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«Achieving and Sustaining Competitive Advantage»

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ΠΑΝΕΠΙΣΤΗΜΙΟ ΑΙΓΑΙΟΥ
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Διπλωματική Εργασία με Θέμα

«Ανάπτυξη και Διατήρηση Ανταγωνιστικού Πλεονεκτήματος»

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Abstract

The topic under research is "Achieving and Sustaining Competitive Advantage". Competitive advantage is the implementation of a value creating strategy that is not simultaneously being implemented by any current or possible competitors (Barney, 1991). In order to gain an enlightening view of Competitive Advantage a research using computational linguistics has been conducted.

The aim of this study is to investigate the two basic theories that are extensively researched within the existing literature about competitive advantage: Porter's theory and the Resource-Based Theory (RBT). The research objectives have been twofold: first, to define the intellectual core of the RBT discipline and Porter's theory, and, secondly, to identify the diffusion of RBT and Porter's Theory within the academic and practitioner literature during the period from 1990 through 2009.

The findings suggest that four main research areas are identified within the RBT: knowledge-based view, strategic alliances, dynamic capabilities and resource-based view framework. The assessment of diffusion shows that the resource-based theory has been particularly developed on the academic field, while the results concerning Porter's theory shows a strong connection among the practitioner-field. Furthermore, a quite interesting result that came up is a complementarity among the RBT and Porter's theory.

Σύνοψη

Η παρούσα διπλωματική εργασία έχει ως θέμα την «Διατήρηση και Ανάπτυξη Ανταγωνιστικού Πλεονεκτήματος». Ως ανταγωνιστικό πλεονέκτημα μπορεί να οριστεί η εφαρμογή μιας στρατηγικής αξίας η οποία δεν εφαρμόζεται ταυτόχρονα από τρέχοντες ή πιθανούς ανταγωνιστές (Barney, 1991). Προκειμένου να δοθεί μια κατατοπιστική άποψη σχετικά με το Ανταγωνιστικό Πλεονέκτημα, η έρευνα βασίστηκε στη μέθοδο της Υπολογιστικής Γλωσσολογίας.

Σκοπός της μελέτης είναι να ερευνηθούν δύο βασικές θεωρίες που αφορούν στο ανταγωνιστικό πλεονέκτημα και αναλύονται εκτενώς παρακάτω: Η θεωρία του Porter και η θεωρία των Πόρων & Ικανοτήτων. Πρώτον, προσδιορίζονται ο εννοιολογικός πυρήνας των δύο θεωριών και στη συνέχεια ερευνάται η εξέλιξη τους, μέσα από το επίπεδο διάχυσης που παρουσιάζουν τόσο σε ακαδημαϊκό επίπεδο αλλά και όσον αφορά τις οργανωσιακές πρακτικές, την περίοδο 1990-2009.

Τα αποτελέσματα δείχνουν τέσσερις κύριους τομείς έρευνας που εμφανίζονται στη θεωρία των Πόρων & Ικανοτήτων: η θεωρία της γνώσης, οι ικανότητες, οι στρατηγικές συμμαχίας και τέλος η δομή που βασίζεται στον πόρο. Η αξιολόγηση της διάχυσης δείχνει ότι η θεωρία των Πόρων & Ικανοτήτων έχει κατά κύριο λόγο αναπτυχθεί σε θεωρητικό επίπεδο, σε αντίθεση με την θεωρία του Porter που τα αποτελέσματα έ ότι σχετίζεται περισσότερο με τις οργανωσιακές πρακτικές. Επιπλέον τα αποτελέσματα καταδεικνύουν την ύπαρξη συμπληρωματικότητας μεταξύ των δύο θεωριών.

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Chapter 1 - Introduction

1.1 Background of the study

In the recent years, the field of strategic management seems to have undergone a shift in focus concerning the sources of sustainable competitive advantage. Porter's theory has been the main theoretical framework about competitive advantage. This theory suggests that a firm should be viewed as an entity of strategic activities trying to adapt to the industry environment by searching an attractive position within the market (Porter, 1985). Furthermore, Porter stated that the entire industry structure has a critical effect on the firm's abilities to generate and sustain competitive advantage.

During the last years, the resource based perspective appears to move the attention into the firm's capitals and suggests that performance is directly related to the unique assets owned and controlled by the firm (Spanos and Lioukas, 2001).

A large number of researches have tried to compare and contrast different premises highlighting market power types of rents, including the abovementioned Porter's framework. Moreover, another stream of research attempts to empirically decompose performance differences amongst firms and therefore examine the relative impact of industry against firm's resources and capabilities. Spanos and Lioukas (2001), following the above stream, proposed a composite model which elaborates upon both perspectives. The above research combined with the research conducted by Acedo et al. (2006), which tries to identify the main trends within RBT and point out their diffusion among the management-oriented journals triggered the research objectives in the current study.

1.2 Research Objectives

The research objectives have been twofold: first, to define the intellectual core of the RBT discipline, and, secondly, to identify the diffusion of RBT and Porter's Theory within the academic and practitioner literature during the period from 1990 through 2009.

1.3 Research Questions

The study consists of three research questions:

1. Which are the key phrases that define the RBT and Porter's theory?

2. Which are the research areas that have emerged within RBT, and

3. What is the diffusion of RBT and Porter's literature within the Academic-oriented journals and the practitioner-oriented journals?

1.4 A brief description of the used Methodology

Using a quantitative approach, the research is going to be an empirical research. In order to get accurate answers computational linguistics methods are employed. For this purpose, four different corpora were constructed: the RBT literature corpus (and subcorpus), the Porter's theory literature corpus, the academic-oriented corpus and finally the practitioner-oriented corpus. The corpus of Porter contains two of his books relative to competitive advantage while the other three corpora consist only of the titles, abstracts and key words of articles that collected due to specific criteria such as publication year (1990-2009) and inclusion of particular words. The used methodology, the Analytic Techniques and Tools are extensively discussed in Chapter 3.

1.5 Research design

The study is divided in two main parts. The first part is the literature review that provides a solid theoretical background. The second parts consists the empirical research. The dissertation is structured in 6 chapters. Chapter one is the introduction of the study where the definition and significance of the problem are been presented. The related research questions and a brief method are also included. Chapter two includes a detailed literature review on the relative to the study issues. Chapter three includes a detailed analysis of the methodology that has been adopted. Chapter four is about the findings of the study. All the results have been extensively analyzed and displayed in this chapter. Chapter five is actually an overall summary of the findings and recommendations for further research. The full list of the references as well the appendices are at the end of the dissertation.

Chapter 2 – Literature Review

2.1 Introduction

In our time, an age of strong global competition, a discussion on how to develop a firm's competitiveness is crucial. Firms are trying to discover ways of earning superior profitability. In order to reach their goals and objectives, companies are determining different ways. Such a try is described by many scholars as strategy. But what exactly is strategy? Within the literature, there is a sort of confusion about the concept of strategy. Different authors are giving a variety of definitions. According to Schendel and Hatten (1972), "Strategy is the basic goals and objectives of the organization, the major programs of action chosen to reach these goals and objectives, and the major pattern of resource allocation used to relate the organization to its environment" (p.100).

A different perspective, which handles the notion of strategy as a response to external and internal forces that influence the company, is the following definition: "Strategy formulation and implementation include identifying, opportunities and threats in the organization's environment, evaluating the strengths and weaknesses of the organization, designing structures, defining roles, hiring appropriate people, and developing appropriate rewards to keep those people motivated to make contributions" (Argyris, 1985 cited in Hax and Majluf, 1988).

Moreover, Porter (1985) emphasizes that strategy is not about doing things better- this is the worry of operational effectiveness- strategy is about doing things in a different way. Therefore, the most important essential of strategy is making choices.

Strategic choices could be categorized into two basic groups. The one is the category which confronts the question of where to compete, while the second one is about dealing with the question of how to compete. The answers to these questions also identify the main areas of a firm's strategy: corporate strategy and business strategy. According to Grant (2008), corporate strategy is concerned with choosing which industries the firm should be engaged in and how it should position its resources in them. Such decisions need evaluation of the attractiveness of different industries from the view of their profit capabilities. On the business strategy level, the

company has to decide how to compete in a given industry and position itself among its competitors. Hence, this category of strategic choices is also known as competitive strategy.

Furthermore, Porter (1985) defines competitive strategy as: "The search for a favorable competitive position in an industry, the fundamental arena in which competition occurs. Competitive strategy aims to establish a profitable and sustainable position against the forces that determine industry competition (p.1)".

From all the above it is clear that within the business strategy level, strategy is faced as a main vehicle for achieving competitive advantage. Michael Porter has placed the search for competitive advantage as the main element in strategy. It is clear that, as competition has increased across all industries, only few industry environments can guarantee secure returns. This could make competitive advantage the most important way of creating high profitability.

At this point, an extensive discussion about the nature and the sources of competitive advantage is considered to be vital.

2.2 Theoretical domain of competitive advantage

In the late eighties, the meaning of the competitive advantage has been challenged. Day and Wensley (1988) stated that there is no common meaning for competitive advantage. However, in the existing literature many parallel definitions have been given. In an early definition, competitive advantage has been called the unique position that a company develops against its competitors (Hofer and Schendel, 1978 cited in O'donnel et al., 2002)**.** Barney (1991) defines competitive advantage as the implementation of a value creating strategy that is not simultaneously being implemented by any current or possible competitors. Furthermore, Grant (1998) defines competitive advantage as follows: "When two or more firms compete within the same market, one firm possesses a competitive advantage over its rivals when it earns (or has the potential to earn) a persistently higher rate of profit" (p.205).

Competitive advantage may not be presented in higher profitability: a firm may relinquish profits in favor of investment in market share, technology, and customer satisfaction or employee loyalty.

The scientific literature generally analyses through four basic views the sources of competitive advantage; the industrial organisation school, the resource-based view, the capability-based view and the knowledge-based view.

Within the Industrial Organization view, the origin of a firm's competitive advantage is distinguished in two different types of views. On the one side, there are scholars (for example Mason 1939) who support the so-called classical industrial organisation school. These scholars claim that, it is not possible for a firm to influence industry conditions or its own performance (Lado et al. 1992; Gadhoum 1998). Following the above context, the competitive advantage is based in *external sources*. These external sources can be determined by the characteristics of the environment such as the bargaining power of suppliers and buyers, the threat of new entrants, the threat of substitute products or services and finally the existing competition within the industry.

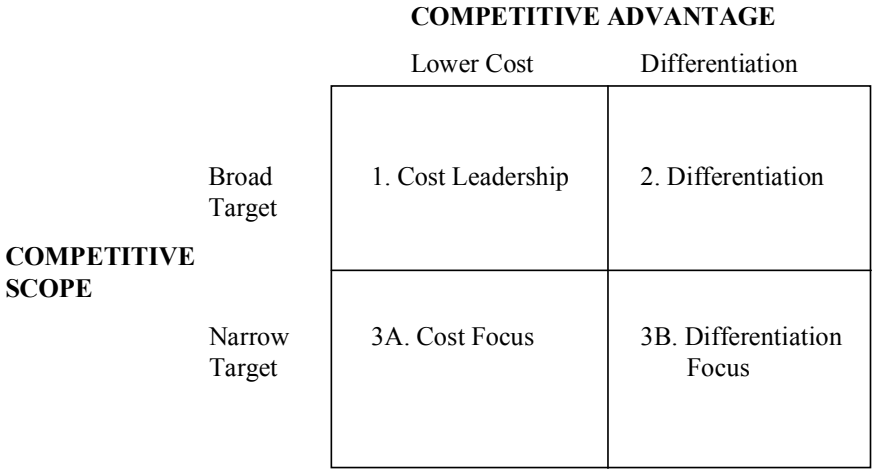
On the other side, there is a framework which recognises that firms could have certain influence on the relationship between industry structure and a firm's performance. Porter (1981) stated that a firm's strategic choice in relation to the competitive forces, includes positioning a firm in a way which the capabilities of the firm could fortify the firm against them.

On the contrary, the resource-based, the capability-based and the knowledge-based views support the term that competitive advantage is sourced by *internal sources*. In this context, a competitive advantage is generated by firms through the accumulation of inimitable resources, capabilities and knowledge. The resource-based view of the firm (RBV) attempts to understand the firm's resources and their repercussion on firm's performance as well as their connection with the threats and opportunities of the environment (Barney 1986; Mahoney et all 1992). The capability-based school maintains the idea that competitive advantage can be built on a firm's capabilities/competencies (Collis 1991; Day 1994). Finally, supporters of the knowledge-based view claim that a firm can create a competitive advantage only if it acquires more knowledge than its competitors (Inkpen 1998; Zack 1999).

2.3 Porter's Theory of Competitive Advantage

Porter's framework analysis on competitive advantage focuses on the environmental conditions that cause high levels of firm performance. More specifically Porter's model is based on the insight that a corporate strategy should meet the opportunities and threats in the organizations external environment. Competitive strategy should base on and understanding of industry structures and the way they change. This type of strategic research assumes an ''outside-in'' perspective of the theory on competitive advantage regarding market structure and its consequence on performance. Porter has categorized five competitive forces that shape every industry and every market. These forces that verify the intensity of competition and thus the profitability and attractiveness of an industry are; the competitive rivalry within the industry, the bargaining power of suppliers and customers, the threat of new entrants and the threat of substitutes. Two major assumptions are taken under consideration: First, it is believed that firms within an industry are identical as far as it's concerned the relevant resources they control (Porter, 1981; Rummelt 1984). Second, resources are characterized by a high level of mobility and therefore resource heterogeneity presents a short viability (Barney, 1986a; Hirshleifer, 1980).

Within this framework, the firm is seen as a bunch of activities looking for an attractive position so as to acclimate the industry environment. Porter stated that industry structure has an effect on the sustainability of firm performance while position has an impact on firm's ability to create a competitive advantage against its competitors. For Porter having industry structure stable, a firm has to possess an attractive position in the market arena so as to be successful. This position can occur from a firm's ability of being the lower cost producer than the competition or from the firm's ability to supply a product or service that is differentiated and the customer is willing to pay a price premium that exceeds the accumulation of the extra costs. Hence there two fundamental types of competitive advantage: low cost and differentiation. On the basis of the main competitive advantage of a firm in relation to its competitors, Porter (1980 and 1985) has defined three generic strategies: Cost leadership, Differentiation and Focus leadership (figure 1).



