

A Preliminary Conceptual Scale to Discretize the Distributed Manufacturing Continuum

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Abstract : The distributed manufacturing methodology brings a new concept of decentralized manufacturing operations close to the proximity of end users. A preliminary scale, to measure distributed capacity and evaluate positioning of firms, is developed in this research. In the first part of the paper, a literature review has been performed which highlights the explorative nature of the studies conducted to present definitions and classifications due to novelty of this topic. From literature, five dimensions of distributed manufacturing development stages have been identified: localization, manufacturing technologies, customization and personalization, digitalization and democratization of design. Based on these determinants a conceptual scale is proposed to measure the status of distributed manufacturing of a generic firm. A multiple case study is then conducted in two steps to test the conceptual scale and to identify the corresponding level of distributed potential in each case study firm.

Keywords : distributed manufacturing, distributed capacity, localized production, ordinal scale

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