



Market priorities, manufacturing configuration, and business performance: an empirical analysis of the order-winners framework

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Abstract

This study carries out an empirical test of the order-winners framework in manufacturing organizations. Hill [Hill, T., 1985. *Manufacturing Strategy: The Strategic Management of the Manufacturing Function*, first ed. Macmillan, Basingstoke; Hill, T., 2000. *Manufacturing Strategy: Text and Cases*, second ed. Palgrave, Basingstoke] proposed the order-winners framework to help managers to improve understanding about markets and to develop a consistent manufacturing strategy. The framework defines ideal profiles of products and markets, and manufacturing and investment decisions that relate to alternative process choices. The study tests the hypothesis of a negative relationship between misfit to an ideal profile defined in the framework and business performance in domestic market share, return on sales, and return on investment in a survey of 183 manufacturers from 17 countries. Results found a significant negative relationship between misfit and domestic market share. The study contributes to operations management research by developing a methodology to measure fit as profile deviation in the context of manufacturing, and applying this methodology to the order-winners framework.

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1. Introduction

Manufacturing strategy formulation has been one of the core issues in operations management research over the last two decades. Several authors, e.g. Fine and Hax (1985), Platts and Gregory (1990), Slack (1994), and Prochno and Corrêa (1995), have proposed theoretical frameworks to link operations

management decisions to the corporate strategy. However, a major drawback with these frameworks has been the lack of empirical research to validate their approaches and the proposed relationships between competitive priorities and operations decisions (Swamidass et al., 2001). This has led to a situation in which no manufacturing strategy framework has received general acceptance in the literature (Berry et al., 1999).

This validation problem includes the order-winners framework. Hill (2000) proposed the order-winners

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framework to help managers to improve understanding of their markets and to "... prioritize the investments and developments to better support the needs (order-winning and qualifying criteria) of current and future markets" (p. 88). The framework assists in the selection of a coherent set of choices in manufacturing strategy, using a product profiling approach that compares market and manufacturing decisions across multiple dimensions (Voss, 1995; Bozarth and Berry, 1997). Ideal profiles specified in the framework include aspects of markets (ex. order-winner priorities), products (ex. product type), and manufacturing and investment (ex. level of capital investment). Each profile corresponds to one of the five process choices of project, jobbing, batch, line, and continuous processing. Despite its wide recognition and durability in the manufacturing strategy field, critical analysis of the order-winners framework has been restricted to Spring and Boaden's (1997) theoretical reappraisal. To the best of my knowledge, the only empirical support to date consists of case study applications in Berry et al. (1999) and Hill (2000).

In an attempt to fill this research gap, this study carries out an empirical test of the order-winners framework in manufacturing. Specifically, it tests the hypothesis of a negative relationship between business performance and a misfit to ideal profiles of products and markets, and manufacturing and investment defined in the framework. The analysis uses data from the third round of the International Manufacturing Strategy Survey (IMSS-III). The sample consists of 183 manufacturers of fabricated metal products, machinery, and equipment from 17 countries.

2. Background and hypothesis development

The concept of achieving fit between marketing and manufacturing decisions to support competitiveness has always been at the core of manufacturing strategy research (Smith and Reece, 1999). From the beginning, authors emphasized the need to link manufacturing decisions to the corporate strategy (Skinner, 1969; Hayes and Wheelwright, 1984) or to an explicit manufacturing task (Skinner, 1974; Schmenner, 1979; Miller, 1981). This indicates that manufacturing strategy fit involves two distinct but

interconnected assignments (Bozarth and McDermott, 1998; Smith and Reece, 1999). On one hand, external fit requires organizations to match operations capabilities with environment requirements including customer demands and corporate strategy priorities. On the other, internal fit requires organizations to improve consistency among operations decisions including product and manufacturing structure.

As with the conceptualization of external and internal fit [which was borrowed from organization and strategy studies such as Chandler (1962) and Miller (1992)], the analysis of fit in manufacturing strategy often incorporates concepts and procedures from the strategic management literature. A major example has been Venkatraman's (1989) framework for the analysis and measurement of fit in strategy research. This framework has been adopted in studies by Bozarth and Berry (1997) and Smith and Reece (1999), among others. Depending on the level of specificity of the theoretical relationship (i.e. precision in the functional form of fit) and on the anchoring of the fit relationship to some external criterion, Venkatraman defined six perspectives of fit including moderation, mediation, matching, gestalts, profile deviation, and covariation. Each of the six perspectives had a particular strategy proposition (specifying the effects of fit on performance), a specific number of variables in the fit equation, and appropriate methods for the measurement and test of fit in the organization context.

Fit as matching and fit as profile deviation appear to be the dominant approaches in manufacturing strategy. Fit as matching implies correspondence between strategy and structure. Under this perspective, misfit can be measured by the absolute difference between strategy and structure choices. Fit as profile deviation implies adherence by a business unit to an ideal strategy profile. Misfit will be measured by deviation from the ideal profile in an n -dimensional space (Venkatraman, 1989; Venkatraman and Prescott, 1990).

The matching approach has characterized several frameworks in manufacturing strategy. Cleveland et al. (1989) and Vickery (1991) proposed a theory of production competence, which was defined as the degree to which manufacturing supports the business strategy. They measured production competence by multiplying strengths and weaknesses in performance

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