



Performance analysis of NTBFs in knowledge-intensive industries: Evidence from the human health sector[☆]



R.M. Yagüe-Perales^{a,*}, I. March-Chorda^b

^a Department of Applied Economics, Avda. Tarongers s/n, University of Valencia, Valencia, Spain

^b Department of Business Administration, Avda. Tarongers s/n, University of Valencia, Valencia, Spain

ARTICLE INFO

Article history:

Received 1 July 2012

Received in revised form 1 November 2012

Accepted 1 January 2013

Available online 6 March 2013

Keywords:

Performance
Biotechnology
Firms
Innovation

ABSTRACT

This study aims to shed some light on the differences in performance between New Technology-Based Firms (NTBFs) and others in a knowledge intensive industry, in this case the Human Health (HH) sector. With that purpose in mind, this work involves applying a new model for performance assessment to a representative sample of firms pertaining to the Human Health sector in the Valencia region of Spain. Application of several statistical techniques confirms the presence of an NTBF effect which ascribes a more favorable performance profile to the NTBF group. The analysis also reveals significant disparities at the territorial level between the core of the region and the rest. The Biomedicine branch appears to be a good business opportunity for investors and entrepreneurs but the differences in performance with the other two sectors are not statistically significant.

© 2013 Elsevier Inc. All rights reserved.

1. Introduction

Nowadays, entrepreneurial spirit and the ability to innovate arise as key assets in any knowledge-intensive industry, in turn becoming major factors in the definitive consolidation of so-called new economy or new productive models. These models are, by and large, welcome all over the world but especially in Southern European countries like Spain. To make significant progress in knowledge-intensive industries, these countries need to create, in a relatively short time span, thousands of new companies. This major challenge demands an enhancement in entrepreneurial spirit among young and talented people, including researchers, and training them in the tools and skills required to create and lead new innovative firms, or New Technology-Based Firms (NTBFs). Innovativeness, recent foundation, technology orientation and high growth potential are typical features of these companies. The emergence of these new ventures turns out to be of primary concern and a key requirement in the gradual renewal of the economic base in many European regions.

Within this context, learning as much as possible about the performance and expectations of the different types of firms operating in knowledge-intensive industries is particularly timely and relevant.

[☆] The authors thank two anonymous referees and the editors for helpful comments. All errors and omissions are the responsibility of the authors. The authors also thank their colleagues, Domingo Ribeiro and Laura Perez, for their valuable comments and suggestions. The authors are grateful to the University of Valencia for providing access to the SABI database from which the raw empirical data stem. Their thanks also go to Joshua Bailey for proofreading and editing assistance.

* Corresponding author.

E-mail addresses: yague@uv.es (R.M. Yagüe-Perales), isidre.march@uv.es (I. March-Chorda).

Here lies precisely the main purpose of this study: to delve into performance indicators of the New Technology-Based Firms, which literature and many experts claim is the most suitable category of companies to operate in knowledge-intensive sectors.

The actual intention of this study is to contribute to the existing literature by gathering new findings about the performance differences of NTBFs as compared with other firms. This study wishes to throw light on the performance areas where these differences are either likely or unlikely to be present. Consequently, the overall purpose is more than to solely determine the profile of NTBFs, already put forward in earlier research. Only recently the literature starts to pay attention to performance analysis in NTBFs with some examples of empirically-based studies addressing performance-related issues in this category of firms.

This study also addresses the issue of possible performance differences due to two factors; first, the firm's location in either core or peripheral territories; and second, its membership in different subsectors within the same knowledge-intensive industry.

Up to now most studies dealing with NTBFs focus on differences between NTBFs and other firms pertaining to non-intensive R&D sectors. As a consequence, some studies targeting knowledge industries take for granted that all the companies are, by definition, NTBFs. On the contrary, this study contests that assertion and goes one step further by opening up the possibility of discerning performance differences within industries intensive in R&D activities: the so-called knowledge-intensive industries. If these differences do emerge, these findings would form the basis of a theoretical contribution to the emerging literature surrounding NTBFs.

Firms operating in knowledge-intensive industries distinguish themselves on the basis of several traits, including their size, their

R&D intensity and their innovative capacity. In short, only those relatively recent firms, which are small in size and endowed with a distinctive innovative capacity, fall into the NTBF category. Many firms operating in knowledge-intensive industries are simply technology-users with low, if any, innovative capacity. Consequently, they fall outside this definition and become non-NTBFs.

This study contains empirical fieldwork in one country, Spain, in a single knowledge-intensive industry, the Human Health sector. Most Spanish companies pertaining to this industry simply provide specialized services or tailored products to other firms while their investment in R&D activities and their innovative capacity remain low. As a result, the NTBFs in this industry and in many other knowledge-based industries represent just a portion of the overall entrepreneurial population. The purpose of this study is to discriminate between the behavior and performance of true NTBFs and others, which are mostly technology-user service-oriented firms.

