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# Transforming resources to improve performance of technology-based firms: A Taiwanese Empirical Study

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#### Abstract

This study analyzes how firms transform resources into performance, and proposes that dynamic capabilities serve as a link for transforming internal and external resources first into firm competitiveness, and then into financial performance. One hundred and ninety-six Taiwanese technology-based firms are adopted as a research sample. The resource-based view of the firm, social capital theory, and dynamic capabilities are integrated to formulate a comprehensive framework for explaining the performance variation of technological-based firms. Analytical results demonstrate that technological-based firms can transform their resources into profit via dynamic capabilities and competitiveness.

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#### 1. Introduction

This study investigates how technology-based firms transform resources into profit. According to the resource-based view of the firm (hereafter RBV), the key for firms in achieving and sustaining competitive advantage (and thus profit) is the ownership of valuable, rare, inimitable, and non-substitutable (VRIN) resources, preventing advantage from being replicated, imitated or replaced

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by competitors (Barney, 1986; Dierickx and Cool, 1989; Grant, 1991; Ray et al., 2004; Wernerfelt, 1984), and thus improving firm performance.

Whether VRIN resources guarantee profit for technology-based firms is a crucial question. Global giants such as IBM, Texas Instruments, and Philip, have pursued a resource-based strategy of accumulating technology assets, but apparently resources alone are not enough. In the present fast-changing environment, resources may be insufficient to sustain competitive advantage (Teece et al., 1997; Eisenhardt and Martin, 2000).

A further question is whether the conclusion of RBV is erroneous, and also whether transformation processes exist which are currently unknown but link resources and performance. This study proposed that firm resources must be value added and transformed into firm competitiveness, thereby increasing financial performance. In situations involving inappropriate or insufficient links, resources may not be correlated to performance.

Specifically, this study identified dynamic capabilities, namely the ability to integrate and reconfigure internal and external competences (Teece et al., 1997: 516), as well as supporting firm's willingness to cooperate, as the missing link between firm resources and profit. Thus, it attempts not to disconfirm RBV, but rather to improve it by integrating dynamic capabilities into the RBV theoretical concept.

To summarize, this study tries to identify the missing links between firm resources and firm performance by integrating RBV and dynamic capability studies. Taiwanese technology-based firms are taken as research subjects to empirically verify the proposed theoretical concept. This study has two objectives: first, to contribute to theoretical development through conceptual integration, and second, to provide practical implications for the strategic management of technology-based firms.

The balance of this article is organized as follows. The following section reviews the literature on RBV, dynamic capabilities, and relevant issues, and the conceptual framework and hypotheses of this study are developed accordingly. The third section then describes the research methodology, while the fourth section discusses the empirical results. Finally, research conclusions, limitations and suggestions are presented.

#### 2. Literature review, conceptual framework and research hypotheses

The development of RBV can be traced back to Penrose (1959). Penrose conceptualized firms as a bundle of heterogeneous resources, and sustained firm growth thus depends on firm resources, such as management capability and technological expertise. Wernerfelt (1984) is often considered the founder of modern RBV, having proposed the resource position barrier concept in which scholars began to consider differentiated firm resources as sources of sustainable competitive advantage. Through the efforts of Rumelt (1984), Barney (1986), Dierickx and Cool (1989), and Grant (1991), RBV has become a key research perspective in the field of strategy. The core competence developed by Prahalad and Hamel (1990), and the competence-based competitive strategy (Heene and Sanchez, 1997) resemble RBV conceptually.

RBV holds that the sustained accumulation of resources is a better strategy than continuously adjusting firm operating categories to match environmental changes. Firms should also formulate their competitive strategies based on their distinctive resources. Therefore, firms with distinctive resources can continue surviving and developing due to competitive advantage, regardless of external environmental changes. However, core resources must include VRIN attributes (valuable, rare, inimitable, and non-substitutable) (Eisenhardt and Martin, 2000). Specifically, core resources should be tacit and complex (Schoemaker, 1990), so that they cannot be imitated

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