Source: Porter, 1985

Figure 1. Porter's Generic Strategies

2.3.1 Low-Cost Strategy

With this strategy, a firm has an objective goal of being the lowest-cost producer in the industry. Profitability and market segments controlled by these firms play a substantial role as cost leaders can match successfully the prices of their most efficient rivals (Porter 1980, 1985). The firm sells its products either at average industry prices to earn a profit higher than that of rivals, or below the average industry prices to gain market share. In the event of a price war, the firm can maintain some profitability while the competition suffers losses. Even without a price war, as the industry matures and prices decline, the firms that can produce more cheaply will remain profitable for a longer period of time. The cost leadership strategy usually forgoes quality, fashion and even innovation in order to keep costs low. This type of strategy typically target industry-wide groups of consumers (Porter, 1980) which are price-sensitive, have basic needs, seeking for cheap and low quality products or services (Murray, 1988). Some authors argue that cost leadership requires having a high relative market segment which involves capital investment in product R&D as well as aggressive pricing (Miller and Friesen 1986; Porter 1980). As a consequence, small firms avoid following such a cost strategy (Wright, 1987).

This generic strategy assumes that the achievement of scale economies is a major factor in success. Apart from this approach it is important to mention that there are many methods of acquiring a low-cost advantage. A more direct approach to low-cost

is to remove all extras from a product or service. At a more empirical level, lower costs can be derived from a variety of sources. Geographic location (Fahey, 1989), strict overhead control, implementation of new technology, product automation, and accessing substitute sources of raw materials may all be the reasons of achieving lower costs.

Firms that succeed in cost leadership usually have the following internal strengths:

- Access to the capital appropriate for making a significant investment in production assets. This investment can be considered as a barrier to entry that many firms may not overcome.
- Ability in designing products for efficient manufacturing, for example, having a small component count to shorten the assembly process.
- High level of expertise in manufacturing process engineering.
- Efficient distribution channels.

At this point, it is worth noting that in order to attain a competitive advantage through a cost-leadership strategy is a somewhat risky way. All companies within an industry should seek to reduce costs and if one, even unintentionally, finds a means of reducing costs adequately then the competitive advantage of other companies in the industry can be overcome fairly quickly. Additionally, Amit and Fershtman (1989) point out that a cost-leadership strategy might be unsuccessful because of low prices in a market or fast changing technology which does not permit a company to capitalize on its investments. Moreover the opportunity to follow cost leadership way to competitive advantage is restricted because there can be only one cost leader in the market. Because of these reasons, following a differentiation way to competitive advantage is far greater.

2.3.2 Differentiation Strategy

Differentiation is based on the development of a product/service that offers unique attributes that are valued by customers who expect to be better than or different from the products of the competition (Grant 1998). Companies that follow this type of competitive strategy try to distinguish their products in terms of superior quality, technology, functionality and customer-service so as to develop a unique market position. While the Cost leadership strategy presents the diminution of the price,

through a differentiation approach the firm is able to use a *premium price*. The firm hopes that the higher price will cover at the maximum the extra costs incurred in offering the product. Because of the product's unique characteristics, if suppliers increase their prices the firm may be able to pass along the costs to its customers who cannot find substitute products easily (Porter, 1980). Under this situation the most important aim of the company is to build price loyalty and price inelasticity which can generate entry barriers for direct competitors.

A differentiation strategy is about understanding the product or service and understanding the customer. To this extent, three fundamental questions must be answered: Who are our customers? How do we create value for them? And how do we do it more effectively and efficiently than anyone else so that we can earn profit for them? (Grant, 2008). Differentiation advantage cannot be achieved through the implementation of standardized frameworks and techniques. In contrast, differentiation advantage requires identifying new and unique opportunities and developing innovative approaches to exploit them. The key point is to differentiate from the customer's viewpoint rather than from the perspective of the business operation. Having the ability of assessing the affects of differentiation on customer's experience of acquiring and using the product the aim is to ensure that the value added will justify the premium price (Proctor, 2000). The added value has to be communicated through consumers and evaluated by them. Problems occur when customers are not capable to perceive this value. Branding is a useful tool for making added value more realistic and memorable. As a final point, differentiation needs to be sustainable and difficult to duplicate. Products that are more complex and include attributes which cannot be easily seen or touched, offer a better scope for differentiation as they are difficult to copy or overcome by rivals (Fahey, 1989).

For a successful generic Differentiation strategy, organizations need:

- A good level of scientific research, development and innovation.
- The ability to deliver high-quality products and/or services.
- Effective sales and marketing team, to communicate successfully the benefits offered by the differentiated offerings.

2.3.3 Focus Strategy

The focus strategic thrust concentrates on a narrow segment (niche) and within that segment attempts to achieve either a cost advantage or differentiation (Porter, 1985). The premise is that the needs of the group can be better serviced by focusing entirely on it. This concept is based on the assumption of serving a specific target in a special manner that others cannot compete. Addressing a smaller market segment in the industry, profit margins can be very high because of minimal competition. A firm using a focus strategy often enjoys a high degree of customer loyalty, and this entrenched loyalty discourages other firms from competing directly (Proctor, 2000).

In the differentiation focus strategy, a business aims to differentiate within just one or a small number of target market segments. Customers have special needs and so the firm must be able to provide products that are clearly different from competitors who may be targeting a broader group of customers. The important issue for any business adopting this strategy is to ensure that customers really do have different needs and preferences. It is apparent therefore for exist a valid basis for differentiation.

In the cost focus strategy, a business seeks a lower-cost advantage in just on or a small number of market segments. In many cases the product will be basic that means a similar product to the higher-priced and featured market leader, but acceptable to sufficient consumers.

Whether the firm decides to use Cost Focus or Differentiation Focus, the key to making a success of a generic Focus strategy is to guarantee that something extra will be added as a result of serving only that market segment (niche). The "something extra" can contribute to decreasing costs maybe through the knowledge of specialist suppliers or to increasing differentiation though the understanding of customers' needs.

Firms pursuing a focus strategy have lower volumes and therefore less bargaining power with their suppliers. However, firms pursuing a differentiation-focused strategy may be able to pass higher costs on to customers since close substitute products do not exist. Firms that succeed in a focus strategy are able to tailor a broad range of product development strengths to a relatively narrow market segment that they know very well. Some risks of focus strategies include imitation and changes in the target

segments. Furthermore, it may be fairly easy for a broad-market cost leader to adapt its product in order to compete directly. Finally, other focusers may be able to carve out sub-segments that they can serve even better.

2.3.4 Generic Strategies and the phenomenon of "Stuck in the Middle"

Generic strategies are not necessarily compatible with one another. Porter (1980) outlines that each type of competitive advantage is independent and specific, and any effort to merge low cost leadership and differentiation skills leads the firm's management in contradictory situations. If a firm, attempts to achieve an advantage on all fronts, in this attempt it may achieve no advantage at all. For example, if a firm differentiates itself by supplying very high quality products, it risks undermining that quality if it seeks to become a cost leader. Even if the quality did not suffer, the firm would risk projecting a confusing image. For this reason, in order to be successful over the long-term, a firm must select only one of these three generic strategies. Otherwise, with more than one single generic strategy as Porter stated, the firm will be "stuck in the middle" and will not achieve a competitive advantage. Many scholars have supported Porter's idea that competing with an exclusive, single strategy is most effective (Douglas and Rhee, 1989; Green et al., 1993; Miller and Friesen, 1986).

In contrast to this position, other scholars have criticized this perspective (Hill, 1988; Wright, 1987). A single generic strategy is not always the best solution because within the same product customers often seek multi-dimensional satisfactions such as a combination of quality, price and style. There have been cases in which high quality producers faithfully followed a single strategy and then suffered greatly when another firm entered the market with a lower-quality product that better met the overall needs of the customers. Firms that are able to pursue simultaneously more than one competitive strategy often create separate business units for each strategy. By separating the strategies into different units having different policies and cultures, an organization is less likely to "stuck in the middle" (Grant, 1998).

It can be argued that in the present environment conditions, in which the competitive pressures have flourished considerably, this argument of competing with one strategy has lost some of its appeal. Nowadays, some firms that follow highly-differentiation strategies are forced to reduce prices to sell their merchandise, because of the fierce competition generated within their strategic group. On the other hand, the

classification of Porter is not integrating the element of customer relationship in the three alternative strategies (Calin Gurau, 2007).

2.4 Resource-Based-View

2.4.1 Theoretical foundation

Before the emergence of RBV in strategic management literature, strategy was concerned with matching a firm's resources and capabilities to the opportunities and threats that arose in the external environment (Ansoff, 1965; Andrews, 1971). Based on these arguments and tracing back to the structure-conduct-performance (S-C-P paradigm) tradition, Porter (1980, 1981) argued that competitive advantage could be accomplished from product-market position. This competitive force approach (known as Positioning School), became the main approach through the mid 1980s. While this framework endeavoured to describe the industrial level conditions that determine a firm's performance, it completely ignored examining the performance difference at the individual firm level (Demsetz, 1973; Rumelt, 1997).

Thus, in trying to rectify the shortcomings of the Positioning school a new research approach appeared having an entirely different analysis from Positioning school namely '*Resource based view*' (Wernerfelt, 1984; Rumelt, 1984; Barney, 1986).

The resource-based view (RBV) is an economic tool used to determine the strategic resources available to a firm. This research approach considers industry structure as a result of firm level efficient productive activities (Lippman and Rumelt, 1982). In sharp contrast to Porter's framework, resources are valuable and strategy selection is derived from careful evaluation of those resources (strengths and weaknesses). The resource-based view hypothesizes that the essence of strategy should be defined by the firm's unique resources and capabilities (Rumelt, 1984). According to the particular theory, the basis for a competitive advantage lies in the application of the bundle of valuable resources at the firm's disposal (Wernerfelt, 1984, p172; Rumelt, 1984, p557-558). As Peteraf and Barney (2003) argue, it is understood that 'a critical feature of RBV is that it is an efficiency-based explanation of performance difference rather than one relying purely on market power, collusion, or strategic behaviour' (p.311). Given the output, RBV scholars see the performance

difference across firms as the consequence of differences in the efficiency of internal resources. Varying performance between firms is a result of heterogeneity of assets and RBV is focused on the factors that cause these differences to prevail (Amit and Shoemaker 1993, Barney 2001). From the above, the resource-based view of the firm substitutes two basic assumptions in analyzing sources of competitive advantage:

- First, this model assumes that firms within an industry may be *heterogeneous* with respect to the strategic resources they control.
- Second, this framework make a hypothesis that these resources may *not* be perfectly *mobile* across firms, and thus heterogeneity can be long lasting (Barney 1991).

Barney (1986) argues that if all the resources for firm level strategy in the ultimate sense must be purchased in the external factor market, there would emerge no economic rent from this market. That is because economic rent could possibly be gained if the firm could control heterogeneous resources that did not previously exist in the factor market. In addition this resource heterogeneity would be maintained if there exists uncertain inimitability (Rumelt, 1984) or causal ambiguity (Lippmann and Rumelt, 1982), and thereby immobility, among the firm resources (Barney 1991).

In an industry where firms possess exactly the same resources consequently, they have the same amount of strategically relevant physical, human and organizational capital. When a firm in an industry populated by identical firms has the resources to conceive of and implement a strategy means that these other firms, because they acquire the same resources, can also conceive of and perform this strategy. As a result, these firms will improve their efficiency and effectiveness to the same extent. Therefore, in this kind of industry, it is impossible for firms to possess a sustained competitive advantage. The hypothesis that sustained competitive advantage cannot exist when firms' resources in an industry are perfectly homogeneous and mobile it is supported by "first mover advantages" (Lieberman & Montgomery, 1988). Furthermore, barriers to entry cannot exist if firm resources are homogeneously distributed and if these resources are fully mobile (Barney, Mc Williams, Turk, 1989).

Peteraf (1993), while extending Barney's theoretical foundation, but explicitly relying on price theory, assumes that there are four cornerstones to competitive advantage: resource heterogeneity, ex-post limits to competition (defences against replication), ex ante limits to competition and resource immobility.

❖ Heterogeneity

In contrast to the traditional economic supporters, resource-based perspective makes the assumptions that firms within industries are heterogeneous in terms of their resources and capabilities. It is believed that a firm can enjoy superior productive procedures that are *limited* in supply. These allow the firm to formulate products or services at a low cost in comparison to its competitors. Thus, in a competitive market where there is a market price, firms that possess superior productive resources and are low-cost producers will earn rents that rivals cannot touch. Moreover, rents can also be gained with the aid of market closure through product differentiation. Firms, which can offer unique products with added value to customers, will be able to put a premium price and thus earn rents.

❖ Ex-Post Limits to Competition

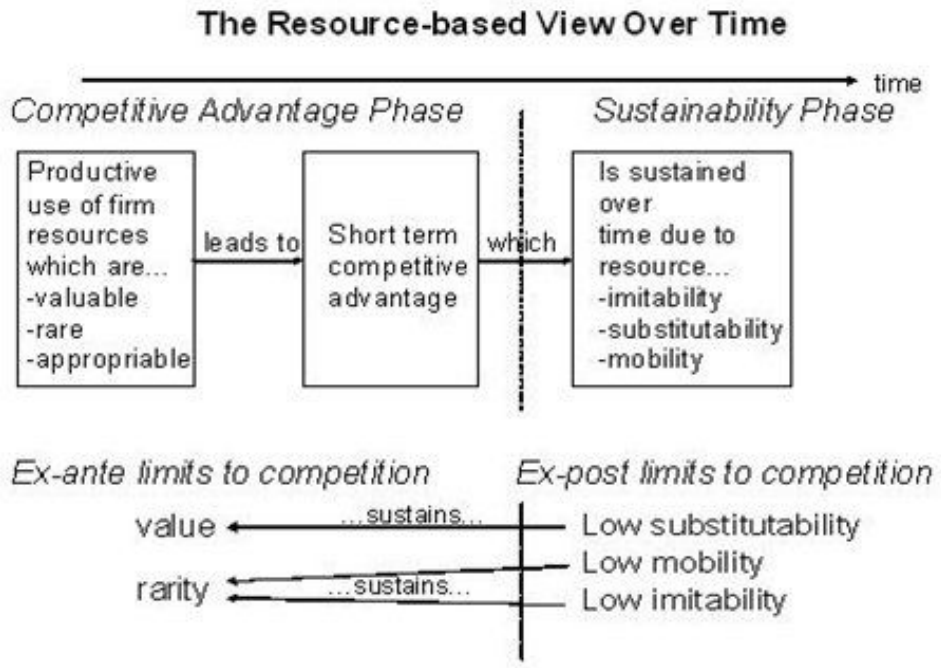
Heterogeneity must be long-lived otherwise, rents will be fleeting. Since strategists are mainly concerned with rents over a long period of time, heterogeneity must be durable to add value. This will be achieved if there are ex-post limits to competition. Hence, the firm's resource position in relation to resource-based work needs to defence against replication and substitution. Rumelt proposed the phrase "isolating mechanisms" to describe the factors that protect firms from imitators. These mechanisms contain economies of scale, information asymmetry, access to scarce resources, firm or product reputation, buyer switching costs and casual ambiguity (Rumelt, 1987)

❖ Ex-Ante Limits to Competition

The third condition focuses upon the need for managers to be entrepreneurial and related with ex ante limits to competition. Prior to the firm establishing its superior position, there must be limited competition for that position. Otherwise, the cost of getting there would offset the advantage of the resource or asset. Many supporters of this framework argue that firms must deal with uncertainty if they are to earn rents. This perception is based upon the belief that it is possible to earn rents from the acquisition of scarce resources before their rivals. Once the value of a resource is recognised, the acquisition costs will be increased and so future revenues will be offset. In that case, a firm must develop its critical skill to forecast.

