

Is synergy always good? Clarifying the effect of innovation capital and customer capital on firm performance in two contexts

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Abstract

The resource-based view (RBV) posits that a firm can leverage the effect of existing capital on firm performance via capital configuration, complementarity, and integration, but little empirical research has addressed these issues. This study investigates the effects of innovation capital and customer capital on firm performance, whether their complementary interactions are important determinants of relative firm performance within the industry, and whether these effects considerably differ significantly between high- and low-technology manufacturing firms. Based on data collected from 312 high-technology manufacturing firms and 204 low-technology manufacturing firms in the Taiwanese manufacturing industry, the results of SEM analyses demonstrate that the main effects of both innovation and customer capital significantly and positively impact firm performance. The analytical results demonstrate that: (1) a significant interaction effect only exists in the high-technology manufacturing firms; (2) the main effect of customer capital is lower among high-technology manufacturing firms; (3) the main effect of innovation capital is the same for both high- and low-technology manufacturing firms. Additionally, this investigation also discusses the limitations of the current research, future research directions, and the theoretical and practical implications of the empirical analysis.

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1. Introduction

How a business achieves and maintains a superior competitive position is a key issue in management research (Day, 1994). Consider Apple Computers, the PC industry leader in design and technology, which designed the iPod and iMac, both of which *Fortune* ranks among the 25 best products in the world (Bonamici et al., 2004; Lewis, 2004). Apple products are successful because the company emphasizes both product innovation and customer value (Daghfous and White, 1994; March, 1994). Especially, Apple banks heavily on its innovativeness and quality customer service, which have brought Apple numerous business opportunities. Additionally, Coca-Cola, a low-technology manufacturing firm, also continuously emphasizes the importance of customers and is heavily reliant upon customer capital to establish a leading market position. As a result, Coca-Cola

enjoys better global brand recognition and produces “The Best Known Product in the World” (Allen, 1994). It is seen from the examples of these two successful companies that innovation and customer value are key factors in achieving excellent firm performance and thus market success.

A review of the literature reveals that research on innovation and customer value appears in the literature not only of marketing (e.g., Dutta et al., 1999; Luo et al., 2004; Rosen et al., 1998) but also of economics (e.g., Chauvin and Hirschey, 1993; Vivero, 2002; Zeng, 2001) and strategic management (e.g., Day, 1994; Kessler and Chakrabarti, 1996; Song et al., 2005). The extant literature suggests that superior firm performance can derive from uniqueness of resources (e.g., Barney, 1991; Kor and Mahoney, 2000), reconfiguration and integration of existing resources (e.g., Barney, 2002; Ray et al., 2004), and/or from the ability to respond appropriately to the surrounding industrial environment (e.g., Miller and Shamsie, 1996; Mintzberg, 1987). Furthermore, the resource-based view (RBV) suggests that a firm must develop internal and

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external resources to establish a competitive advantage and build a competitive niche (Barney, 1995). The relationships between resources (or capital) and firm performance have attracted considerable research interest, but relatively little is known regarding who some firms successfully use their resources (or capital) while others do not (Tena et al., 2001; Tseng and Goo, 2005).

This study contributes to the literature by focusing on two neglected issues: (1) the impact of the interaction and main effects between innovation capital and customer capital on firm performance and (2) the differential impacts of innovation capital and customer capital and their interaction in high- vs. low-technology manufacturing industries. The former addresses whether complementary capitals have synergistic effects, while the latter specifies industry characteristics that can be expected to produce both main and synergistic effects. Specifically, this study examines the relationships of innovation capital and customer capital with firm performance, and their interaction in two industries, namely the high- and low-technology manufacturing industries.

The high-technology manufacturing industry has been characterized as more highly complex, information intensive, turbulent and uncertain than the low-technology manufacturing industry. This study concerns with the different characteristic of the high- vs. low-technology manufacturing industry has their specific consequences for innovation approach (greater innovation in the high-technology manufacturing industry accompanied by increased performance), and customer approach (gathering and reacting to information being more critical in high-technology markets in which more information is available and product cycle time can be reduced). Surprisingly, there has been little research empirically testing whether, for example, the performance impact of innovation capital is greater in the high-technology manufacturing industry than in the low-technology manufacturing industry. This study addresses these issues by examining the following research question: Is performance differentially affected by each capital separately (the innovation or customer capital main effects) and/or by their joint presence (the interaction between these two types of capital), depending on different industries.

To summarize, this study has three parts. The study begins by reviewing the proposed framework and research hypotheses. The study describes the research design and discusses the research sample and key construct measures to be used. Finally, the findings are reported and the study concludes by discussing their practical and theoretical implications.

2. Literature review and hypotheses

The following sections develop six hypotheses that, as a set, specify different relationships of innovation and customer capital with firm performance, as well as their interactions. Differences are hypothesized to be engendered

by high/low-technology manufacturing industry. This investigation adopts Barney's (1991) RBV of innovation capital and customer capital as the source of superior firm performance. Fig. 1 summarizes the model hypotheses.

2.1. Resource-based theory

RBV posits that firms possessing valuable resources have a greater possibility of achieving superior performance. These resources are valuable when they enable a firm to develop and implement strategies and perform activities by organizing and coordinating the productive services of the various capital to improve efficiency and effectiveness beyond the levels that would have been achieved if these resources had not been used to develop and implement these strategies (Barney, 1991).

In addition, from a theoretical framework perspective, RBV is an important topic in journals on technology innovation management (Galende, 2006). For instance, an earlier paper by Galbreath (2005) discusses a similar topic, which points out the importance of RBV of the firm and examines resource effects on firm success based on RBV. In another study, Hauknes (1999, p. 61) also points out the importance of the RBV perspective for understanding innovation. Furthermore, the results from the study of Hult and Ketchen (2001) suggest that a fruitful avenue for future RBV research would be to study the interactions between and among resources and their impact on firm success (cf. Galbreath, 2005).

2.2. Innovation capital and firm performance

Innovation capital is an important research topic in technology innovation management academic journals (e.g., Galende, 2006; LöLlfsten and LindeloöLf, 2005). For example, Galende (2006) points out that innovative capability is important for a firm's intangible capability. In addition, successful technological innovation mostly

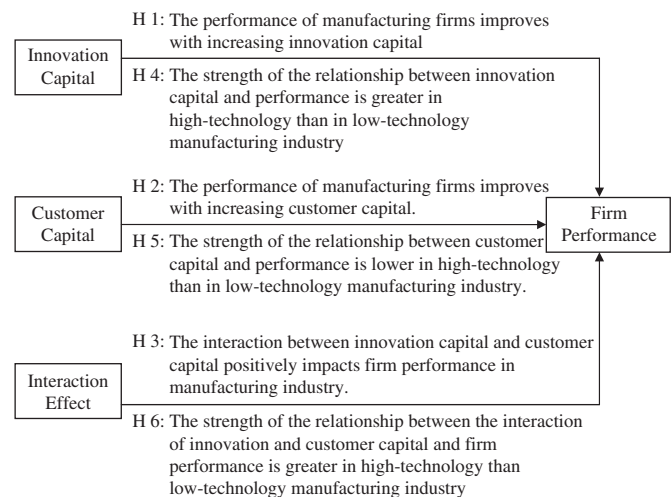


Fig. 1. Theoretical model of innovation capital and customer capital complementarity in the high- vs. low-technology manufacturing industry.

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