

MATHEMATICAL MODELLING AND SENSITIVITY ANALYSIS OF LEAN IMPLEMENTATION FACTORS FOR PERFORMANCE IMPROVEMENT OF INDIAN MANUFACTURING INDUSTRIES

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Abstract

To emerge as a leading manufacturing base for the world market a tough competition from global players is being faced by Indian manufacturing industries. Every organizations struggle for improved performance, since elevated performance intensity means superior competitiveness. In today's comprehensive market, there is a persistently mounting pressure to construct products more quickly, with more diversity, at lowest possible cost. In the end, those companies that meet the exceed customers demand will succeed by remaining competitive. Organizations are now facing intensive global competition. They are becoming increasingly aware of the importance of modern management philosophy like lean production in providing them with a competitive advantage in a free market system. Among the several quality management concepts that have been developed, the lean concept, as in lean manufacturing, lean production, etc. is one of the more wide-spread and successful attempts. Many manufacturing facilities have experienced the drastic changes and are in a process of undergoing physical and cultural transformation to adopt the concept of lean thinking. This paper presents an approximate generalized field database model for impact of lean implementation factors on organizational performance in Indian context. A diagnostic research instrument has been design to study the companies that have implemented lean production and mathematical model is developed