❖ **Imperfect Mobility**

Resources are perfectly immobile if they cannot be traded. Firms, once they have acquired valuable resources need to retain these resources within their boundaries. In this occasion, resources that can be characterised as "firm-specific" in the extent that they have a weaken value outside that particular firm (Williamson, 1985) or are "co-specialized", that is if they are valuable only when they are used in combination to other resources within the firm (Teece, 1984) can lead to imperfect mobility.



Source: Wade and Hulland (2004)
Figure 2. The Resource-Based Theory

2.5 Firm Resources & Sustained Competitive Advantage

2.5.1 Definitions

According to Jay Barney (1991, p101) firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc; controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness. A distinction recommended by Amit &

Schoemaker (1993, p35) is that resources can be divided into resources and capabilities. At this point of view, resources are tradable and non-specific to the firm, while capabilities are firm-specific and used to utilize the resources within the firm, such as implicit processes to transfer knowledge within the firm (Makadok, 2001, p388-389).

The firm's *Resources* are defined as stocks of available factors that are owned or controlled by the firm (Amit & Schoemaker, 1993). Resources are converted into final products or services by using a wide range of other firm assets and bonding mechanisms such as technology, management information systems, incentive systems, trust between management and labor and more. The literature typically classifies a firm's resources into physical, financial, human and organisational resources (Barney 1991). Other authors who prefer to use a different categorization also classify a firm's resources as either tangible or intangible resources (Michalisin et al. 1997). In general, Resources can be classified into three categories:

- Physical capital resources include the physical technology used in a firm, a firm's plant and equipment, its geographic location and its access to raw materials.
- Human capital resources consist of the training, experience, judgment, intelligence, relationships and insight of individual managers and workers in a firm.
- Organizational capital resources contain a firm's formal reporting structure, its formal and informal planning, controlling, and coordinating systems, as well as informal communication among groups within a firm and between a firm and those in its environment.

Of course, not all aspects of a firm's physical, human and organizational capital are strategically relevant resources. Some of these firm attributes may prevent a firm from conceiving of and implementing valuable strategies (Barney 1986). However, those attributes of a firm's physical, human and organizational capital that lead the firm to consider and perform strategies that improve its efficiency are firm resources (Wernerfelt, 1984). Even though all resources are significant, the literature that deals with the sources of competitive advantage treats the human and organisational (i.e. the intangible) resources as slightly more appropriate for conceiving a competitive advantage (Whitehill 1997).

On the contrary, c*apabilities* refer to a firm's ability to deploy resources, usually in combination, using organizational procedures, to affect a desired end (Amit & Schoemaker, 1993). They are information-based, tangible or intangible processes and are developed over time through multipart interactions among the firm's resources. They can conceptually be thought of as 'intermediate goods' created by the firm to provide superior productivity of its resources, as well as strategic flexibility and protection for its final product or service. Capabilities, as Itami (1987) suggested, can be thought of as "invisible assets" because are the basis for developing and exchanging information through the firm's human capital.

RBV work while is analyzed from the explicit or implicit perspective as argued by Barney and Peteraf, is based on the individual firm-level resource as the analytical unit. A crucial focus among RBV scholars has been to identify the objective characteristics of resources require by the operative conditions for sustained competitive advantage. Thus, in order to reach a sustained competitive advantage, a firm resource must have the following attributes:

- valuable, in the sense that it exploit opportunities and deactivate threats that arose in a firm's environment
- rare among a firm's current and potential competition
- imperfectly imitable, and
- non-substitutable.

Each of these attributes of a firm's resources is discussed in more detail below.

2.5.2 Valuable resources

Firm resources can only be a source of competitive advantage or sustained competitive advantage when they are valuable. Resources are valuable when they enable a firm to conceive of or implement strategies that improve its efficiency and effectiveness. According to Barney (1991), if a resource or capability leads a firm to reduce costs and react to opportunities and threats that occur in the external environment, it is valuable. Hence, to the extent that a firm is able to effectively deploy such a resource or capability, it will attain a competitive advantage. Under this consideration, the level of a firm's competitive advantage will be depended of the value of its resources and capabilities. In order to effectively use or exploit a resource,

a firm must have access to the appropriate capabilities, which refer to a firm's capacity to deploy resources (Amit & Schoemaker, 1993-35). In other words, while a given resource may have the potential to yield a valuable service, that service will remain latent until deployed via a relevant capability. The key to attaining a competitive advantage is not simply the exploitation of a valuable resource or a valuable capability, but rather the exploitation of a valuable resource-capability combination. Moreover, the more valuable the firm's resource-capability combinations, the greater the advantage it will enjoy as a result of their exploitation.

2.5.3 Rare Resources

To be of value, a resource must be by definition rare. As noted above, to achieve a competitive advantage, firms must exploit a market opportunity, having the ability to neutralize a threat that their competitors cannot and achieve a cost level. A firm enjoys a competitive advantage when it is implementing a value creating strategy not simultaneously implemented by large numbers of other firms. When a valuable firm resource is acquired by a huge number of firms, then each of these firms have the ability to exploit that resource and thereby implementing an ordinary strategy. If firm resources are not rare, then a large number of firms will be able to conceive of and implement the same strategies and no one firm will enjoy a competitive advantage. Thus, these strategies will not be a source of competitive advantage, even though the resources in question may be valuable.

2.5.4 In-imitable Resources

If a valuable resource is controlled by only one firm it could be a source of a competitive advantage (Barney, 1991, p107). This advantage could be sustainable if competitors are not able to duplicate this strategic asset perfectly (Peteraf, 1993, p183; Barney, 1986b, p658). Firm resources can be imperfectly imitable for one or a combination of three reasons:

a) The ability of a firm to acquire a resource is depended upon unique historical conditions. In contrast to environmental models which assume that the performance of a firm can be understood independent of the particular history, the resource-based

view recognize the importance of this factor as a determinant of firm performance and competitive advantage. If a firm obtains valuable and rare resources because of its unique path through history, it will be able to exploit those resources in formulating value-creating strategies that cannot be duplicated by other firms.

b) The relationship between the resources possessed by a firm and a firm's sustained competitive advantage is casual ambiguous. When the link between a firm's resources and its sustained competitive advantage are not well understood, it is very difficult for firms to know which resources should imitate in order to duplicate a firm's strategy. To be a source of sustained competitive advantage, both the firms that possess resources that generate a competitive advantage and the firms that seek to duplicate them must be faced with the same degree of casual ambiguity. To sum up, in order for casual ambiguity to be a source of sustained competitive advantage, all competing firms must not acknowledge the link between the resources controlled by a firm and a firm's competitive advantages.

c) The resource that makes resources imperfect imitable and thus could lead to a firms advantage is socially complexity (Barney, 1991). Examples of such resources with high social complexity are the interpersonal relations among managers, the firm's reputation and the firm's culture. These resources could add value to a firm. However, it is difficult by other firms to imitate these resources and therefore there are imperfectly imitable.

2.5.5 Non-Substitutability

In the matter of substitutability it is been stated that it is a condition for a source to create a competitive advantage. According to Barney (1991), there must be no strategically equivalent valuable resources that are themselves either not rare or imitable. Two firm resources are strategically equivalent when it is possible to use them separately in order to apply the same strategies. For example, if one of these firm resources is rare and imperfectly imitable, but the other is not, firms with this resource will be capable to conceive of and apply certain strategies. If there were no strategically equivalent resources, these strategies would cause a sustained competitive advantage. However, that there are strategically equivalent resources suggests that other competing firms can implement the same strategies, in a different

way by using different resources. Consequently, these strategies will not create a continued competitive advantage.

Substitutability could be at least of two types. The first type is the use of a similar resource that enables the same strategies. A firm cannot duplicate the management team of a successful company, however it could form a different management team which could be strategically equivalent and therefore a substitute for the first team. This means that a high quality management team could not be a resource for competitive advantage although it is valuable, rare and imperfectly imitable. The second type of substitutability is the use of different firm resources. A firm's manager may have a clear vision of the firm's goals and this could be initiated by a charismatic leader within the firm. On the other hand, a competing firm could have the same future goals as a result of the firm's strategic planning. Both of the above manager teams may be strategically equivalent and thus substitutes for each other.

2.6 Perspectives & Approaches within RBT

2.6.1 The knowledge based view

The thought of the firm as a body of knowledge has been coined by many corporate strategy theorists (Nelson and Winter, 1982; Grant, 1996). The explosion of interest in intellectual capital and its management reveals the trend towards knowledge and the Information Age, and enhance the recognition of knowledge as the main source of economic rent. Managing intellectual capital in the Information Age is too challenging as economies have entered a new period.

A theory, which emphasizes on the internal sources of competitive advantage, is the Knowledge-Based Theory. Researchers of this theory argue that a firm can win a competitive combat only if it has more relevant knowledge than its competitors (Inkpen, 1998). Competitive advantage can be emerged not only to the ownership of knowledge assets but also to the capability of combining knowledge assets with other assets needed to create value. Of course, from a firm's perspective not all types of knowledge are equally useful. One very important part is the element of knowledge that could be named as commercial knowledge. Its main target is to ensure effective performance. Knowledge has been classified by the advocates of the knowledge based

school into several categories. Two of them are considered by scholars to be the most important.

The first categorization separates the intellectual capital of a company into human and structural capital (Hatch and Dyer, 2004). Human capital is concentrated on the employees' knowledge and abilities and cannot be owned by a firm. It can only be used, by hiring which leads to the conclusion that it could be extremely risky. On the other hand, the structural capital is considered to be firms' property and thus easily traded (Zhang and Li, 2007). Therefore, one very significant challenge of management is to transform the firm's human capital into structural capital (Kakabadse et al. 2001).

The second important categorization made by Polanyi (1966) and later by others (Nonaka and Takeuchi, 1995; Teece 1998) separates knowledge into explicit and tacit knowledge. The crucial distinction between implicit or tacit knowledge and explicit knowledge is based on the transferability and the means of transfer across individuals, space or time. Explicit knowledge, which is also known as 'codified' knowledge, is naturally connected with communication. This type of knowledge is easily transferable orally and in written or electronic form. As such, words, numbers and statistics including diagrams or models are a common language for transmitting certain types of explicit knowledge (Polanyi 1966).

However, tacit knowledge is based on instincts and intuitions and is embedded in an individual's values, actions and emotions (Polanyi, 1966). Tacit knowledge is revealed through its application. Polanyi stated that tacit knowledge is not easily observable and expressible and thus not straightforward to formalize and communicate to others. In order to be shared, this category of intellectual capital needs to be translated into words, numbers or pictures that can be understood by others. It is this implicit feature that makes tacit knowledge difficult to duplicate and import from organization to organization and thus makes it an essential firm resource for protecting competitive advantage (Grant, 1996, McAulay et al. 1997; Leonard/Sensiper 1998).

Intellectual capital is naturally related with systematic management. By definition knowledge management concentrates on the systematic analysis, planning, creation, developing and exploitation of a firm's knowledge and seeks to convert a firm's human capital into structural capital so as to create the competitive advantage of a

firm and help complete its other main objectives in a more expedient way. As a result, knowledge management must be considered as a cross-functional activity which remains within the competence of a firm's strategic management.

According to the literature about analysis and management knowledge, four characteristics are important to create value within the industry by the application of knowledge: transferability, capacity for aggregation, appropriability and specialization.

In terms of knowledge, transferability is a significant issue both between firms and more critically, within the firm. Many scientists have made the distinction between knowing how and knowing about. Grant (1996), identifies knowing how with tacit or implicit knowledge and knowing about facts or theories with explicit knowledge. The efficient transferability of knowledge depends on its ability for aggregation. Knowledge aggregation is much more effective when it can be expressed in terms of common language. The term appropriability reflects the ease of imitation. The owner of a resource must have the ability to receive a return equal to the value generated by the resource (Levin et all, 1987). Tacit knowledge can only be appropriated through its application and thus is not directly appropriable. On the other hand, anyone who obtains explicit knowledge can resell it without losing it (Arrow, 1984). As a result, when the existing property system of a firm provides legal barriers to imitation, and technology is also inherently difficult to duplicated, knowledge is usually inappropriable by means of market transactions (Teece, 1998). Finally, the efficiency, in knowledge production depends on the level of specialization. More specifically the construction of new knowledge and the acquisition of existing knowledge require that individuals specialize in particular areas of knowledge.

To conclude, KBV holds knowledge assets, resources and capabilities as the prime strategic resources (Grant 1996; Spender 1996). Knowledge, as we mentioned before, can be obtained either explicit or implicit so as to acquire and assess the value of information. Managing knowledge efficiently require understanding the organization. Especially managers need to be aware of all the categories of stakeholders such as customers, employees, suppliers and be capable to act on that knowledge in appropriate ways (Kakabadse, 1991). Managing people effectively and building organizations that permit individuals to develop knowledge and create

communication structures that enforce the exchange of this knowledge is of prime priority.

2.6.2 Dynamic Capabilities

Dynamic capabilities can be seen as an extension of resource based view where the firm is conceived as a collection of resources. The term 'capabilities' focuses on the main part of strategic management in building, adapting and reconfiguring internal and external organizational skills, resources and competences to address speedily changing environments. In addition, 'dynamic' refers to the ability of renewing competences so as to attain equivalence with the continuing fluctuating environment. Dynamic capabilities thus reveal a firm's ability to accomplish new and pioneering forms of competitive advantage take under consideration dependencies and market positions (Leonard-Barton, Core capabilities and core rigidities 1992).

