

The Productivity Analysis of Industrial Clusters in India

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Abstract

A cluster in a district consists of 100 or more registered MSME units which are engaged in manufacturing the same product as per ASICC 2000 (at 5 digit-level). There were 2443 clusters covering 321 products in registered MSME sector. These clusters had a share of 45.92% in total number of units, 34.58% in total employment, 36.12% in Original Value of Plant and Machinery, 33.64% in total Market Value of Fixed Assets and 19.01% in total Gross Output of registered MSME sectors. For inclusive growth and sustainable development most of the MSMEs has adopted the Cluster Development Approach. The objective is to Study the Correlation Coefficient Analysis, Technical Efficiency (θ), under Constant Returns to Scale, Variable Returns to Scale, Scale Efficiency, Peers, Peer Weights (λ_i), Peer counts, Input Slacks (S^-), Output Slacks (S^+), Input and Output Target of 25 State wise MSME Clusters (Decision Making Units -DMUs) in India. The methodology adopted is collection of data from Fourth All India Census of MSMEs and analyzing with Data Envelopment Analysis of Input Oriented Banker Charnes Cooper (BCC) Model by taking State wise no. of Clusters, no. of working enterprises in the clusters, no. of Employment, Market Value of Fixed Assets, Value of Plant and Machinery as inputs and Gross output as an output. The States like Haryana, Jammu and Kashmir, Punjab, Andaman and Nicobar Island, Tamil Nadu, Goa, Maharashtra and Assam are efficient where $\theta = 1$, Rank = 1, $S^- = 0$ and $S^+ = 0$. Others are $\theta < 1$ and $S > 0$ (Score < 1 and Rank = 11 to 25). The non-zero λ_i 's represents the weights for efficient clusters is peers to others clusters. The $S > 0$ obtained for 15 clusters (rank 11 to 25) reveals the excess no. of units in clusters (S^-), employment (S^-), excess physical value of fixed assets, excess value of plant and machinery and shortage in Gross output (S^+). However the Variable Returns to Scale (VRS) are increasing for 10 states, constant for 7 more states and with 8 states decrease returns to scale. To conclude, from the Productivity analysis the inefficient MSME clusters in the States should increase their turnover, or decrease in fixed assets value or value of plant and machinery, as decrease in no. of enterprises in the clusters and employment is practically not possible.