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Environmental hostility, strategic orientation and the importance of management accounting—an empirical analysis of new technology-based firms

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Abstract

This paper reports empirical analysis of two research propositions which arise from different variables from the contingency theory of management accounting. The approach uses data from a sample of 183 new technology-based firms (NTBFs) in Sweden. The contingency variables were considered under the headings of *environmental hostility* and *strategic orientation*. While we might have expected to see here some evidence of correlations between variables of environmental hostility–management accounting and between strategic orientation–management accounting, only a few variables are apparent for the sample available. We note that the importance of standard methods in management accounting (general, costing, budgeting, investment calculation) does not seen to be precipitated by the contingencies such as environmental hostility and strategic orientation. Previous research has identified technology as one of the most important contingency factors. However, our technology variables will not seem to have an impact on the importance of management accounting practices in the NTBFs. We also conclude that the correlation analysis indicates that earlier work experience and different types of management problems in small high-tech firms is of importance for development of the cost management approach.

Keywords: New technology-based firms; Management accounting; Environmental hostility; Strategic orientation

1. Introduction

In the conditions of intensified competition, the management accounting practices of a small firm, particularly a new technology-based firm (NTBF) needs to have objective information about the formation of the firm's performance. The focus of this paper is *on the importance of management accounting in small high-tech firms*. The theoretical framework adopted is that of the *contingency theory*. The approach uses data from a sample of 183 small NTBFs in Sweden, gathered from a postal questionnaire. The contingency theory suggests that there is no ideal form for management accounting systems. These contingencies (contextual variables) are usually classified as the *environment, organizational structure* and *technology* (Emmanuel et al., 1990). The concept technology is valuable because it is a simple yet rich way of absorbing the uncertainty stemming from a myriad of contextual factors (Macintosh, 1987). In this paper, we focus on the *Environment* (hostility: risk, change, competition behaviour, new products), *Strategic orientation* (innovative or conservative, price, follower-market leader, competitors) and the importance of management accounting practices. Also work experience and management problems related to management accounting (importance) is going to be analyzed.

A growing body of research has established levels between accounting and information systems and several contextual or contingency variables, such as environmental uncertainty, product competition, rate of technological change, managerial climate, differentiation and integration. The valuable point in these contingency variables have a great deal more influence on the design and use of accounting data information systems than previously thought (Macintosh, 1987). However, what is needed is a framework that is capable of both absorbing these factors and capturing them in a simple way.

In this study, the empirical part consists of small NTBFs, i.e. 'entrepreneurial' firms. According to

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Borch et al. (1999a,b), entrepreneurial firms will have strategies related to innovation and growth characterized by risk-taking. Innovation may be defined as the willingness to place strong emphasis on technological development (Slevin and Covin, 1994). The advantages of studying small business management from a *firm behaviour* perspective are that (Slevin and Covin, 1994): (i) firm behaviour, as strategy, structure and performance, are more clearly understood than when only studying characteristics of individual entrepreneurs (ii) firm behaviour is more easily measured than at the individual level and (iii) firm behaviour is more manageable. A firm-level behaviour can be managed by the creation of particular resources and strategies and may thus allow considerable managerial intervention.

This study makes a contribution to the existing management accounting practices and their importance for the NTBFs regarding environmental hostility and strategic orientation. There are a couple of environmental variables that have influenced high-technology firms. Together with the cost structure in the firm, we argue that they mainly determine the importance of management accounting practices in the firm. One limitation is that we are not going to analyze how (changes) the contextual variables have influenced management accounting practices in the NTBFs. We will only measure the relationship between the contextual variables and the importance of management accounting practices.

The aim of this study is to *find empirical patterns of management accounting practices (importance) according to hostile environments and strategic orientation in small NTBFs*. The analysis is based on a set of variables which are used in the correlation analysis to identify management accounting importance for the small high-tech firms. The paper is organized as follows: Section 2 draws on previous research to identify the variables used in the study and to create a theoretical framework. The method and sample is presented in Section 3. The data are based on 183 small NTBFs in Sweden in 1999. The correlation matrixes are presented in Section 4 and finally, Section 5 presents a discussion and further research.

2. Previous research and theoretical framework

2.1. Entrepreneurial firms, management and environment

Entrepreneurial orientation is often conceptualized as a latent construct comprising three dimensions: innovativeness, risk-taking and proactiveness. These three components of entrepreneurship are argued by Miller (1983) to comprise a basic, undimensional *strategic orientation*. Innovativeness involves seeking creative or unusual solutions to problems and needs. In entrepreneurship research and economic studies, innovativeness is often viewed as a surrogate measument for entrepreneurship (Miller and Friesen, 1982). The risk-taking dimension refers to the willingness of management to commit significant resources to opportunities in the face of uncertainty. Proactiveness is defined in terms of the firm's propensity, aggressively and proactively to compete with its rivals.

On the basis of this three-dimensional construct of entrepreneurial orientation, a firm's strategic posture can be established along a ranging from *conservative* to *entrepreneurial* (Covin and Slevin, 1989; Miller and Friesen, 1983). Conservative firms tend to be risk-adverse, non-innovative and reactive. Entrepreneurial firms tend to be risk-takers, innovative and proactive. The conservative–entrepreneurial dichtomy also shares similarities with some of the dichtomies developed in the NTBF literature. Findings demonstrate that small firms are in general expected to favor *differentiation strategies*, since they only rarely will be able to utilize economies of scale. Small firms may possess various bundles of resources that serve as the foundations for development. According to the resource-based view (Penrose, 1959), differences in resources should be utilized and lead to differences in sustainable competitive advantage.

Ackroyd (1995) identified 11 distinguishing characteristics of small high-technology firms, for example, lack of hierarchy and boundaries, high mobility including growth and replication and an impressive ability to respond quickly to technological and market developments. These firms are also very customer-oriented, and innovative: their growth is often constrained by skills shortage. Van der Auwera and Eysenbrandts (1989) compiled a set of specific advantages of small versus medium/large NTBF's in Belgium. Small NTBF's have a greater job flexibility and less hierarchy. The flow of information between management and production is faster and they have a better view over the innovation process. Small firms also have a direct relationship with suppliers and customers and they respond more rapidly to direct demand from abroad. Segers (1993) underlines that there is an increased emphasis on NTBFs (Rothwell, 1983, 1984; Oakey et al., 1988) and on strategic partnerships or alliances (Doz, 1988).

According to Borch et al. (1999a,b), entrepreneurial firms will have strategies related to innovation and growth characterized by risk-taking. Innovation may be defined as the willingness to place strong emphasis on technological development (Slevin and Covin, 1994). The advantages of studying entrepreneurship and small business management from a *firm behaviour* perspective are that (Slevin and Covin, 1994): (i) firm behaviour, as strategy, structure and performance, are more clearly understood than when only studying characteristics of individual entrepreneurs (ii) firm behaviour is more easily measured than at the individual level and (iii) firm behaviour is more manageable. A firm-level behaviour can be managed by the creation of particular resources and strategies and may thus allow considerable managerial intervention.