The concept of dynamic capabilities was introduced by Teece & Pisano (1997) who asserted that in a dynamic environment a firm's competitive advantage is derived from high-performance routines functioning 'inside the firm'. The competitive advantage is seen as rested on the firm's internal processes such as the firm's portfolio of difficult to trade knowledge assets and complementary assets. The content of these processes and the opportunities they afford for building competitive advantage are honed to the assets the firm possesses and to the evolution path, it has inherited. Therefore organizational processes, formed by the firm's asset positions and patterned by its evolutionary paths, explain the fundamental nature of the firm's dynamic capabilities and its competitive advantage. As a consequence, the firm is able to renew and transform its stock of organizational capabilities and distribute a constant stream of new and revolutionary products and services to consumers. Many authors (Grant, 1996; Verona & Ravasi, 2003; Zollo & Winter, 2002), point that within the resource based view the key to achieving a sustainable competitive advantage from the firm's stock of resources lies in the ability to integrate different resources to form strong organizational capabilities.

The dynamic capabilities framework analyzes the sources and methods of wealth creation and capture by firms and seeks to provide a coherent approach, which can equally integrate existing knowledge and facilitate prescription. Structuring a

framework related to dynamic capabilities entail to identify the basis which distinctive and difficult to imitate advantages can be erected and maintained. Initially, the key step is to recognize what is not strategic. To be strategic, a firm's capability must be unique so as to built boundaries to competition, difficult to duplicate so returns will not be competed away and finally must be shaped to a user need with the purpose of being a source of revenues.

In short, dynamic capabilities suggest that competitive advantage stemming from internal routines. This framework proposes that internal procedures such as technological, organizational and managerial processes enhance the wealth creation of firms operating in environments of rapid change. Managers should constantly attempt to recognize new opportunities and reconfigure efficiently their operational competencies to address them.

2.6.3 Core Competencies

A number of researchers have claimed that core competencies are very important factors in the success of the company. According to them, companies should identify their core competencies and use the knowledge to manage the company. Core competencies can be seen as one of the resources of the firm. Prahalad and Hamel (1990) put forward the idea of 'core competencies'as the bedrock upon which to build strategies. The term of core competence was originally defined as 'the collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies' :(p. 82). We define a core competence as a competence that fulfils three criteria, in accordance with Prahalad and Hamel (1990):

1. A core competence must contribute significantly to customers' benefit from the product. Core competencies are skills that enable a firm to deliver an essential customer advantage. Even if a core competence must make a fundamental contribution to customer perceived value does not mean that the core competence will be able to be seen to, or easily understood by, the customer. What are visible to customer are the benefits of the competence that inspire that benefit.

2. A core competence should be difficulty for competitors to imitate. Competencies that are a complex combination of individual technologies and skills are more difficult to imitate. To qualify as 'core' a competence does not mean that must be exclusively held by a single firm but rather that any capability that is everywhere across the industry should not be defined as `core` unless, the company's level of competence is significantly superior to all others. Competence can not be defined as `core` if it is ubiquitous or easily duplicated by rivals. (Hamel, 1994a: 14-15).
3. A core competence should also provide potential access to a wide variety of markets.

Core competencies emphasize the role of collective learning and coordinated skills and enable organizations to offer unique value to the customers and create immutable competitive advantages in their products and services. A core competence represents the integration of a variety of individual skills. It is this integration that is the feature of a core competence. In core competency firms emphasize coordination of knowledge and skills within the firm and translate that into sustainable competitive advantage. The development of core competencies is the basis for producing a competitive advantage in achieving strategic intent. Acquiring and nurturing competences which are not 'core' is wasteful of resources and effort and serves only to dispel concentration. It is better to buy in non-core competencies (Quinn *et al.,* 1990) and focus all internal efforts on the acquisition and development of what really. A firm's capacity for competitive innovation reflects its ability to acquire relevant core competencies and to apply them effectively in the development of core products.

2.7 Criticism on Theories

2.7.1 Resource-Based-Theory

In analyzing the conditions underlying sustained competitive advantage, RBT researchers have focused on the attributes of the resource *per se* (e.g. value, rareness, imperfect imitability, non-substitutability and so on) as seen in Barney (1991) and Peteraf (1993).

Nevertheless it could be said that this framework still have some weak points that should be examined. RBV scholars imply that all resources are being put to best use and that all attempts by competing firms at imitating or substituting the resources of a successful firm have ceased (Foss, 1998). In addition, it is assumed that resources are transformed into some *given* outputs. These model expressed the situation in which the firm achieves competitive advantage is demonstrated as a one-stage process, with only the given heterogeneous resources and the given final goods rather than a complex multi-stage process unfolding through time. The generated rent seen in this snapshot look is arrested as an effect of appropriating a larger piece of a fixed pie (Kim and Mahoney, 2006).

Therefore, RBV academics did not adequately reveal how resources could become strategically efficient or where these attributes come from. This does not mean that the problem is placing the resource as the central unit of analysis. Rather that the attribute of the resource is already *given* in their framework is the serious problem. In fact, it is apparent that the practical problem occurs because the resource attribution is never given in the way they propose. It is argued that the attribute of a resource arises logically from a subjective belief about its feasibility of value. That is, the attributes of resources are neither inherent in the resources *per se* nor can one reach complete understanding by the analysis of resources alone. Rather, the attributes of resources such as characteristics, function, and possible use of assets, being the components of competitive advantage, are determined and obtained only by the entrepreneur making decisions under uncertainty (Foss and Klein, 2005)

Many authors have criticized the RBV model. According to Priem and Butler (2001), RBV is self-verifying. From Barney's point of view a competitive advantage is a value-creating strategy that is based on resources that are, among other characteristics, valuable (1991, p106). This reasoning is circular and therefore operationally invalid as indicated by Priem and Butler (2001a, p31). These authors also suggest that different resource configurations can produce the same value for firms and thus would not be competitive advantage.

Further criticisms are:

- It might be difficult to find a resource, which satisfies the Barney's criteria.
- There is the assumption that a firm can be profitable in a highly competitive market on condition that it can exploit advantageous resources, but this may

not necessarily be the case. On the contrary to Porter's analysis; it ignores external factors concerning the industry as a whole.

- An important source of sustainable competitive advantage is causal ambiguity (Lippman & Rumelt, 1982, p420). Unfortunately, the firm is not able to manage a resource it does not know exists, even if a changing environment requires this (Lippman & Rumelt, 1982, p420). Through such an external change the initial sustainable competitive advantage could be invalidated or even transformed into a weakness (Priem and Butler, 2001a, p33; Peteraf, 1993, p187; Rumelt, 1984, p566).
- The term 'rare' is obsolete: In spite of the fact that this is supported in Wernerfelt's articulation of the resource-based view (1984) and Barney's consequent framework (1991), the concept that resources need to be rare to be able to function as a possible source of a sustained competitive advantage is not essential (Hoopes, Madsen and Walker, 2003, p890). Any resource that follows the characteristics: valuable, inimitable and non-substitutability, is naturally rare.
- Sustainable: The lack of precise definition referring to the concept sustainable makes its assumption difficult to test empirically. Barney's declaration (1991, p102-103) that the competitive advantage is sustained if current and future competitors have ceased their imitative efforts is versatile from the viewpoint developing a theoretical framework, but a disadvantage from a more practical point of view as there is no explicit end-goal.

Although its limitations, it is obvious that the RBV framework has attempted to emphasize the significance of firm's resources and capabilities and their role so as to attain a competitive advantage.

2.7.2 Porter's Theory

In spite of its significant contributions, Porter's model of Five Forces and generic strategies, have been subjects of much critique. Its main weakness results from the historical context in which it was developed. In the early eighties, the global economy was described by cyclical growth. As a result, primary corporate objectives consisted of profitability and survival. The most important precondition for attaining these objectives has been optimization of strategy in respect to the external environment. At

that time, development in most industries has been fairly stable and predictable, in comparison to today's dynamics. Generally, the significance of this model is diminished by the following factors:

· The model presumes a classic perfect market and is best applicable for analysis of simple market structures. A comprehensive analysis of all five forces gets very difficult in complex industries. A narrow focus on particular segments of such industries, however, bears the risk of missing significant elements.

· The model assumes static market structures. This structure does not exist in today's dynamic markets. Technological innovations and dynamic market entrants may change business models, entry barriers and relationships along the supply chain within short times. The Five Forces model may have some use for later analysis of the new situation; but it will hardly provide much meaningful advice for protective actions.

· The model is based on the concept of competition. Companies try to achieve competitive advantages over other players in the markets as well as over suppliers or customers. With this focus, it does not really take into account strategies like strategic alliances, electronic linking of information systems of all companies along a value chain, virtual enterprise-networks or others. In general, Porters Five Forces Model has some major limitations in today's market environment. It is not able to consider new business models as well as the dynamics of markets. The value of Porters model is more that it forces managers to think about the present situation of their industry in a structured, easy-to-understand way – as a starting point for further analysis.

Furthetmore, generic strategies are criticised for presenting general typologies (Chrisman et al. 1988; Hill 1988; Miller 1992) which are not considered in the context of different market environments (Dess et al. 1990; Murray 1988), with a limited practical application because of their simplicity and rigidity (Day and Wensley 1988; Spender 1993).

A great number of empirical studies have disagreed with the validity of generic strategies. As Dawes and Sharp (1996) note in their analysis of various Generic Strategies clusters, Porter's framework "does not describe/fit empirical reality, and provides no support for the notion that these generic strategies are routes to superior profit" (Dawes and Sharp 1996, p. 36). In addition, Aktouf et al. (2005), criticize the epistemological basis of Porter's theories, considered to be based on vaguely

developed concepts and forced generalisations of particular competitive situations. Other criticisms of Porter's model reflect a different strategic approach, based on various schools of management thought. The resource-based perspective claims that the strategic analysis should focus more on the key resources that allow the firms to achieve a specific competitive advantage, rather than on product-market positioning.

Porter highlights that the bases for generic strategies are the main sources of competitive advantage. However, Porter's theory fails to recognize that the sources of competitive advantage might change in time, and for that reason the theory will have to be developed and re-interpreted under new competitive conditions. Both academics and practitioners have put an emphasis on the incapacity of Porter's theories to integrate and explain the new market forces that reshaped the competitive conditions and management practices in the 21st century. Downes (1997) states in his article 'Beyond Porter' that the strategic concepts created by Porter are not longer directly valid. Nowadays, it is not enough to position oneself as a cost or quality leader, but rather to leverage all your strategic advantages in order to develop durable relationships with increasingly well-informed customers (Recklies 2001).

Apart from its limitations, Porter's theory is still a useful tool for managers as they try to analyse the competitive market environment and propose effective strategies. However, it is of vital importance to apply these models having a clear understanding of their shortcomings and to consider alternative models, which can complement the Porter's vision of generic competitive forces and strategies.

Chapter 3. Methodology

3.1 Introduction-Research Questions

The aim of this chapter is the identification of the intellectual core of RBT discipline and Porter's theory, as well as the examination of the diffusion within the academic and practitioner literature as far as concerns RBV literature and Porter's theory literature. The concept of computational linguistics method initiated in the particular research. The study consists of three research questions:

- **first** question attempts to recognize the key phrases that define the RBT and Porter's theory,
- **second** endeavors to distill the research areas that have emerged within RBT, and
- **third** to explore the impact of RBT and Porter's literature within the Academic-oriented journals and the practitioner-oriented journals.

In order to find accurate results as answers to the given research questions, tools such as Term-extractor, Matlab, Latent Semantic Analysis and Wordsmith 5.0 were utilized. The methods and techniques followed in this research are adequately described

3.2 Computational Linguistics

The Association for Computational Linguistics defines computational linguistics as "the scientific study of language from a computational perspective. Computational linguists are interested in providing computational models of various kinds of linguistic phenomena".

Moreover, computational linguistics might be considered as a synonym of automatic processing of natural language, since the main task of computational linguistics is just the construction of computer programs to process words and texts in natural language (cited in Bolshakov, 2004).

Computational linguistics can be thought as an interdisciplinary field coping with the statistical or rule-based modeling of natural language from a computational perspective. This modeling is not limited to any particular field of linguistics. Typically, computer scientists who had concentrated in the application of computers

to the processing of a natural language performed computational linguistics. In general, computational linguists work as members of interdisciplinary teams, including linguists who particularly trained in linguistics, language experts and computer scientists. On the whole, computational linguistics draws upon the involvement of linguists, computer scientists, experts in artificial intelligence, mathematicians, logicians, cognitive scientists, cognitive psychologists, psycholinguists, and anthropologists among others.

Computational linguistics had its origins in 1950 in the United States when computers were used to mechanically translate texts from foreign languages, especially Russian scientific journals, into English. When mechanical translation did not succeed to yield accurate translations right away, automated processing of human languages was identified as far more complex as had initially been presupposed. Computational linguistics was born as the name of the new field of study devoted to developing algorithms and software for intelligently processing language data. When artificial intelligence came into existence in the 1960s, the field of computational linguistics became that sub-division of artificial intelligence dealing with human-level comprehension and production of natural languages.

Bolshakov and Gelbukh (2004) recommended that not every program that managing natural language texts is related to linguistics. They believe that in order to consider a computer system as linguistic, the data and the procedures that are used must be language independent and large, meaning that requires a great amount of work for compilation.

Computational linguistics can be distinguished into core areas depending upon the medium of the language being processed, whether spoken or textual; and upon the task being performed, whether analyzing language (recognition) or synthesizing language (generation).

Speech recognition and speech synthesis cope with how spoken language can be understood or generated using computers. Parsing and generation are sub-divisions of computational linguistics dealing correspondingly with taking language apart and putting it together. Machine translation remains the sub-division of computational linguistics dealing with having computers translate between languages.

Some of the research areas that are examined by computational linguistics contain:

- Computational complexity of natural language, largely modeled on automata theory, with the application of context-sensitive grammar and linearly-bounded Turing machines.
- Computational semantics comprises defining suitable logics for linguistic meaning representation, automatically constructing them and reasoning with them
- Computer-aided corpus linguistics
- Design of parsers or chunkers for natural languages
- Design of taggers like POS-taggers (part-of-speech taggers)
- Machine translation as one of the earliest and least successful applications of computational linguistics draws on many subfields.

