Performance of Cluster Analysis for Consumer Segmentation: A Study with reference to Virudhunagar Junction of Southern Railway

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Abstract - Indian Railways (IR) is a mammoth Public enterprise. It is ideal for long distance travel and movement of bulk commodities. It brings together the diverse geographies and stands as a vivid model of national integration of the country. As the rail passengers are diverse in nature, they are expecting a host of service quality attributes of IR or Southern railway (SR). So, the IR/SR bears an onerous task of providing different categories of service quality attributes to the passengers and for which, the IR should be a profitable enterprise. The present study by applying cluster analysis strives to explore how many groups are there in the rail passengers in Virudhunagar Junction of Madurai division in Southern railway of IR.

Keywords: Madurai division Southern Railway, Indian Railway, Cluster analysis, Service quality.

1. INTRODUCTION

As compared to road transport, the IR has a number of intrinsic advantages. Therefore, the IR has a pride of place in the economic development of India. After globalization, rail transport faced intense competition from other modes of surface transport like passenger vans. So, in surface transport, the IR has to ponder over upgrading service, quality. Now, to remain competitive in the field, IR/SR has to concern about improving the service quality.

Service quality is a comparison of expectations with performance. From the viewpoint of business, service quality is an achievement in customer service. Customers form service expectations from past, recent experiences and advertisement. For instance in the case of rail journey, passengers compare perceived service with expected service in which if the former falls short of the latter, the passengers are disappointed; of course, the modern consumers expect a band of service quality attributes from the railways such as basic amenities, modern amenities (tech drivers) ticket looking facilities and service

operational activities like safe travel, speed of trains, punctuality of trains, and frequency of service. The measurement of these attributes of service quality depends on passengers' expectation in terms of the attributes of the rail service, they may receive and the Southern Railways' ability to offer this expected service. The present paper attempts to segments the passengers of Madurai division in Southern Railway with reference to Virudhunagar junction by performing cluster analysis.

2. LITERATURE REVIEW

Sheeba and Kumuthadevi (2013) [1] in their study applied factor analysis for exploring the factors that result in passenger satisfaction in train journey. They found the important factors that determined the passengers' satisfaction in the order of basic amenities, Cleanliness, safety, punctuality, health care service and railway staff behaviors.

Neelamegam and Murugan (2015) [2] in their study found that passengers in their ranking of service quality attributes of Southern railway accorded first rank to affordable train fare and last rank to catering service of the SR.

Neelamegam and Murugan (2016) [3] in their study examined passengers' kind of problem in online ticket booking. Found that the need for debit card and internet banking was most important problem in online booking.

Neelamegam (2018) [4] in his study evolved a 29 item multiple attribute scale compressed into four dimensions as the base to measure service quality in Madurai division of Southern Railway. His significance testing revealed there were difference between expectation and perception of passengers in terms of all the four dimensions(basic