At this point, the study's main research questions emerge. Does the nature of the NTBF matter to performance in knowledge-intensive industries? What traits do NTBFs share in R&D intensive industries? Which subsectors in the Human Health industry hold the best chances for growth, hence becoming attractive to investors and entrepreneurs? Does the location in the region's core territory matter in terms of the performance of the firms operating in the Human Health industry?

The study suggests a performance analysis model whose conception involves a broad view which centers on quantitative and objective measures. The accounting reports that firms submit on a compulsory basis to the Spanish Business Register provide the relevant data, entailing 10 original variables and making up 3 axes. This study is in search of those economic performance variables with a differentiated behavior, in a typical knowledge-intensive sector: the Human Health industry.

2. NTBFs and performance assessment

This conceptual and theoretical section comprises two parts. The first one recalls some important studies of performance that deal with strategy approach, while the second refers to the concept and features of New Technology-Based Firms. The study's model emerges as an outcome of this section.

Previous studies mostly rely on ROA as a measure of performance, despite this measure suffering from some conceptual disadvantages, including the inability to measure cash flows, and the tendency to quote asset values at historical cost rather than their true replacement value. Hawawini, Subramanian, and Verdin (2003) propose two value-based measures of firm performance as an alternative to the accounting-based ROA: 1) Economic Profit per Dollar of Capital Employed; and 2) Total Market Value per Dollar of Capital Employed, where Capital Employed is the sum of equity capital and debt capital.

Most of the currently prevailing systems of performance appraisal rely on objective measures of performance, which use the financial indicators that annual accounting reports contain.

According to Signorini (1994), the problems with ROI and productivity are no more serious than in other contexts where accounting data provide the main source of information.

This study is consistent with the literature in performance assessments that depends on data – obviously with a bias towards quantitative measures – which exist in official databases such as the FTC Line of Business data (Garcés-Ayerbe, Rivera-Torres, & Murillo-Luna, 2012; Nissan, Galindo, & Méndez Picazo, 2012; Rumelt, 1991; Schmalensee, 1985) and the Compustat Business Segment Reports (Brush, Bromiley, & Hendrickx, 1999; Hackett & Wang, 2012; Mauri & Michaels, 1998; McGahan & Porter, 1997; Sánchez-Franco, Buitrago-Esquinas, & Yñiguez, 2012). Data in the current study comes from the Spanish SABI database, which is fully representative of the whole population of Spanish firms. Table 1 summarizes the

empirical framework that underpins the most prominent performance studies of firms and industry.

Here the research design and interest differ from those in the field of Strategy, which are focused on measuring factors influencing firm performance. However, with the basic aim of comparing a particular type of firm (NTBFs) with other firms (non-NTBFs), this study is consistent with the performance literature in several ways. First, the pursuit of differences between NTBFs and non-NTBFs relates to the firm's effect taken from the literature on performance assessment. Second, this study also seeks to identify differences between subsectors, a purpose that is to some extent similar to the industry effect in the studies by Schmalensee (1985) and later authors.

In addition, this study remains close to the most widespread research approaches regarding firm's performance, the resource-based view, the knowledge-based theory, and the dynamic capability perspective. For these approaches, proper identification and understanding of the resources and capabilities is crucial in enabling firms to grow.

In this study, only variables from balance sheet annual reports constitute the performance assessment model. All of them are financial, objective and quantitative measures, and hence suffer from the standard limitations associated with accounting reports. This model fits well with most empirical studies assessing divergence in company performance where data comes from official databases always with a bias towards quantitative measures. Furthermore, the model stems from the most representative studies dealing with performance assessment in Spain (Castro, García, & Perez, 1998; López Díaz, 2000; Prado, 1999; as well as publications from the Bank of Spain).

Turning attention towards New Technology-Based Firms, not all firms that operate in emerging industries fall into the NTBF category.

Table 1
Performance studies.

Author	Sample	Method
Rumelt (1991)	FTC data base Period: 1974–1977 Manufacturing firms N = 588 corporations	Random effects VCA ANOVA
Roquebert, Phillips, and Westfall (1996)	Compustat Period: 1985–1991 Manufacturing firms N = 4138 corporations	Random effects VCA
McGahan and Porter (1997)	Compustat Period: 1981–1994 N = 7003 corporations	Random effects VCA Sequential ANOVA
Brush et al. (1999)	Compustat Period: 1986–1995 N = 708 corporations	Two-stage least squares F-test
Mauri and Michaels (1998)	Compustat Period: 1978–1992 N = 264 companies	VCA using maximum likelihood method
Chang and Hong (2002)	KIS Korean data base Period: 1985–1996 N = 1666 companies	VCA REML: Restricted maximum likelihood
Hawawini et al. (2003)	Compustat Period: 1987–1996 N = 562 firms	VCA Random effects ANOVA
Spanos and Lioukas (2001)	147 surveys to CEOs Greek firms	Qualitative data Confirmatory factor analysis
Galan and Vecino (1997)	Industrial firms from one specific Spanish region N = 1642 firms	ANOVA
Camisón (2001)	401 industrial firms from one Spanish region 1999	Multiple regression method
This model	SABI data base. Human health sector Up to 2009	Factorial analysis ANOVA analysis

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات