OPTIMISATION OF FUEL CONSUMPTION BY TAGUCHI METHOD
IN LOGISTICS SYSTEMS

BENRAJESH. P¹ & JOHN RAJAN. A²

¹Research Scholar, Department of Mechanical and Production Engineering,
Sathyabama University, Chennai, India

²Professor, Department of Manufacturing Engineering, School of Mechanical Engineering (SMEC),
Vellore Institute of Technology, Vellore, India

ABSTRACT

Research studies on fuel consumption of logistics systems for developing countries is relatively less explored in par with developed countries. Day by day, the consumption of fossil fuels is increasing due to dense traffic, heavy cargo loads, evolving of e-retailing services, erratic drivers etc. This research work considers six key factors for analysis, with an intent of reducing fuel consumption of Logistics Service Providers (LSP). The data collected from logistics service providers, located in India through email; and then it is analysed using Taguchi Method, to find the high influencing factor on fuel consumption to the greater levels. The identified six factors are dead weight of vehicle, mileage per litre, percentage of fuel spent in idle time, span of distance covered, payload of vehicle and average time spent in traffic. The results are obtained based on the condition: smaller the better and it is validated by the LSP.

KEYWORDS: Fuel Consumption, Taguchi Method, Logistics Service Providers (LSP), Green Logistics & Sustainability

Received: Jan 08, 2019; Accepted: Jan 28, 2019; Published: Feb 05, 2019; Paper Id.: IJMPERDAPR20196