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Abstract

A method to evaluate the quality of service of a customer service centre is proposed based on Six Sigma, and through an empirical and rational approach that allowed an objective perspective during the development of the study. The quality dimensions that structure the service were identified to consolidate their valuation and to analyse the results in terms of defects per parts per million, sigma level and yield. As a result, it was found that the performance of the service quality dimensions was satisfactory due to the results obtained by all the calculated metrics, obtained an average yield percentage above 97% in the two periods, and all dimensions of quality were above the critical sigma value with a level above 3.43 which shows that the centre provided a satisfactory service process during these periods. Finally, the proposed method associated with the contextualisation of the quality dimensions of the service is significantly innovative and important for the scientific and business community. Copyright © 2022 Inderscience Enterprises Ltd.

References

Bailke, P.A., Patil, S.t.

Distributed algorithms for improved associative multilabel document classification considering reoccurrence of features and handling minority classes

(2019) International Journal of Business Intelligence and Data Mining, 14 (3), pp. 299-321. (accessed 26 August 2020)

- Benbrahim, C.F., Sefiani, N., Meddaoui, A., Reklaoui, K.
 Assessment of human resource competence and performance indicator (2017) International Journal of Process Management and Benchmarking, 7 (1), p. 20. (accessed 4 May 2020)
- Bo, X., Wang, Y., Zou, J.
 Implementation of Six Sigma to service quality management in auto aftersale

(2013) The 19th International Conference on Industrial Engineering and

Engineering Management, Berlin, Heidelberg (accessed July 2019)

• Canals, C.S.

Medida de la Calidad: Adaptación de la Escala Servqual al Ámbito Financiero', Spanish Journal of Finance and Accounting (2002) Revista Española de Financiación y Contabilidad, 31 (113), pp. 803-831. (accessed July 2019)

• Cheng, K.M., Hsu, C.H., Huang, C.H.

A study on the application of 6-Sigma on the enhancement of service quality of fitness club

(2012) *Quality & Quantity*, 46 (2), pp. 705-713. (accessed 26 August 2020)

• Cowles, T.D., Myers, A.

Service quality in the public sector: a comparative analysis of public- and private-sector contact personnel

(2014) Proceedings of the 1993 Academy of Marketing Science (AMS) Annual Conference, pp. 383-387. (accessed June 2019)

• Dasgupta, T.

Using the six-sigma metric to measure and improve the performance of a supply chain

(2010) Total Quality Management & Business Excellence, 14 (3), pp. 355-366. (accessed 24 April 2020)

• Delahoz-Dominguez, E.J., Fontalvo, T.J., Fontalvo, O.M.

Evaluation of service quality by means of Six Sigma in a center of documentary attention in a university

(2020) Formación universitaria, Centro de Información Tecnológica, 13 (2), pp. 93-102. (accessed 24 April 2020)

• Fontalvo, T.

Aplicación de Seis Sigma en una empresa productora de Cemento Application of six sigma in Cement manufacturer

(2011) *Escenarios*, 9 (1), pp. 7-17. (accessed July 2019)

• Fontalvo, T., De La Hoz, E., De La Hoz, E.

Data envelopment analysis method and neural networks in the evaluation and prediction of the technical efficiency of small exporting companies [Método análisis envolvente de datos y redes neuronales en la evaluación y predicción de la eficiencia técnica de pequeñas empresas exportadoras] (2018) *Informacion Tecnologica*, 29 (6), pp. 267-276.

- Fontalvo, T., Herrera, R., De la Hoz, E.
 Método de evaluación de la calidad del servicio de una unidad de atención al usuario en una empresa de servicio de agua en Colombia (2020) Información Tecnológica, 31 (4), pp. 27-34. (accessed 24 August 2020)
- Gimeno, J., Ruiz-Olalla, M.

Utilidad de los Cuestionarios Como Indicadores Para la Medición de la Calidad del Servicio: Un Análisis Empírico', Spanish Journal of Finance and Accounting

(2001) Revista Española de Financiación y Contabilidad, 30 (110), pp. 1137-1166.