3.2.1 Corpus Linguistics

Corpus linguistics has undergone a significant rebirth in recent years. It is a marginalized approach widely known for its contributions to lexicography and grammar, especially for English language, informing projects as the Collins COBUILD Advanced Learners English Dictionary and the Longman Grammar of Spoken and Written English, respectively (Mautner, 2007). Corpus linguistic techniques can also be harnessed profitably for uncovering relationships between language and the social. Examples include Alexander's (1999) corpus-based analysis of ecological issues in business texts and Teubert's (2000), and Mautner's (2000) investigations of British "Euro" discourse.

Corpus linguistics is a lively subject, with corpus-based approaches being taken to many research questions in linguistics. But, first it seems more suitable to address the most basic question of all: What is corpus linguistics?

Corpus Linguistics can be characterized in simple terms as the study of language based on examples of 'real life' language use (McEnery and Wilson, 1996).

Corpus linguistics is not a branch of linguistics in the sense as syntax, semantics, sociolinguistics and so on. All of these disciplines focus on describing and explaining some aspect of language use. Corpus linguistics in contrast is a methodology and not a feature of language involving explanation or description. A corpus-based approach can be taken to many aspects of linguistic enquiry. Syntax, semantics and pragmatics

are examples of areas of linguistic enquiry that have used a corpus-based approach. Corpus linguistics, however, has the ability to distinguish between approaches taken to the study of language and it defines an area of linguistics or, at least, a series of areas of linguistics. Therefore, we have corpus-based syntax as opposed to non-corpus-based syntax, corpus-based semantics as opposed to non-corpus-based semantics and so on. Although corpus linguistics is not an area of linguistic enquiry, it allows differentiating between methodological approaches taken to the same area of enquiry by different groups, individuals or studies.

The research field has been criticized by Noam Chomsky. He invalidated the corpus as a source of evidence in linguistic enquiry. Chomsky proposed that the corpus could never be a useful tool for the linguist, as the linguist must search for modeling language competence in spite of performance. Corpus linguistics does away with Chomsky's competence/performance split; adherents believe that reliable language analysis best appears on field-collected samples, in natural contexts and with minimal experimental interference.However, his attacks initiated various responses from linguists who believed that corpus data would be a helpful tool.

3.2.2 Issues in Corpus design

Francis (1964) defines corpora as a collection of texts supposed to be representative of a given language, or other subset of a language, to be used for linguistic analysis.

Another definition is given by Sinclair (1994) who claims that «corpus is a compilation of pieces of language, which are selected and arranged according to explicit linguistic criteria so as to be used as a sample of language».

In general, a corpus consists of a databank of natural texts, compiled from writing and/or a transcription of recorded speech. In principal, any collection (body) of more than one text can be called a ‘corpus’. McEnery and Wilson (2001) stated that the term corpus when used in linguistics usually must have some characteristics than this simple definition provides for. These specific connotations are:

- sample and representativeness: Producing a corpus means that we have to deal with a sample of a much larger population. As a consequence, representativeness is the major issue in corpus design, and is driven by the

identification of a specific population or focal point of study. Representativeness refers to "the extent to which a sample includes the full range of variability in a population" (Biber 1993). Engwall (1994) notes that availability of resources is a key constraint.

- finite size: at the beginning of the corpus-building project, the research plan should define how many samples of how many words are to be collected. So a corpus must have a finite number of words contain in it. An exception constitutes the case of monitor-corpus, which Sinclair introduced, and it is referred as an open-ended entity of collection texts. The main advantages are the age of the texts, which are not static, and very new texts can be included op, unlike the 'snapshot' provided by finite corpora and the scope in that a larger and much broader sample of the language can be covered.
- machine readable form: Corpora that are machine readable possess several advantages as they can be searched and manipulated in ways that are impossible in other formats. The second advantage is that they can be easily enriched with additional information. This is well known as annotation.
- standard reference: There is a tacit understanding that a corpus constitutes a standard reference for the language variety that it represents. This assumes its broad availability to other researchers in order to provide a yardstick by which successive studies may be measured. Furthermore, a standard corpus means that a continuous base of data is being used and thus variation between studies may be less likely to be attributed to differences in the data being used, and more to the adequacy of the assumptions and methodologies contained in the study.

Consequently, a corpus in modern linguistics might more accurately be described as a finite-sized body of machine-readable text, sampled in order to be representative of the language variety under consideration in maximum.

A distinction between external and internal criteria is of particular importance for constructing a corpus for linguistic analysis. The *internal criteria* are those which are essentially linguistic: for example, to classify a text as formal/informal is to classify it according to its linguistic characteristics (lexis/diction and syntax). On the other hand, *external criteria* are those, which are essentially non-linguistic such as genre, mode and origin.

Of course, the internal criteria are not independent of the external ones and the interrelation between them is one of the areas of study for which a corpus is of primary value. In general, external criteria can be determined without reading the text in question, thereby ensuring that no linguistic judgements are being made. The initial selection of texts for inclusion in a corpus will inevitably be based on external evidence primarily. Once the text is captured and subject to analysis there will be a range of linguistic features of the text which will contribute to its characterisation in terms of internal evidence (Biber 1993). A corpus selected entirely on internal criteria would yield no information about the relation betweenlanguage and its context of situation. A corpus selected entirely on external criteria would be liable to miss signicant variation among texts since its categories are not motivated by textual (but by contextual) factors.

❖ Corpus Typology

A corpus is a body of text assembled according to explicit design criteria for a specific purpose, and therefore the rich variety of corpora reflects the diversity of their designers' objectives. It is worth mentioning that the text typology is relevant to corpus typology, in that corpora may be classified according to text types if they consist solely of texts of one single type (Atkins et all, 1992). Thus, if the corpus is created for the purpose of studying one single **mode**, then one may have a **spoken** or a **written** corpus; similarly, if only one **medium** is of interest, one may have **a book** or a **newspaper** or a **classroom lesson** corpus. In this section, however, our purpose is to outline certain contrastive parameters of corpus typology per se:

1**. FULL-TEXT -SAMPLE -MONITOR**

For Full Text: each text in the corpus is unabridged.

For Sample: sample size to be defined, also location of sample within full text and method of selection of samples.

For Monitor: texts scanned on continuing basis, `altered' to extract data for database, but not permanently archived. (Clear(1988), Sinclair(1982))

2. **SYNCHRONIC-DIACHRONIC**

Notes: A specific period must be designated for a synchronic corpus; this requires research into how long that period may be if the corpus is to be considered synchronic.

3. **GENERAL-TERMINOLOGICAL**

Notes: Terminologists must de_ne conditions which must obtain if a corpus is to be valid for terminological use, this in terms no doubt of the text typology.

4. **SINGLE –PARALLEL**

5. **CENTRAL-SHELL**

The central corpus is a selected body of texts, of manageable size, big enough for normal purposes.

3.2.3 The Collection of Corpora

The collection of the corpora for the particular research is a critical stage in the process. The objective is to form corpora on the base of published papers according to explicit criteria in an attempt to be representative (Sinclair, 1994). The four corpora, which were generated, were:

- **The Resource-based view Literature Corpus**
- **The Porter's theory Literature Corpus**
- **The Academic-oriented Corpus**
- **The Practitioner-oriented Corpus**

There were some restrictions concerning the genre, the purpose of the text and style. The term genre is concerned to the different types of written publications; the term mode describes whether the text is written or spoken, and the purpose of the text is related to the target audience.

❖ **The Resource-based Theory Literature Corpus**

When analyzing a scientific field, the usual criterion to establish the core of the discipline is relevance (most cited papers in the considered journals). Thus, the collection of those source documents that composition the core of a theory or discipline it is of vital importance in the progress.

In this corpus the collected papers numbered in 106 articles, were appeared as references in the article "Strategic Recourses and Performance: A Meta-Analysis"

written by Crook et all in 2008. This article conducted a meta-analysis on RBT in order to identify how strongly strategic resources related to performance. They conclude that the identification, development and distribution of value from strategic resources should be the main priority for scholars, managers and shareholders.

Moreover, in order to answer the second question about the research areas among the field of RBT, a sub-corpus of the initial RBT corpus was designed. As a guideline, 3 highly regarded papers in the field of the Resource-Based Theory were chosen. These articles were cited as references in the selected papers. The first paper "*A Resource-based View of the Firm*" written by *Wernerfelt B.* in 1984 explored the usefulness of analyzing firms from the resource side rather than from the product side. He was suggested the concepts of resource position barrier and resource- product matrices. The second article was conducted by *Barney J.*, who is considered to be the father of modern RBT, in 1986 known as *"Strategic Factor markets: Expectations, Luck, and Business Strategy"* and he supported the concept that strategic choices should flow mainly from the analysis of the firm's unique skills and capabilities rather than from the analysis of its competitive environment. Finally, it was added his article *"Firm Resources and Sustained Competitive Advantage"* published in 1991, where he examined the relationship between firm resources and sustained competitive advantage. In this article, he suggested that resources should have some important characteristics so as to generate a sustained competitive position.

The subcorpus consisted of the titles, abstracts and key phrases of the articles were collected. The number of the articles reached to 1.870 papers. The initial decisive factor to select the papers was the value of the Impact Factor report of the ISI. The articles that were discussed above found to have high levels of the particular factor. Finally, articles that contained the words *capability, knowledge and resource* in their title or abstract or key words were only included.

❖ Porter's Literature Corpus

According to the development of Porter Literature, the corpus consists of his two books:

1. *Competitive Strategy*, *techniques for analyzing industries and competitors*, Free Press, 1980.

In this book, Porter defines a framework foe assessing the attractiveness of an industry and discusses generic strategies for effectively positioning a firm within that industry.

2. *Competitive Advantage*, *Creating and Sustaining Superior Performance*, Free Press, 1985.

In his second book, Porter uses the value chain as a powerful conceptual tool to direct the firm activities toward enhancing its competitive position.

❖ The Academic-oriented Corpus

In order to provide a robust examination in the particular research, abstracts from all research articles published in 12 top management journals were analyzed. In particular, the corpus of Academics was constituted of 19.024 articles, including the titles, abstracts and key phrases. In order to obtain longitudinal and evolutionary view of the discipline, a 20-year period 1990 through 2009 was utilized.

It is worth mentioning that data were selected from the database of Web of Science in the Institute for Scientific Information. ISI Web of Knowledge is much more than an aggregation of content and tools. It's a unified platform that integrates all data and search terms together in order to conduct a search to find all relevant items in spite of what database it originated in. ISI web of knowledge is an intelligent research platform that offers access to the world's leading citation databases, including powerful cited reference searching, the Analyze tool to discover trends and patterns and so on.

According to the Impact Factor Report (IF) of the ISI, journals that appeared highly ranked where chosen. The impact factor is useful in clarifying the significance of absolute (or total) citation frequencies. It eliminates some of the bias of such counts that favor large journals over small ones, or frequently issued journals over less frequently issued ones, and of older journals over newer ones. The calculation of the impact factor is computed on a 3-year-period and can be thought as the average amount of times published papers are cited to two years after having published.

Particularly the Academic-oriented corpus consists of the journals are mentioned below in descending order according to their impact factor:

1. *Academy of Management Journal*
2. *Academy of Management Review*

3. *Organization Science*
4. *Administrative Science Quarterly*
5. *Strategic Management Journal*
6. *Organization Studies*
7. *Journal of Management*
8. *Journal of Organizational Behavior*
9. *Journal of Management Studies*
10. *Personnel Psychology*
11. *Journal of Applied Psychology*
12. *Human Resource Management*

❖ **The Practitioner-oriented Corpus**

The same procedure as above was implemented for the determination of Practitioner-oriented corpus. The number of papers that was collected amounted to 6.627 articles from1990 to 2009, containing only the titles, the abstracts and the key phrases. These articles were published in four top management journals that are oriented among the practitioner's interests. More specifically the journals that were used were:

1. *Academy of Management Perspectives*
2. *Harvard Business Review*
3. *California Management Review*
4. *MIT Sloan Management Review*

Finally, the data were also selected using the database platform of ISI. Moreover, the criterion of collecting the data was equal to the criterion of the management academic-oriented corpus.

3.2.4 Terminology Extraction

Terminology management is a key component of many natural language processing activities such as machine translation (Langlais and Carl, 2004), text summarization and text indexation. With the rapid development of science and technology continuously increasing the number of technical terms, terminology

management is certain to become of the utmost importance in more and more content-based applications.

While the automatic identification of terms from texts has been the focus of past studies (Jacquemin, 2001), the current trend in Terminology Management (TM) has shifted to the issue of term networking. A possible explanation of this shifting may lie in the fact that Terminology Extraction (TE), although being a noisy activity, encompasses well established techniques that seem difficult to improve significantly upon (Patry and Langlais, 2005).

The goal of terminology extraction is to automatically extract relevant terms from a certain corpus. Penas et all 2001, support the point of view that "Terminology extraction (TE) tasks deal with the identification of terms which are frequently used to refer to the concepts in a specific domain." (Penas et all, 2001). According to most researchers, there are some standard methods for automatic terminology extraction:

i. Term extraction via morphological analysis: POS tagging and shallow parsing

ii. Term weighting with statistical information.

iii. Term extraction via syntactical analysis, which is primarily based on the first method and it definitely requires before POS tagging in order to be accomplished.

In most cases, approaches to term extraction that generated automatically make use of linguistic processors such as part of speech tagging, phrase chunking to extract terminological candidates, i.e. syntactically plausible terminological noun phrases, NPs (e.g. compounds "credit card", adjective-NPs "local tourist information office", and prepositional-NPs "board of directors" - in English, the first two constructs are the most frequent). Terminological entries are then filtered from the candidate list using statistical and machine learning methods. Once filtered, because of their low ambiguity and high specificity, these terms are on the whole useful for conceptualizing a knowledge domain or for supporting the creation of a domain ontology. In addition, terminology extraction is of vital importance for semantic similarity, knowledge management, human translation and machine translation, and so on.

3.3 Analytic Techniques and Tools

3.3.1 Term Extractor from Linguistic Computing Laboratory (LCL)

The initial step in our research was to identify and extract the key terms that are related with the two theories (RBV & Porter). To this direction, we use Termextractor, a free software package for terminology extraction, from the Linguistic Computing Laboratory (LCL), which is a part of Computer Science department of the University of La Sapienza. This group concentrates on areas of semantic area, computational linguistics, information retrieval and e-learning, and develops algorithms in the field of machine learning, natural language processing to solve problems that related to the building, learning and population of ontologies, classification etc. Online tools that are available are: Structural semantic interconnections, Term Extractor, Glossextractor, and finally Taxonomy validator.

