpose of analysis.

As for the analysis the data of LSQ declared importance and inferred importance were plotted in a matrix of 2x2 and a quadrant analysis was performed and all LSQ factors were divided into four groups based on its mean difference of declared and inferred importance across all LSQ factors as shown in figure 1.

Fig.1. Quadrant Analysis for 3PL Jordanian Market along with LSQ factors



The results of the study classified LSQ factors in four quadrants. LSQ factors in quadrant one indicate a high average of declared importance and a high average of inferred importance of LSQ factors and these factors should receive the most attention as a primary LSQ factors to maintain by 3PL service provider. Quadrant one included the following LSQ factors: timeliness/responsiveness, ordering procedures, information quality and personnel contact quality.
LSQ factors in quadrant two indicate a high average of declared importance and a low average of inferred importance of LSQ factors and these factors are

considered to be as a potential advantage if marketed properly by 3PL service provider. Quadrant two included order accuracy LSQ factor.

LSQ factors in quadrant three indicate a low average of declared importance and a high average of inferred importance of LSQ factors and as these factors are recognised as primary opportunities for 3PL service providers to be developed. Quadrant three included order release quantities LSQ factor.

LSQ factors in quadrant four indicate a low average of declared importance and a low average of inferred importance of LSQ factors and these factors should be considered as a low priority to 3PL service provider and a secondary opportunity at the maximum case. Quadrant four included the following LSQ factors: order condition, order quality from source supply and order discrepancy handling.

CONCLUSIONS

The study used an attribute categorization technique that helps managers of 3PL service providers in Jordan to understand their customers in a better way and use their scarce resources in improving their LSQ factors more effectively and efficiently. Quadrant analysis was performed to create a matrix based on two main dimensions, namely LSQ declared importance and LSQ inferred importance that resulted in having a four- quadrants mapping tool. The tool provided a guideline for 3PL service providers in the Jordanian market on how to improve LSQ factors and what is the recommended actions for the factors located in each quadrant.

As can be concluded from figure 1, the following LSQ factors in quadrant one are crucial and top priority to 3PL service providers and therefore need to be maintained by 3PL service providers in the Jordanian market: timeliness/responsiveness, ordering procedures, information quality and personnel contact quality. Furthermore, it is clear that order accuracy LSQ factor in quadrant two is a key differentiator factor if marketed properly by 3PL service providers. Moreover, it should also be recognized that order release quantities LSQ factor in quadrant three is a primary opportunity for investment for 3PL service providers. Finally, there is a need to know that the Jordanian market are considering the following LSQ factors as secondary opportunities for investment with low priority: order condition, order quality from source supply and order discrepancy handling. Thus, the results of the quadrant analysis provide 3PL service providers with clear directions for LSQ investments and decision-making for each LSQ factor in the Jordanian market.

REFERENCES

[1] C.R.C. Lima, J.M. Guilemany, “Adhesion improvements of Thermal Barrier Coatings with HVOF thermally sprayed bond coats”, Surface and Coatings Technology, vol.201,no.8,pp.4694–4701,15 January 2007,.

[2] Bartikowski, B. and Llosa, S. (2004) 'Customer satisfaction measurement: comparing four methods of attribute categorisations', The Service Industries Journal, 24(4), pp. 67-82.

[3] Berglund, M., Van Laarhoven, P., Sharman, G. and Wandel, S. (1999) 'Third-party logistics: is there a future?', The International Journal of Logistics Management, 10(1), pp. 59-70.

[4] Bienstock, C.C., Royne, M.B., Sherrell, D. and Stafford, T.F. (2008) 'An expanded model of logistics service quality: Incorporating logistics information technology', International Journal of Production Economics, 113(1), pp. 205-222.

[5] Coyle, J.J., Gibson, B.J., Langley, C.J. and Novack, R.A. (2013) Managing supply chains: a logistics approach. South-Western Cengage Learning.

[6] Fernandes, D.W., Moori, R.G. and Filho, V.A.V., (2018) Logistic service quality as a mediator between logistics capabilities and customer satisfaction. Revista de Gestão, 25(4), pp.358-372.

[7] Gil Saura, I., Ruiz Molina, M.E. and Servera Frances, D. (2008) 'Logistic service quality and technology: a comparison between supplier–retailer and retailer–consumer relationships', The International Review of Retail, Distribution and Consumer Research, 18(5), pp. 495-510.

[8] Gil-Saura, I. and Ruiz-Molina, M.E. (2011) 'Logistics service quality and buyer–customer relationships: the moderating role of technology in B2B and B2C contexts', The Service Industries Journal, 31(7), pp. 1109-1123.

[9] Gil-Saura, I., Servera-Francés, D. and Fuentes-Blasco, M. (2010) 'Antecedents and consequences of logistics value: And empirical investigation in the Spanish market', Industrial Marketing Management, 39(3), pp. 493-506.

[10] Govindan, K., Khodaverdi, R. and Vafadarnikjoo, A. (2016) 'A grey DEMATEL approach to develop third-party logistics provider selection criteria', Industrial Management & Data Systems, 116(4), pp. 690-722.

[11] Hwang, B., Chen, T. and Lin, J.T. (2016) '3PL selection criteria in integrated circuit manufacturing industry in Taiwan', Supply Chain Management: An International Journal, 21(1), pp. 103-124.

[12] Juga, J., Juntunen, J. and Grant, D.B. (2010) 'Service quality and its relation to satisfaction and loyalty in logistics outsourcing relationships', Managing Service Quality: An International Journal, 20(6), pp. 496-510.

[13] Langley, J.C. and CapGemini US LLC (2016) The State of Logistics Outsourcing: 2016 Third Party Logistics Study: Results and Findings of the 20th Annual Survey. Available at: www.3plstudy.com (Accessed: 19/10/2018).

[14] Langley, J.C. and CapGemini US LLC (2017) The State of Logistics Outsourcing: 2017 Third Party Logistics Study: Results and Findings of the 21th Annual Survey. Available at: www.3plstudy.com (Accessed: 19/10/2018).

[15] Malgorzata, L.K. and Gajewska, T. (2014), “Customer satisfaction with the quality of the logistic services”, Scientific Journal of Logistics – Log Forum, Vol. 10 No. 1, pp. 13-19.

[16] Martilla, J.A. and James, J.C. (1977) 'Importance-performance analyses', Journal of Marketing, 41(1), pp. 77-9.

[17] Mentzer, J.T. and Williams, L.R. (2001) 'The role of logistics leverage in marketing strategy', Journal of Marketing Channels, 8(3-4), pp. 29-47.

[18] Mentzer, J.T., Flint, D.J. and Hult, G.T.M. (2001) 'Logistics service quality as a segment-customized process', Journal of Marketing, 65(4), pp. 82-104.

[19] Mentzer, J.T., Flint, D.J. and Kent, J.L. (1999) 'Developing a logistics service quality scale', Journal of Business logistics, 20(1), pp. 9.

[20] Politis, Y., Giovanis, A. and Binioris, S. (2014). 'Logistics service quality and its effects on customer satisfaction in the manufacturing companies' supply chains: Empirical evidence from Greece', Journal of Modelling in Management, 9(2), pp.215-237.

[21] Rafiq, M. and Jaafar, H.S. (2007) 'MEASURING CUSTOMERS'PERCEPTIONS OF LOGISTICS SERVICE QUALITY OF 3PL SERVICE PROVIDERS', Journal of business logistics, 28(2), pp. 159-175.

[22] Razzaque, A. M. and Sheng, C.C. (1998) 'Outsourcing of logistics functions: a literature survey', International Journal of Physical Distribution & Logistics Management, 28(2), pp. 89-107.

[23] Soh, K.L., Chin, S.H. and Wong, W.P. (2015) 'A theoretical model to investigate customer loyalty on logistics service providers for sustainable business performance', International Journal of Business Performance and Supply Chain Modelling, 7(3), pp. 212-232.

[24] Thai, V.V. (2013) 'Logistics service quality: conceptual model and empirical evidence', International Journal of Logistics Research and Applications, 16(2), pp. 114-131.

[25] Vavra, T.G. (1997) Improving your measurement of customer satisfaction: A guide to creating, conducting, analyzing, and reporting customer satisfaction measurement programs. USA: ASQ quality press.

[26] Yang, Q., Zhao, X., Yeung, H.Y.J. and Liu, Y. (2016) 'Improving logistics outsourcing performance through transactional and relational mechanisms under transaction uncertainties: Evidence from China', International Journal of Production Economics, 175, pp. 12-23.

★★★