

RANKING OF A PUBLIC SECTOR PASSENGER BUS TRANSPORT COMPANY USING PRINCIPAL COMPONENT ANALYSIS: A CASE STUDY

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Abstract

The public sector passenger transport has been crucial sector for transportation of people in developing countries like India. But there is less emphasis on customer expectations in this sector. This study aims at evaluating the customer expectations of this service sector in India. A questionnaire containing eighteen quality characteristics was administered to various customers of three bus depots of one division of a state road transport undertaking (SRTU) in south India. Two quality dimensions, viz. customer expectations and company responsibilities, are identified based on principal component analysis. The findings not only would help prioritise different parameters but also provide guidelines to managers to focus on or to improve. Finally three depots have been ranked.

Keywords: Performance measurement, madm, fuzzy topsis; fuzzy ahp, anova.

REFERENCES

- Alberto, P. (2000). Vendor selection using principal component analysis, *The Journal of Supply Chain Management*, pp. 63-69.
- ASTRU (nd.). Association of state road transport undertakings, India. Retrieved from www.astru.org.
- Changa, Y-H. and Chen, F-Y. (2007). Relational benefits, switching barriers and loyalty: A study of airline customers in Taiwan, *Journal of Air Transport Management* Vol. 13, pp. 104-109.
- Chenga, J.-H., Chen, F.-Y. and Chang, Y.-H. (2008). Airline relationship quality: An examination of Taiwanese passengers, *Tourism Management*, Vol. 29, pp. 487-499.
- Chidambaranathan, S., Muralidaran, C. and Deshmukh, S.G. (2009). Analyzing the interaction of critical factors of supplier development using ISM – an empirical study, *International Journal of Advanced Manufacturing Technology*, Vol. 43, pp. 1081-1093.
- Chin-Shan, L. (2007). Evaluating key resources and capabilities for liner shipping services. *Transport Reviews*, 27(3), pp. 285-310.

- Ching-Chiao, Y., Peter, B. Marlow, and Chin-Shan, L. (2009). Assessing resources, logistics service capabilities, innovation capabilities and the performance of container shipping services in Taiwan, *International Journal of Production Economics*, Vol. 122, pp. 4–20.
- Cuomo, M.T. (2000). *La customer satisfaction, Vantaggio competitivo e creazione di valore*, Padova: CEDAM.
- Eboli, L. and Mazzulla, G. (2007). Service quality attributes affecting customer satisfaction for Bus Transit, *Journal of Public Transportation*, Vol. 10 (1), pp. 21-34.
- Hair, J.F., Black, W.C., Babin, B.J., Anderson, R.E. and Tatham, R.L. (2006). *Multivariate data analysis*, sixth edition, Pearson Education, New Delhi.
- Jonathan, S. (2009). A tutorial on principal component analysis. Retrieved from www.sn1.salk.edu/~shlens/pca.pdf.
- Kannan, V.R. and Tan, K.C. (2002). Supplier selection and assessment, their impact on business performance, *Journal of Supply Chain Management*, Vol. 38, pp. 11-21.
- Kolanovic, I. (2008). Defining the port service quality using factor analysis, *Pomorstvo*, Vol. 22(2), pp. 83-297.
- Lai, W.-T. and Chen, C.-F. (2010). *Behavioural intentions of public transit passengers -The roles of service quality, perceived value, satisfaction and involvement*, Transport Policy, doi:10.1016/j.tranpol.2010.09.003.
- Lattin, J.M., Douglas, J.C. and Green, P.E. (2003). *Analyzing Multivariate Data*, Cengage Learning, New Delhi.
- Laura, M.C. and Jose, A.M.G. (2007). Measuring perceived service quality in urgent transport service, *Journal of Retailing and Consumer Services*, Vol. 14, pp. 60–72.
- Nunnally, J.C. (1978). *Psychometric Theory*, McGraw Hill, New York.
- Pantouvakis, A. (2010). The relative importance of service features in explaining customer satisfaction - A comparison of measurement models, *Managing Service Quality*, Vol. 20 (4), pp. 366-387.
- Rahaman, R.K. and Rahaman, Md.A. (2009). Service quality attributes affecting the satisfaction of passengers of a selective route in southwestern Bangladesh, *Theoretical and Empirical Researches in Urban Management*, Vol. 3(12), pp. 115-125.
- Yu, K.K. and Lee, H. R. (2011). Customer satisfaction using low cost carriers, *Tourism Management*, Vol. 32, pp. 235–243.
- Zoe, S.D. (2006). Customer satisfaction, loyalty and commitment in service organizations - some evidence from Greece, *Management Research News*, Vol. 29 (12), pp. 782-800.