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**Title:** A Study of Practices for Integration of Sustainability with Innovation for Micro, Small and Medium Scale Enterprises: An Indian Manufacturing Perspective

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## **ABSTRACT**

The global integration of markets, rapid changes in technology and reduced lifecycles for product and technology have made the Micro Small and Medium Enterprises (MSMEs) to focus on considering innovation as an essential aspect to attain benefit in the direction of sustainable oriented innovation.

Innovation in present work mentions to technological innovation only. The widely used definition of technological innovation is that of Organization for Economic Cooperation and Development. Technological product innovation is the application of a product with enhanced performance characteristics in sustainability like as to give better services to the customer. Technological process innovation is the application of new or enhanced production or delivery methods which is sustainable. It can lead to changes in equipment, human resources, working methods or a combination of these.

The present study contributes to the empirical literature by identifying, consolidating and finding out the causal relationships between the critical factors that strengthen the integration of sustainability with innovation for Indian manufacturing MSMEs as these organizations consist of a significant portion of the output of the economy from the manufacturing sector.

The study is carried out in the framework of the economy of a developing country like India. Delhi NCR region is selected for the study as previous researches have focussed on the southern part of India.

To this end, a systematic review of the literature and the opinion of the experts were taken to extract the data. Hypotheses are formulated based on the review of literature. A conceptual model is prepared to test the relationship between the factors, using an integrated approach of literature review and experts opinion. This is followed by building of hypotheses considering the conceptual model.

The questionnaire approach is carried out to validate the data statistically. Statistical techniques like exploratory factor analysis and the confirmatory factor analysis are used

for validation of the factors/data obtained by using questionnaire approach. The outcome of the present study, after analyzing the data by factor analysis and refining of the data, is a set of definite, accurate and one dimensional set of factors that can be consequently applied in other circumstances or can be used to examine different theoretical models, driving in the direction of building of theory in Sustainable Oriented Innovation for Indian manufacturing MSMEs.

This is followed by finding out the causal relationships between the critical factors which strengthen the integration of sustainability with innovation for Indian manufacturing MSMEs using the structural equation modeling technique. Hypotheses built based on the conceptual model is tested statistically through SEM approach performed using AMOS version 21.

The results are examined along with managerial/practical implications of work. Finally, outcomes are derived, and limitations provided for future research.

*Keywords: Absorptive Capacity; Collaboration capability; Confirmatory Factor Analysis; Exploratory Factor Analysis; MSMEs; Structural Equation Modelling; Sustainability; Sustainable Open Innovation*