



MIT SCALE RESEARCH REPORT

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The Global SCALE Network allows faculty, researchers, students, and affiliated companies from all six centers around the world to pool their expertise and collaborate on projects that will create supply chain and logistics innovations with global applications.

This reprint is intended to communicate research results of innovative supply chain research completed by faculty, researchers, and students of the Global SCALE Network, thereby contributing to the greater public knowledge about supply chains.

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Benchmarking Manufacturing in Spain
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Benchmarking Manufacturing in Spain

Hernán Vázquez

EXECUTIVE SUMMARY

The permanent challenges of manufacturing companies to successfully compete in their industry sector in a worldwide market show us the importance of measuring and comparing our performance with our competitors. What you can measure, you will be able to improve, and what you can improve, will lead your company to develop a competitive advantage over your peers.

This benchmarking study is directed at measuring and evaluating the flexibility of manufacturing and understanding the impact of not developing mass customization capabilities to adapt to competition nowadays. Specifically, our objective is identifying how manufacturing companies in Spain act to be more flexible and offer customized solutions for their customers' needs.

This thesis is conceived within the framework of the Global Manufacturing Research Group (GMRG), a multi-national community of researchers dedicated to the study and improvement of manufacturing supply chains world-wide. Through systematic study and research throughout the world, the GMRG aims to improve manufacturing supply chains through the development of theory and dissemination of results. By sharing ideas, results, and concepts with research colleagues and manufacturing executives around the globe, the GMRG serves to strengthen the linkage between research and practice and is sponsored by and affiliated with the American Production and Inventory Control Society (APICS). The scope of this study is limited to certain manufacturing categories in Spain as listed below:

- Industrial and commercial machinery and computer equipment
- Electronic and other electrical equipment and components
- Manufacture of motor vehicles, trailers, and semi-trailers
- Food and kindred products
- Fabricated metal products, except machinery and transportation equipment

The operational part of the study involved data collection from a random sample of Spanish manufacturing companies. The methodology applied was based on conducting research in the form of a survey and then manage the resulting data by using SPSS software to apply statistical methods. From these analyses, linked with financial information of the companies, we could come up with answers and conclusions that enable us to evaluate and compare different companies' performance.

Benchmarking Manufacturing in Spain

The model objective was directed to analyze the predictive variables that can stimulate manufacturing companies to develop mass customization capabilities and then research possible connections with their financial performance. The predictive values were divided in two main groups as the following:

Organizational capabilities:

- Flexible process design
- Choice simplification
- Product space definition

Individual competencies:

- Relational attitude
- Broad business knowledge
- Mental flexibility
- Profound product knowledge

Based on the study it was concluded that there is relevant evidence that all these factors explain the level of variance in mass customization capability of the organizations among the industries selected to benchmark in Spain. Furthermore, the level of mass customization capability is related with financial measures like gross margin (GM) and return on assets (ROA). From the supply chain management point of view it is important to emphasize that there is no negative significant association between mass customization capabilities and inventory turnover. Another important conclusion arisen from the study is that organizational capabilities have a stronger relation with the development of mass customization capability than the individual competencies. This is a very important factor for Spain organizations to continue the development in the two areas but focus especially in organizational factors. This focus will expand the flexibility of the organization to improve standards responses to customers and reduce variability of performance. This fact will decrease the dependency on personalized activities and will increase the positive impact of a flexible corporate image of the organization.

Participating companies in the benchmarking study received an exhaustive customized report that portrays them in comparison to the other companies in the dataset.

The outcomes of this thesis highlight the importance of understanding the manufacturing indicators in order to take them into account in the managerial decision-making process. The improvement of these indicators will enable manufacturing companies to gain more leverage based on their own strengths to compete in the market. The study will provide them with the information about which areas they must put the focus on.