In Termextractor, the detection of relevant terms is based on two steps: first, a linguistic processor is used to analyze text and extract typical terminological structures, like compounds (enterprise model), adjective-noun (local network) and noun preposition noun sequences (board of directors). Then, the list of terminological candidates is purged consistent with various filters. The effectiveness of Termextractor filters relies on statistical significance; consequently, larger corpora bring better results. We use the following filters:

- Domain Relevance: High frequency in a corpus is a property observable for both terminological and non terminological expressions (e.g. last week or real time). We compute the specificity of a terminological candidate concerning the target domain using comparative analysis across different domains. Thus a specific score, called Domain Relevance (DR), has been defined. A quantitative explanation of the Domain Relevance can be given according to the amount of information captured within the target corpus relating to a larger collection of corpora. In particular, given a set of n domains $\{D_1,..., D_n\}$ and related corpora, the domain relevance of a term t in class D_k is measured as:

$$DRt,k = \frac{P(t|Dk)}{\max_{1 \leq j \leq n} P(t|Dj)}$$

where the conditional probabilities (P(t|Dk)) are computed as:

$$E(P(t|Dk)) = \frac{ft,k}{\sum_{t' \in Dk} ft',k}$$

- Domain Consensus: Terms are concepts whose meaning is agreed upon large user communities in a given domain. A more careful analysis should consider not only the overall occurrence of a term in the target corpus but also its appearance in single documents. Distributed usage expresses a form of consensus tied to the consolidated semantics of a term (within the target domain) as well as to its centrality in communicating domain knowledge. A second relevance indicator called Domain Consensus (DC) measures the distributed use of a term in a domain D_k. This measure, which is novel in connection with terminology extraction algorithms in literature, simulates the consensus that a term must gain in a community before being considered a stable domain term. The consensus is high if a term has an even probability distribution across the documents of the domain. The distribution of a term t in documents $d \in D_k$ can be taken as a stochastic variable. The entropy H of this distribution expresses the degree of consensus of t in D_k. More precisely, this measure is expressed as follows:

$$DC_{t,k} = \sum_{d \in Dk} (P_t(d) \log (1 / P_t(d)))$$

where:

$$E(P_t(d_j)) = \frac{f_{t,j}}{\sum_{dj \in Dk} f_{t,j}}$$

- Term Cohesion or Lexical Cohesion: This measure evaluates the degree of cohesion among the words that compile a terminological string t and appears

to be proportional to the co-occurrence frequency and the length of the term. The cohesion is high if the words composing the term are more regularly found within the term than alone in texts.

$$TC(T) = \frac{|T| \log_{10} f(T)\, f(T)}{\sum_{W_i \in T} f(W_i)}$$

Here |T| is the number of words in term T, f(T) is the frequency of term T, and f(wi) is the frequency of word wi. This equation produces much higher values for single-word terms than multiword terms because the association of a single-word term only relies on its frequency. Therefore, we reduce the scale of association of single-word terms by taking only a part of the value (for example, 10 percent).

- Artificial Frequency: If a term is highlighted in a document, as: bold-italic-title-underlined-capitalized-colored-smallcaps, then the measure of its frequency, is increased by an integer k. More specifically, if a term occurs once in bold, Termextractor assigns to it a 5 artificial frequency rather than 1 raw frequency.

The final weight of term is a balanced linear combination of the main filters. More concretely:

$$TW = \alpha\, DR + \beta\, DC + \gamma\, TC + \delta\, AF$$

Where:

$\alpha = \beta = 0{,}4$

$\gamma = \delta = 0{,}1$

and

DC is a normalized entropy,

TC is a normalized term cohesion,

AF is a normalized artificial frequency.

The Termextraction web application is composed of 6 main phases:

1. Set Termextractor options: the user can set a number of options or to accept the default. Some of the available options are: select-deselect contrastive corpora

in order to calculate Domain Relevance, set the minimum or maximum length of terms, adjust the coefficients of the weight formula etc

2. Upload documents: the user can upload up to 20 different documents, or as many documents are needed, compressed in many formats or zipped archives. The effectiveness of Termextractor filters depends on statistical significance; therefore in general, larger corpora obtain better results.
3. Convert documents: documents in almost any format are converted in txt format.
4. Term Extraction: at this level the terminology is extracted and filtered
5. Terminology Validation: in this phase a partner or a team of partners validate the terminology.
6. Save-download Terminology: in the final phase, the terminology is saved or downloaded in txt or xml format.

3.3.2 Matlab

MATLAB is a numerical computing environment and fourth-generation programming language. Developed by The MathWorks, MATLAB allows matrix manipulation, data analysis, implementation of algorithms, creation of user interfaces, and interfacing with programs in other languages.

MATLAB was first adopted by control design engineers, but quickly spread to many other domains. It is now also used in education, in particular the teaching of linear algebra and numerical analysis, and is popular amongst scientists involved with image processing.

As a "Matrix Laboratory", offerss many convenient ways for creating vectors, matrices, and multi-dimensional arrays. In the MATLAB vernacular, a vector refers to a one dimensional ($1\times N$ or $N\times 1$) matrix, usually referred to as an array in other programming languages. A matrix generally refers to a 2-dimensional array, i.e. an $m\times n$ array where m and n are greater than or equal to 1. Arrays with more than two dimensions are referred to as multidimensional arrays.

3.3.3 Latent Semantic Analysis

In this section we suggest how latent semantic analysis, can help to distill the core research areas from a huge number of individual papers. With the intention of providing an accurate examination of RBV, we analyzed abstracts from all research articles in a chosen period of time. In order to get a longitudinal and evolutionary view of RBV, the collected data was amounted 1,870 articles abstracts from the years 1984 through 2010.

Latent Semantic Analysis (**LSA**) is a fully automatic mathematical and statistical technique for extracting and representing the contextual-usage meaning of words by statistical computations applied to a large body of text (Landauer & Dumais, 1998). It is not a traditional natural language processing or artificial intelligence program; it uses no humanly constructed dictionaries, knowledge bases, semantic networks, grammars, and it takes as its input only raw text parsed into words defined as unique character strings and separated into meaningful passages or samples such as sentences or paragraphs.

The first step is to represent the text as a matrix in which each row symbolizes a unique word and each column represents a text passage or other context. Each cell contains the frequency with which the word of its row appears in the passage indicated by its column. After that, the cell entries are subjected to a preliminary transformation, in which each cell frequency is weighted by a function that expresses both the word's significance in the particular passage and the extent to which the word type carries information in the domain of discourse in general. Latent Semantic analysis is similar to traditional factor analysis as its main purpose is the diminution of dimensionality of original data through singular value decomposition. In SVD, a rectangular matrix is decomposed into three other matrices. One component matrix describes the original row entities another describes the original column entities and the third is a diagonal matrix containing scaling values such that when the three components are matrix multiplied, the original matrix is reconstructed. As such, SVD results contain two sets of factor loadings, one for the documents and one for the terms. Each factor is related to a set of high-loading terms and high-loading documents, for that reason each factor stands for a word usage pattern (a theme). With LSA researchers can determine the number of factors and thus regulate the level of aggregation. At a lower level of

aggregation, loading semantic factors will depict common research themes and at a higher level of aggregation, key research areas.

❖ Pros and Cons of LSA

The advantage of SVD lies in the fact that documents are not represented by individual terms but by a smaller number of independent "artificial values" that can be specified by any one of several terms or combinations thereof. In this way, relevant documents that do not contain the terms of the query are retrieved via other terms in the query that can be properly identified. The resulting retrieval scheme allows one to order documents continuously by similarity to a query. A similarity threshold or a number of solutions can be specified depending on the user and task.

In such a way, SVD overcomes two fundamental problems faced by traditional lexical matching indexing schemes: *synonymy* (variability of word choice - that is different words can be used to express a concept and query terms may not match document descriptions) and *polysemy* (words can have multiple meanings and a user's query may match irrelevant meanings and thus retrieve irrelevant documents) (Deerwester et al., 1990).

Chapter 4. Results

4.1 Key phrases of RBT literature and Porter's theory literature

After having performed the software package Term Extractor from LCL on the corpus of Resource-Based Theory and Porter's theory literature, a list of domain terms was generated for both theories.

Providing a full depiction of the process we followed below it should be stressed that in phase 1 we left the default. In phase 2 we uploaded a set of documents that considered being relevant to model the domain under analysis. The collected data, relevant to resource-based view, amounted 106 papers cited in Strategic Management journal and covering a period 1992 to 2007. Similarly, two books of Porter, "Competitive Strategy" published in 1980 and "Competitive Advantage" published in 1985 constituted the data for Porter's theory. We transformed all the documents in txt. file after having deleted all the references and appendixes from all the documents. Furthermore, we entered a name for the terminology we wanted to create. In purpose of our research, we named the file of Resource Based View as 'RBV' and the file on Porter's theory as 'Porter'. Once the documents have been uploaded, the user is disconnected, to permit intensive data processing and to handle numerous users. At the end of extraction process (phases 3 and 4), in step 5 we received an e-mail that contained a link through which we could perform the validation of the extracted terminology. At this point we were able to accept or reject extracted terms and download the terminology in *xm*l or text format, or we could save it on the Termextractor server for further extension or validation (phase 6).

Terms are ordered according to the weight: a linear combination of Domain Relevance, Domain Consensus, Lexical Cohesion and Artificial Frequency. Once the validation has been completed, the terminology is stored on the server for a limited time period (two weeks). Having accomplished the same procedure two times for both RBV domain documents and Porter domain documents, we received two tables with key phrases that presented below. The initial list for RBT contained 548 extracted phrases, whereas the list Porter's theory consists of 376 phrases. After having conducting the terminology validation the number declined to 206 for RBT and 179 for Porter's theory. An analytic list with all the key terms along with their weight is

presented in Appendix 1. The results of the top 50 final key phrases are presented in Table.1 and Table 2.

Term	Weight
competitive advantage	0.967
resource-based view	0.893
scholarly community	0.863
firm size	0.831
sustainable competitive advantage	0.824
sale growth	0.785
resource-based theory	0.785
causal ambiguity	0.781
competitive environment	0.773
decision making	0.766
business strategy	0.762
managerial implication	0.759
theoretical framework	0.749
human capital	0.746
knowledge base	0.745
resource management	0.744
resource-based perspective	0.741
firm's ability	0.740
intangible asset	0.739
sustained competitive advantage	0.739
r&d intensity	0.737
economy of scope	0.735
life cycle	0.734
time-compression diseconomies	0.729
compression diseconomies	0.729
economic rent	0.728
product development	0.724
social complexity	0.724
net income	0.723
core competency	0.723
bundle of resources	0.722
stock price	0.722
industry average	0.720
organisational learning	0.719
internal consistency	0.718
customer satisfaction	0.716
competitive strategy	0.716
market value	0.714
transaction cost	0.714
organisational structure	0.713
absorptive capacity	0.713
r&d expenditure	0.711
direct relationship	0.708
strategic choice	0.706
ability of firms	0.703
profit margin	0.701

Table 1: Terminology of RBT

Term	Weight
competitive advantage	0.918
raw material	0.882
market share	0.878
competitive strategy	0.867
distribution channel	0.865
value chain	0.863
sale force	0.860
economy of scale	0.858
bargaining power	0.852
value activity	0.851
industry structure	0.847
entry barrier	0.845
product line	0.845
united state	0.842
relative position	0.826
production process	0.826
cost advantage	0.824
business unit	0.821
cost position	0.815
manufacturing process	0.807
competitive position	0.805
consumer goods	0.801
market position	0.800
competitive force	0.800
strategic implication	0.797
product design	0.795
learning curve	0.795
information system	0.791
geographic area	0.787
firm's position	0.787
strategic position	0.781
structural change	0.781
vertical integration	0.780
conventional wisdom	0.778
exit barrier	0.775
mobility barrier	0.774
excess capacity	0.773
firm's ability	0.773
order processing	0.771
product differentiation	0.771
potential entrant	0.770
buyer segment	0.762
government policy	0.761
backward integration	0.761
brand image	0.759
complementary product	0.757

Table 2: Terminology of Porter's theory

4.2 Determination of the research areas among the RBT discipline

Latent Semantic Analysis is a method in which singular value decomposition is used to form semantic generalisations from textual passages. It uses the fact that certain words appear in similar contexts to establish relationships between the meanings of the words. It allows textual passages to be compared to each other more intelligently than by directly comparing the words they share. Words that never appear together can be meaningfully compared etc

It is worth noting that the LSA was conducted only for RBT literature corpus. In contrast was not performed for the Porter's theory as its corpus contained only two of his books and no accurate results would have emerged. Now we present a comprehensive analysis about the technical details of our implementation of latent semantic analysis on the 1,870 papers abstracts, beginning with term reduction.

We started the analysis by compiling a list of all terms used in the RBV abstracts. Then we removed both those terms appearing in only one document and the stopwords, for example "and," "the" and so on. Finally we eliminated term suffices which is known as term stemming such as replacing "economic," "economical," "economy" by "econom." As a final step, we performed singular value decomposition (SVD) so as to recognize and keep these terms, which explain a large percentage of variability in the first 100 principal components. This filtering procedure resulted in a final dictionary of 1,726 terms.

A tabulation of the preserved terms and their appearance in the documents created a term frequency matrix with 1,726 rows (terms) and 1,870 columns (documents). The raw term frequencies were transformed using inverse document frequency which promotes the existence of scarce terms. After that the transformed term frequency matrix was subjected to a SVD. This decomposition generated both term and document eigenvectors, and square roots of eigenvalues, well-known as singular values, appearing in descending order. With the purpose of recognizing research areas and research themes at different levels of aggregation we chose to examine several solutions with different number of factors. Those involved 4 and 100 factors respectively. A term-by-factor matrix of term loadings was produced by term eigenvectors for each solution. In the same way document eigenvectors by singular values created a document-by-factor matrix of document loadings.

Once the number of factors were determined, the next step was to try to interpret them. To assist in this process the factors were 'rotated'. That did not change the

underlying solution, but rather the pattern of loadings was presented in a manner that was easier to interpret. So our latent semantic factors were rotated in order to simplify the list of terms related to each factor. The same rotation was utilized for the document factor loadings. In order to distinguish between important and unimportant term loadings, a related threshold value was introduced based on the probability distribution of term loadings. For clarity of interpretation, each term and each document should load high on only one factor, and as a consequence, a threshold associated with a tail probability of 1/k was sought for each k-factor solution. The same method was considered about documents loadings thresholds.

