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New Perspectives on Enterprise Decision-Making Applying Artificial Intelligence Techniques

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Chapter 6
Effect of TPM and OEE on the Social Performance of Companies

Adrián Salvador Morales-García, José Roberto Díaz-Reza, and Jorge Luis García-Alcaraz

Abstract This chapter reports a model of structural equations that integrates three independent variables: Total productive maintenance, just in time and Overall equipment efficiency and the relationship they have with Social sustainability as a dependent variable. The four variables are related through six hypotheses that are validated with information gathered from 239 questionnaires answered by executives laboring at Mexican maquiladora industry. The partial least squares technique is used to statistically validate the relationships among variables. Findings indicate that Total predictive maintenance has a strong impact on Overall equipment efficiency and Just in time, and the variables that most influence Social sustainability are Total predictive maintenance and Just in time. It is concluded that Social sustainability can be obtained through proper use and maintenance of the machines and with timely fulfillment of production orders.

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