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Complementarities between JIT purchasing practices: An economic analysis based on transaction costs

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Abstract

The objective of this paper is to analyse the complementarities and interrelationships between the different JIT purchasing practices which have extended in industrial markets in recent years. The incorporation of trust as an explicative element in a framework based on Transaction Costs Economics leads us to propose that the success of logistics-related JIT purchasing practices, which fundamentally transform the physical exchange process, depends on the implementation of additional practices which transform the way of governing and controlling the relationships and which support and rely on a co-operation climate. Empirical tests carried out over a sample of 148 Spanish auto components suppliers confirm this reasoning. © 2000 Elsevier Science B.V. All rights reserved.

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0. Introduction

During the last decade or more, industrial supply structures have undergone significant changes derived from an evolution from adversarial relationships to co-operative relationships based on the generation of trust [1–5]. This trend has given rise to concepts such as 'partnership sourcing', 'subcontracting' or, when special attention is paid to logistics issues, 'JIT purchasing'. The advantages of implementing JIT purchasing have been pointed out by several authors [6–9]. They tend to highlight the Japanese origin of such a way of managing the purchasing function and use comparisons between Western and Japanese plants as the basis of empirical studies.

Nevertheless, JIT purchasing encompasses various groups of practices, whose interrelationships have scarcely been studied from an economics point of view. It is possible to distinguish between operational or logistical practices, which imply new physical ways of carrying out the transactions, and complementary practices, which imply new ways of governing and controlling such transactions. Most of the latter practices, to a greater or lesser extent, require, facilitate or generate mutual adaptation and co-operation between supplier and buyer. Some other practices aim at establishing controls and safeguards to assure reliability and competence on the part of the supplier. An important question that arises is: Is it possible to successfully

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implement operational practices without implementating complementary practices?, or, in a different way: Are there, indeed, complementarities between the two groups of practices?

The distinction between operational and complementary practices, although not previously used in the literature, highlights the difference between implementing JIT delivery programmes with or without partnership sourcing arrangements. A number of works [2,10–12] report how suppliers are impaired when a partnering atmosphere does not accompany JIT programmes, that is, when purchasers try to reduce inventory without taking into account the whole JIT philosophy. The existence of complementarities between operational and complementary practices would provide evidence that this behaviour also prevents purchasers from realising many of the potential benefits associated with JIT purchasing.

In order to answer the questions above, the paper is structured as follows. Firstly, a framework fundamentally based on Transaction Costs Economics (TCE) and incorporating trust as an explicative variable is introduced. This framework, in addition to overcoming some criticisms of TCE, leads to the existence of a certain space between pure market and hierarchy for co-operative relationships. Subsequently, in Section 2, this framework is applied to JIT purchasing and two hypotheses about the interconnections between operational and complementary practices and their consequences are posed. In Section 3, the empirical methodology to test the hypotheses is commented upon and, in the following section, the analysis and results are presented and discussed. The paper ends in Section 5 with a brief exposition of the main conclusions.

1. Trust in a TCE framework

1.1. *Transaction cost economics: Principles, research and critics*

The first works which gave rise to TCE [13–15] pose the problem of the selection of the most suitable governance structure for transactions. In this preliminary literature, two extreme alternatives, the market and the hierarchy, are considered, and two assumptions about human nature are made: human agents are subject to bounded rationality and at least some of the agents are given to opportunism [16]. A firm will choose the governance structure which minimises the sum of production and transaction costs, and the analysis of the latter costs fundamentally comprises costs of selecting and searching trading partners, negotiating and writing contracts and monitoring and controlling the execution of such contracts.

TCE focuses on three variables which seem to play an essential role in the selection of the most efficient governance structure: the degree of transaction specificity, uncertainty, and the frequency with which transactions occur. These three dimensions are carefully examined to reach one of major propositions of the TCE theory: *vertical integration becomes the most efficient option insofar as transaction specificity, uncertainty and frequency increase* [14].

Although, in its origin, TCE focuses on the decision to make or buy, Williamson recognises the existence of intermediate modes of organisation [14], transactions in the middle range [15] or hybrids [17]. The TCE framework, initially concentrated on the study of vertical integration, starts to be applied to what Joskow [18] calls 'non-conventional' contractual relationships between buyers and suppliers. That is, relationships which, although not integrated within the organisation, are lasting, continuous and co-operative. At this point, Williamson [14] establishes some links between economics, organisational theory and contract law, and determines the contracts and governance forms most suitable for each type of transaction. The main conclusion is that *intermediate or relational governance structures are suitable for recurrent transactions with medium levels of specificity and uncertainty*.

Many authors have empirically tested the relevance of the Williamson's variables for the decision to vertically integrate. Most of them focus on repetitive transactions so that frequency is assumed rather than tested. The effect of specificity is studied in several articles [19–23], many of which mainly reveal the importance of human specificity. Uncertainty, which is closely related to human bounded