Using the retained term and document loadings, tables of high-loading terms and documents sorted by loading value were arranged for each factor solution. A co-examination of high-loading terms and documents for each factor solution generated factor labels. As LSA allows the researchers to decide the number of factors that believed to be informative, this study chose the 4-factor solution, the 10-factor solution and the 100-factor Solution (Appendix 3).

Consequently, the 4-factor solution produced four research areas in RBT literature, are expounded below:

Factor 1 → **Knowledge-Based View**

Factor 2 → **Strategic Alliances**

Factor 3 → **Dynamic Capabilities**

Factor 4 → **Resource-Based View**

The high loading terms for each of the 4-factors solutions sorted in descending order by their value are showed in Table 3. A more analytical list in respect to the High-Loading terms for each factor is given in Appendix 2.

Knowledge-Based View	Strategic Alliances	Dynamic Capabilities	RBV Framework
human	allianc	compet	diversif
resourcemanag	network	dynam	entri
practic	partner	process	intern
hrm	strategicalli	strategicmanag	foreign
system	cooper	organ	market
employe	ventur	framework	growth
impact	learn	econom	acquisit
manufactur	collabor	knowledgemanag	industri
effect	knowledg	perspect	econom
relationship	technolog	approach	subsidiari
organiz	joint	field	profit
result	relationship	concept	corpor
flexibl	supplier	view	internation
financi	innov	issu	global
strateg	interfirm	evolut	economi
posit	absorptivecapac	system	export
high	interorganiz	research	choic
qualiti	new	resourcebasedview	group
associ	trust	strategi	countri
turnov	biotechnolog	integr	ventur
manag	exchang	base	factor
measur	transactioncost	develop	resourcebasedview
link	knowledgetransf	present	institut
orient	relat	manag	state
compani	success	knowledg	invest

Table 3. High-Loading Terms for the 4-Factor Solution.

The same procedure was conducted about document loadings for the 4-factor solution.

Factor Label	Factor 4.1	Factor Loading
Knowledge-Based View	Sharma, A, Kesner IF., Academy of Management Journal 2007	0,0380266
	James P. Guthrie, Deepak K. Datta Organization Science, 2008	0,03631442
	Delios A., Beamish Paul w., Academy of Management Journal 2001	0,03599327
	Goddard J., Tavakoli M., Wilson JOS, Journal of Business Research, 2009	0,03457392
	Wiersema A., Bowen H.P., Strategic Management Journal, 2008.	0,03442031
	J. Michael Geringer, Stephen Tallman, David M. Olsen, Strategic Management Journal, 1999	0,03325561
	Luo Yadong, Strategic Management Journal, 2001	0,03298196
	Meyer K.E, Estrin S., Bhaumik S., Peng M.W., Strategic Management Journal 2008	0,03279187
	Lee IH, Marvel MR., European Management Journal, 2009	0,03218066

Table 4. High-loading Articles for the 4.1-Factor Solution

Factor Label	Factor 4.2	Factor Loading
Strategic Alliances	Dussauge P., Garrette B., Mitchell W., Strategic Management Journal, 2000	0,1171599
	Ireland RD., Hitt MA., Vaidyanath D., Journal of Management, 2002	0,1063013
	Mowery DC., Oxley JE., Silverman BS., Strategic Management Journal, 1996	0,1033598
	Huang JJ., Tzeng GH., Ong CS., Journal of the Operational Research Society, 2006	0,1021748
	Mayer KJ., Teece DJ., Journal of Economic Behavior & Organization, 2008	0,1001721
	Bae JH., Gargiulo, M., Academy of Management Journal, 2004	0,0988127
	Nooteboom B; Van Haverbeke W; Duysters G; Gilsing V, Van Den Oord A., Research Policy, 2007	0,0981145
	Sarkar MB., Echambadi R. Cavusgil ST.,Aulakh, P.S, Journal of the Academy of Marketing Science, 2001	0,0977362
	Gulati R., Strategic management journal, 1999	0,0973532
	Lin Z., Yang HB., Arya B., Strategic management journal, 2009	0,0958495
	Gerwin D, Ferris JS, Organization Science, 2004	0,0948591
	Quintana-Garcia C., Benavides-Velasco C., International Journal of Technology Management, 2006	0,0942981
	Teng BS, Journal of Management Studies, 2006	0,0940731
	Parise S., Henderson JC, IBM Systems Journal, 2001	0,0935903
	Li SX, Rowley TJ , Academy of Management Journal, 2002	0,093028
	Shenkar O, Li J., Organization Science, 1999	0,0928174
	Draulans J., deMan AP., Volberda HW, Long Range Planning, 2002	0,0914165
	Reid D., Bussiere D., Greenaway K., International Journal of Management Reviews, 2002	0,0902661

Table 5. High-loading Articles for the 4.2-Factor Solution

Factor Label	Factor 4.3	Factor Loading
Dynamic Capabilities	Mathews JA , Journal of Evolutionary Economics, 2002	0,0322922
	Easterby-Smith M, Lyles MA, Peteraf MA, Journal of Management, 2009	0,0300657
	Herrmann P., International Journal of Management Reviews, 2005	0,0297413
	Conner KR., Journal of Management, 191	0,02968123
	Durand R., Organization Studies, 2001	0,02870689
	Lavie D., Academy of Management Review, 2006	0,02853491
	Farjoun M., Strategic Organization, 2007	0,0283283
	Dickson PR., Journal of Evolutionary Economics, 2003	0,02766263
	Jones C., Organization Studies, 2001	0,02641868

Table 6. High-loading Articles for the 4.3-Factor Solution

Factor Label	Factor 4.4	Factor Loading
RBV Framework	Powell TC., Canadian Journal of Administrative Sciences, 2009	0,06986273
	Mahoney JT, Pandian JR, Strategic Management Journal, 1992	0,06933423
	Lockett A., Thompson S., Journal of Management, 2001	0,06594044
	Hoskisson RE., Hitt MA, Wan WP, Yiu D., Journal of Management, 1999	0,06551344
	Wiggins RR, Ruefli TW, Organization Science, 2002	0,06372622
	Silverman BS, Management Science, 1999	0,06213321
	Lee GK., Strategic Management Journal, 2008	0,06082062
	Leiblein MJ., Journal of Management, 2003	0,05970047
	Denrell J., Fang C., Winter SG.,Strategic Management Journal, 2003	0,05955775
	Young G., Journal of Management, 1995	0,05899426
	Stoelhorst JW, Van Raaij EM, Journal of Business Research, 2004	0,05898983
	Spanos YE, Lioukas E., Strategic Management Journal, 2001	0,05855419

Table 7. High-Loading Articles for the 4.4-Factor Solution

4.3 Identifying the dissemination of RBV and Porter Literature among the Academic-oriented journals as well as the Practitioners-oriented journals.

The third research question focused on the identification of the diffusion of RBV discipline and Porter discipline in the academic literature and in management practices mutually. For this purpose, it was first examined whether these fields are connected to each other afterwards to compute the level of strength of relationship between them. Thus, statistical measures of correlation and similarity were used so as to reveal the results.

The tools that were used to this section were the software package Wordsmith 5.0 and the MATLAB. Wordsmith tools is an integrated suite of programs for looking at how words behave in texts. This program automatically produces word lists based on one or more plain text files that can be seen in both alphabetical and frequency order. Therefore, the program was used to extract a lexical comparison of the 4 corpora.

Word	Total	RBV	PORTER	2006-till now		2001-05		1996-00		1990-95	
				Pract	Acad.	Pract.	Acad.	Pract.	Acad.	Pract.	Acad.
PERFORMANCE	20587	8441	253	186	2114	379	3771	141	2925	95	2282
STRATEGY	7041	1602	1348	304	337	375	861	250	877	130	957
KNOWLEDGE	6538	2647	46	137	736	287	1370	223	728	49	315
RESOURCE	5721	3028	51	26	400	67	867	25	762	24	471
MARKET	5648	2391	662	230	242	285	637	191	499	142	369
COMPETITIVE	5480	1540	1589	107	228	197	645	109	565	144	356
INFORMATION	4166	1119	169	167	330	233	599	177	612	140	620
ADVANTAGE	4091	1364	1098	75	170	142	482	57	400	95	208
HUMAN	4084	2057	50	51	298	110	507	60	526	37	388
BEHAVIOR	3805	144	186	72	760	107	1030	42	793	27	644
COST	3787	777	2016	99	78	132	208	62	214	69	132
DIFFERENT	3595	984	526	133	270	176	552	96	450	56	352
CORPORATE	3564	632	136	160	282	385	578	163	561	151	516
LEARNING	3401	961	187	88	280	123	760	75	601	58	268
CAPABILITIES	3381	2023	43	62	179	78	498	35	318	59	86
CONTROL	3361	1142	138	61	223	75	529	61	607	64	461
RELATIONSHIPS	3335	876	52	81	443	155	680	65	619	37	327
INNOVATION	3305	703	78	346	309	277	674	136	428	44	310
CAPITAL	2943	1705	128	51	184	132	321	91	203	52	76
EMPLOYEE	2767	773	8	47	402	124	535	56	410	32	380
INTERNATIONAL	2745	1488	44	26	178	102	325	61	292	30	199
LEADERSHIP	2595	116	146	180	419	305	599	94	403	49	284
GROWTH	2364	1074	206	127	102	215	215	76	194	36	119
QUALITY	2356	775	248	69	179	111	287	58	294	92	243
ENVIRONMENT	2159	728	50	65	123	99	358	61	300	71	304
DIVERSIFICATION	2136	1182	76	2	76	5	264	6	265	4	256
INDUSTRIES	2077	574	746	47	47	80	172	68	159	41	143
MARKETS	1965	720	130	135	87	174	219	135	166	75	124
CUSTOMER	1952	586	84	249	137	293	209	128	103	94	69
INTERNAL	1801	867	89	46	109	70	221	29	184	31	155
CULTURE	1784	263	18	93	183	157	321	58	396	17	278
COMPETITORS	1776	426	1019	55	8	62	47	43	48	35	33
DIVERSITY	1756	768	10	6	262	20	344	37	199	10	100
CUSTOMERS	1750	399	111	298	55	359	95	204	61	133	35
TRAINING	1744	404	55	32	178	55	298	37	308	23	354
GLOBAL	1642	202	200	137	90	249	172	115	207	121	149
MARKETING	1626	648	240	138	28	213	60	103	50	90	56
HR	1615	905	0	24	176	26	228	21	190	1	44
NETWORK	1575	295	23	53	213	93	393	37	331	26	111
SERVICES	1575	732	132	122	58	151	102	90	79	67	42
INTEGRATION	1565	354	334	43	124	45	269	34	203	16	143
SKILLS	1556	909	90	61	46	74	102	47	90	24	113
NETWORKS	1444	317	1	71	171	88	400	32	250	21	93
ALLIANCES	1405	428	11	9	96	79	357	23	317	29	56
EXTERNAL	1379	656	40	26	123	30	253	18	123	14	96
ASSETS	1360	861	105	29	20	76	95	37	78	15	44
VALUES	1358	392	13	48	168	82	208	44	218	24	161
ENTRY	1333	201	443	2	87	11	235	6	230	9	109
ACQUISITION	1325	651	69	17	64	32	208	24	133	6	121
CULTURAL	1273	299	8	29	133	76	264	40	249	8	167

The initial wordlist was submitted to a filtering process in order to exclude usual stopwords (Appendix 4) for example: and, as, the, this, who, will and kept out words with frequency less than 50. These words as they did not have any research significance where filtered out. The final wordlist amounted 5.955 words.

Then the statistical data of word frequencies were analyzed in MATLAB environment using five tests measuring correlation and similarity among the 4 corpora: Spearman's Rank correlation, Pearson correlation, Cosine similarity, Minkowski distance and Jaccard's coefficient. Correlation analysis is used to describe the strength and direction of the linear relationship between two variables. The most ordinary measure of correlation is the Pearson's correlation and the Spearman's rank correlation. An alternative way to explore the relationship between the corpora is through similarity measures. A similarity measure is the converse of a distance function. Similarity functions take a pair of points and return a large similarity value for nearby points, a small similarity value for distant points.

These measures are briefly presented below.

- **Pearson's correlation coefficient**

Pearson correlation reflects the degree of linear relationship between two variables. In addition is defined only if both the standard deviations are finite and nonzero. More specifically Pearson correlation calculations are based on the assumption that both X and Y values are sampled from populations that follow a normal distribution, at least approximately, although with large samples, this assumption is not important. Pearson correlation coefficients is given by the type:

$$r = \frac{S_{xy}}{S_x \cdot S_y}$$

where S_{xy} is the covariance of X and Y.

Pearson's correlation can only ranges from -1 to +1. The sign out of the front indicates whether there is a positive correlation or a negative correlation. The size of the absolute value provides an indication of the strength of the relationship. A correlation of +1 means, that there is a perfect positive linear relationship between variables. In contrast, a correlation of -1 shows a completely negative linear connection between variables. Finally, a correlation of 0 specifies no relationship between the two variables.

❖ Spearman's rank correlation coefficient

The Spearman's Rank Correlation Coefficient (r_s) is used to calculate the strength of the relationship between two sets of data. This is a non-parametric measure of statistical dependence between two variables and is often thought of as being the Pearson correlation coefficient between the ranked variables. The Spearman rank correlation coefficient can be used to give an R-estimate, and is a measure of monotone association that is used when the distribution of the data make Pearson's correlation coefficient undesirable or misleading.

The Spearman rank correlation coefficient is defined by

$$r' \equiv 1 - 6 \sum \frac{d^2}{N\left(N^2 - 1\right)},$$

where d is the difference in statistical rank of corresponding variables.

If there are no repeated data values, a perfect Spearman correlation of +1 or −1 appears when each of the variables is a perfect monotone function of the other. A positive Spearman correlation coefficient corresponds to an increasing monotonic trend between X and Y. In contrast a negative Spearman correlation coefficient corresponds to a decreasing monotonic trend between X and Y. The sign of the Spearman correlation indicates the direction of association between X and Y. If Y tends to increase when X increases, the Spearman correlation coefficient is positive. If Y tends to decrease when X increases, the Spearman correlation coefficient is negative. A Spearman correlation of zero indicates that there is no tendency for Y to either increase or decrease when X increases.