(accessed August 2019)

Grima, P., Marco-Almagro, L., Santiago, S., Tort-Martorell, X.
 Six Sigma: hints from practice to overcome difficulties
 (2014) Total Quality Management & Business Excellence, 25 (3–4), pp. 198-208.

Nos. (accessed 27 July 2018)

- Gutierrez, H., de la Vara, R.
 (2009) Control Estadístico de la calidad y Seis Sigma,
 2nd ed., McGraw Hill (accessed August 2019)
- Helcio, R., João, G., Costa, P., Vendrametto, O., Abraham, R., Morais, M., Parizi, C., Brejão, A.

Improving service quality in public transportation in Brazil: how bus companies are simplifying quality management systems and strategic planning to increase service level?

(2015) IFIP International Conference on Advances in Production Management Systems,

(accessed August 2019)

• Hensher, D.

Erratum to: customer service quality and benchmarking in public transport contracts

(2015) International Journal of Quality Innovation, 1 (7), p. 4. (accessed 26 August 2020)

• Idris, F., Naqshbandi, M.M.

Exploring competitive priorities in the service sector: evidence from India (2019) *International Journal of Quality and Service Sciences*, 11 (2), pp. 167-186.

Emerald Publishing Limited, (accessed 26 August 2020)

Klefsjö, B., Wiklund, H., Edgeman, R.
 Six Sigma seen as a methodology for total quality management

(2001) Measuring Business Excellence, 5 (1), pp. 31-35. (accessed July 2019)

• Lall, V., Gupta, A.

A tool based framework for applying Six Sigma methodology to services and transactional data

(2010) International Journal of Productivity and Quality Management, 5 (4). (accessed July 2019)

• Larrea, A.

(1991) Calidad del Servicio Del Marketing a la Estrategia, pp. 20-24. Ediciones Diaz de Santos (accessed January 2018)

• Lin, L-C., Li, T-S.

An integrated framework for supply chain performance measurement using six-sigma metrics

(2010) Software Quality Journal, 18 (3), pp. 387-406.

• Meng, Q., Liu, X., Shi, J.

Comparing the services and quality of private and public clinics in rural China

(2000) Health Policy and Planning, 15 (4), pp. 349-356. (accessed July 2019)

Morales, M., Calderón-Moncloa, L.

Measuring executive education service quality: a construct validity study in Latin America

(2008) Latin American Business Review, 8 (4), pp. 1-37. (accessed July 2019)

• Pereira, G., De Aquino, T.

The potential for organizational learning and management quality: a multicase study on Brazilian public organizations

(2005) Latin American Business Review, 6 (2), pp. 87-108. (accessed August 2019)

- Raisinghani, M., Ette, H., Pierce, R., Cannon, G., Daripaly, P.
 Six Sigma: concepts, tools, and applications
 (2005) Industrial Management & Data Systems, 105 (4), pp. 491-505.
 (accessed July 2019)
- Shojaie, A.A., Raissi, S., Dogahe, R.A.

Impact analysis of TQM's hard aspects on sigma level in electronics and telecommunication production process

(2016) International Journal of Productivity and Quality Management, 18 (4), pp. 425-439.

Inderscience Publishers, (accessed 26 August 2020)

- Singhtaun, C., Hattayanon, R.
 An application of quality cost analysis as a tool for quality management (2017) International Journal of Productivity and Quality Management, 22 (2), pp. 205-222.
- Sreedharan, V.R., Trehan, R., Dhanya, M., Arunprasad, P.
 Lean Six Sigma implementation in an OEM: a case-based approach (2020) International Journal of Process Management and Benchmarking, 10 (2), p. 147.
 (accessed 4 May 2020)
- Taleb, M., Ramli, R., Khalid, R.
 Measuring the efficiency of community colleges using super efficiency approach for the case of non-discretionary factors in data envelopment analysis with sensitivity analysis

 (2019) International Journal of Process Management and Benchmarking, 9 (2), p. 149.
 (accessed 4 May 2020)
- Vergara, J., Quezada, V., Avial, F.
 Perceived quality and determining the satisfaction in users of hospital services in Cartagena, Colombia
 (2019) Revista de Métodos Cuantitativos para la Economía y la Empresa, 26, pp. 203-219.
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