❖ Minkowski Distance

The most commonly investigated rules, or metrics, for describing distances in a multidimensional space have been instances of the generalized Minkowski metric. The Minkowski distance ($\mathbf{L_m}$) between two strings is the geometric distance between two inputs and uses a variable scaling factor, *power*. The Minkowski distance is a metric on Euclidean space which can be considered as a generalization of both the Euclidean distance and the Manhattan distance. In general, the distance d_{ij} between any two points in n-dimensional space may be calculated as:

$$d_{ij} = \left[\sum_{i=1}^{n} |x_{ik} - x_{jk}|^{p} \right]^{\frac{1}{p}}$$

with k being the index of the coordinates, and p determining the type of distance. Typically, Minkowski's distances are of degree 1, 2 and ∞. There are three special cases of the Minkowski distance:

- p = 1: this distance measure is often called city block distance**,** or Manhattan distance.
- p = 0 or 1: when the vectors are binary numbers, the elements of the vector code for membership to a set (e.g 1 means the elements are part of the set, 0 means it dies not). In this case, the degree 1 distance is broadly referred to as the Hamming distance or the symmetric difference distance
- p = 2: with p equalling 2, we obtain the well-known Euclidean distance.
- p = ∞, is the maximum difference between any component of the vectors, (Lmax norm, L . norm) distance.

A disadvantage of the Minkowski method is that if one element in the vectors has a wider range than the other elements then that large range may 'dilute' the distances of the small-range elements.

❖ **Cosine similarity**

Cosine Similarity **cos(θ)** is an arbitary mathematical measure of how similar two vectors are on *n* dimensions by finding the cosine of the angle between them. This measure is often used to compare documents in text mining. In addition, it is used to measure cohesion within clusters in the field of Data Mining. Given two vectors of *A* and *B*, the cosine similarity, *θ*, is represented below:

$$\mathbf{cos(\theta)} = \frac{\mathbf{A} \cdot \mathbf{B}}{|\mathbf{A}| \cdot |\mathbf{B}|}$$

The resulting similarity ranges from a scale of [-1 , +1]. A cosine similarity of -1 means that the vectors are exactly opposite while a value of 1 is yielded when the documents are equal. Finally, when the cosine measure is 0, the documents have no similarity.

In the case of information retrieval, the cosine similarity of two documents will range from 0 to 1, since the term frequencies (tf-idf weights) cannot be negative. The angle between two term frequency vectors cannot be greater than 90°.

It must be noted that the cosine similarity does not depend on the length. This allows documents with the same composition, but different totals to be treated identically which makes this the most popular measure for text documents.

❖ **Jaccard's Coefficient**

The Jaccard similarity coefficient also known as the Jaccard index **(J)** is a statistical measure used for comparing the similarity and diversity of sample set and is defined as the size of the intersection divided by the size of the union of the sample sets:

$$J(A,B) = \frac{|A \cap B|}{|A \cup B|}$$

If two sets are identical, the Jaccard index is equal to 1. If we have non-overlapping sets, the Jaccard index is equal to 0.

❖ **Dynamics of RBV literature and Porter's literature discipline**

The impact of diffusion of the RBV literature and Porter's literature within the academic and the practitioner field was revealed after having conducting the tests that were mentioned above. For this purpose we separated the 20-year period (1990-2009) into four 5-year periods, 1990-1995, 1996-2000, 2001-2005, and finally 2006-till now. It should be noted that the first period of time includes six years between 1990 and 1996 as the biggest part of papers cited on Web of Science of ISI exhibited only their titles without their abstracts and key-phrases. These tests were performed for both RBV and Porter for each period of time and field independently.

With the aid of Spearman's correlation coefficient and Pearson's correlation was confirmed that there was a **significant relationship** between the four fields (RBV, Porter, Academics, and Practitioners). Both tests showed a **strong positive relationship** between RBV and Academics field that maintained this relationship at the same levels until the period 2001-2005**.** In the period 2006 until now, the relationship between the two fields showed a slight decrease. Concerning the

diffusion of RBV within the Practitioner field, there was a medium positive relationship that started to increase over the period 2006 until now.

On the other hand, the results showed that **Porter** was **strongly positive related** with the field of **Practitioners** up to 2005. After that period, their positive relationship was reducted. The connection between Porter's theory literature and academics fluctuated in low but positive levels during the period 2006 until now (r_s=0,389, r=0, 3269). Finally, the results demonstrated a positive connection between RBV framework and Porter's theory that ranged in moderate levels (r_s=0, 3749, r=0, 5318).

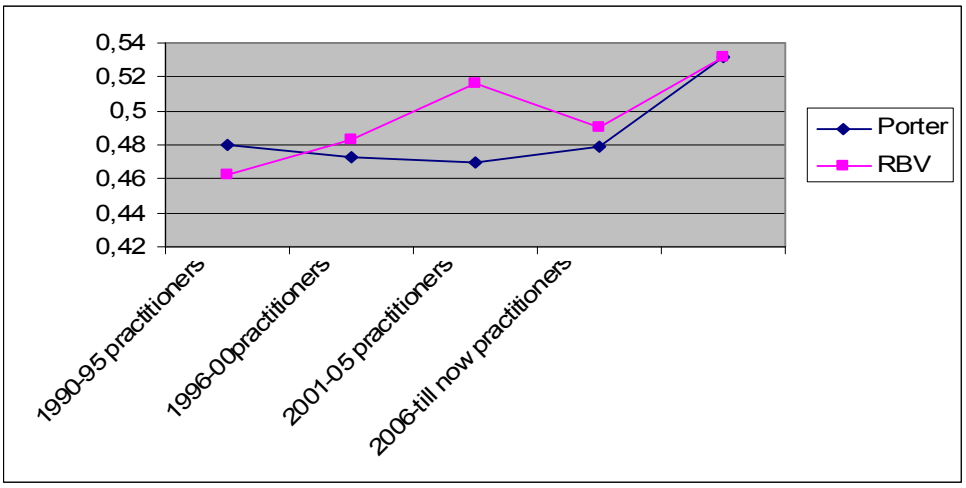
In order to obtain more general results, we need to be able to compare relationships more systematically. One of the most tried and tested mathematical techniques for doing this is to measure the *distance* between two points. Conversely, we might try to measure the *similarity* between two points (small distances corresponding to large similarities and large distances corresponding to small similarities.

Hence, the diffusion of RBV and Porter among the Academic and Practitioner field can be measured through an alternative perception by calculating distances (small distance means high similarity, and vice versa). Three separate similarity measures were conducted: Cosine distance, Minkowski distance and Jaccard's coefficient. The findings illustrated the strong positive relationship between the RBV and the academic field as these measures reached the minimum levels of distance. In addition, the **similarity** between the RBV and the field of academics exceeded the similarity level among practitioners. However, it should be mentioned that the level of similarity between the RBV and Academics remained constant reaching the highest point (and as a consequence the lowest distance) in the period of 2001-2005. In contrast, these measures showed that the RBV and the field of practitioners were general speaking **dissimilar.** That conclusion is obvious as the distances of three measures were calculated very high.

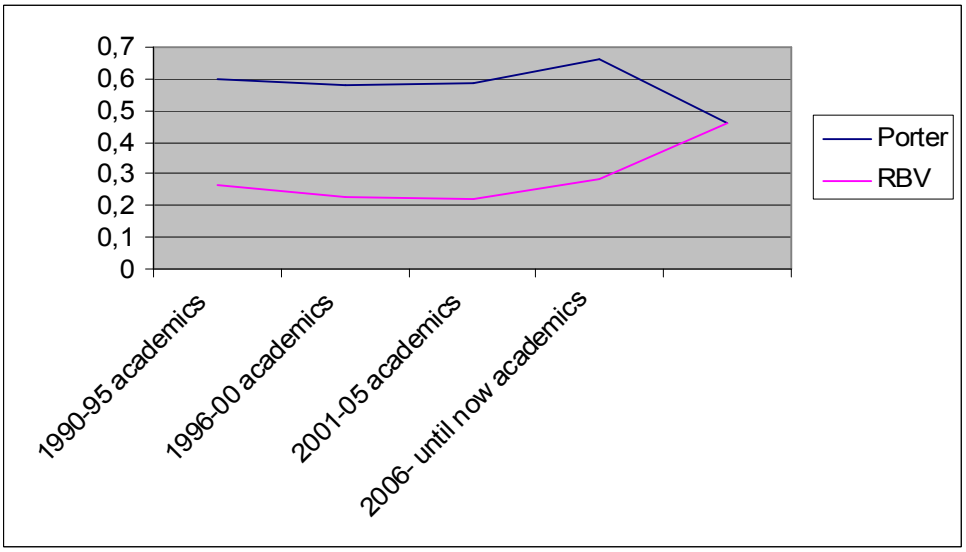
Subsequently, the measures of similarity verified the small positive relationship of Porter literature among the field of Academics as they experienced the highest levels of all distances, having the maximum value from 2006 until 2009. In the field of Practitioners, the findings confirmed the strongly positive connection with Porter and the great amount of similarity over time.

Finally, by analyzing these measures, the resource-based perspective and Porter's framework had showed low levels of similarity. Concretely, the similarity tests in respect to the distances they measured were exceedingly calculated.

Appendix 5 provides the graphs for all the measures that were examined. The graph from the Pearson Correlation (Graph 1) and Cosine Similarity (Graph 2) are presented below to comprehend the expansion of the two theories across time.



Graph 1. The diffusion within the field of Practitioners according to Pearson Correlation



Graph 2: The diffusion within the field of Academics according to Cosine Similarity

Chapter 5. Summary and Discussion of the Results

This study endeavors to employ an inductive perspective on computational linguistics methods to empirically investigate the core of RBV elements and the diffusion of RBV perspective and Porter's framework among the Academic journal literature and the Practitioners journal literature. For this purpose three research questions were answered: **first** was the recognition of key phrases that define the RBV literature and the Porter's literature, **second** to identify the research areas that have appeared within the RBV literature and **third** to discover the degree of diffusion of Resource-based-view literature as well as the Porter's literature on the field of academics and practitioners from 1990 to 2009 in order to reveal the impact of RBV and Porter's perspective during time.

To begin with, a theoretical approach about competitive advantage was given. Then, a presentation in respect to Resource-based view and Porter's theory was conducted. Finally, a criticism according to RBV and Porter's framework was introduced.

With regard to the methodology, the section introduced the concept of Computational Linguistics concentrated on the field of Corpus linguistics. The section was continued by the description of how the corpora were designed concerning the period between 1990- 2009. This study has constructed four corpora: (1) the Resource-Based View corpus (2) the Porter theory corpus (3) the Management Academic-oriented corpus and (4) the Management Practitioner-oriented corpus. At last, there was a comprehensive description about the software packages and tools that were used. Term extractor form LCL, MATLAB and Latent Semantic Analysis appeared to be very useful tools for the implementation of the study. LSA that was conducted only on the resource-based theory defined four research areas: a) Knowledge-based view, (b) Strategic alliances, (c) Dynamic capabilities and (d) Resource-based view framework.

Finally, Wordsmith was used to operate a lexical comparison of the 4 corpora in order to explore the diffusion of RBT literature and Porter's theory literature among the field of academic and practitioners-oriented literature. Correlation tests and similarity measures were applied to the word frequencies of each corpus that appeared from Wordsmith. The findings showed that **RBT** literature is **strongly positive related** with the **academic**-oriented literature, while the **Porter's theory** literature

presents a **strong positive connection** the field of **practitioners.** Moreover, results showed a medium positive relationship between RBT and Porter's theory. Finally it was studied the dynamics of RBT literature and Porter's theory literature within the field of academics and practitioners during the examined period. The strong relationship between RBT and academics constantly remained in high levels until 2005, and then a small reduction appeared in 2006 up today. On the other side, Porter's theory emerged positively in relation to the field of practitioners and continued to increase until 2005. During the last 5-period their strong relationship reduced slightly.

Chapter 6. Conclusions

The particular study has carried out a terminology extraction method on RBT related literature as well as to Porter-related literature with the purpose to identify the intellectual core of these theories. Afterwards, latent semantic analysis on RBT has been presented in an attempt to determine the most significant research areas developed within RBT. It should be mentioned that the same procedure has not performed on Porter's theory because the related corpus includes only two of his books. Finally, it has investigated the degree of diffusion of resource-based-view literature and Porter's literature on the field of academics and practitioners from 1990 to 2009, by conducting correlation and similarity tests.

The key terms that emerged for the RBV and the Porter's theory represent the most important issues to appear in the RBT literature and the Porter-related literature during the last 20 years. That was achieved by the utilization of computational linguistics method.

The results of the second question showed the presence of four research areas within the RBT discipline: (a) Knowledge-based view, (b) Strategic alliances, (c) Dynamic capabilities and (d) Resource-based view framework, which are consistent to existing literature.

Factor 1 that represents the «knowledge-based view» (KBV), confirms the link among the resource-based view. Originating from the strategic management literature, this perspective builds upon and extends the resource-based theory of the firm (RBV) initially promoted by Penrose (1959) and later expanded by others (Wernerfelt 1984, Barney 1991, Conner 1991). Many authors asserted that knowledge is the most strategically significant of the firm's resources for organizations (Conner and Prahalad, 1996; Grant, 1996a). Its proponents claim that heterogeneous knowledge bases and capabilities among firms are the major components of sustained competitive advantage and superior corporate performance (Decarolis and Deeds, 1999; Kogut and Zander, 1995). Although some researchers attribute KBV as a part of resource-based theory, others deviate significantly from standard RBV by adopting a mope-pluralistic epistemology (Spender, 1996; Tsoukas, 1996).

Factor 2 labeled as «strategic alliances». But how strategic alliances are related with RBT? Strategic alliances occur when firms in weak strategic positions need the resources that alliances bring as well as when firms in strong social positions

capitalize on their assets so as to create alliance opportunities (Eisenhardt and Schoonhoven, 1996). By extending the resource-based view of the firm, alliances are thought as cooperative relationships driven by strategic resource needs and social resource opportunities. So firms essentially use alliances to have access to other firm's valuable resources. The resources that can be obtained through alliances can enable firms to share costs or even to gain differentiable product technologies. Das and Teng (2000, 56) proposed four crucial components of a resource-based theory of strategic alliances: rationale, formation structural preferences and performance.

The third factor that arose from latent semantic analysis was «dynamic capabilities». The capability perspective is derived from the resource-based view, and Teece et al. (1997, 515) has described dynamic capabilities as 'the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly-changing environments'. Dynamic capabilities, seems to summarize the evolutionary nature of resources and capabilities, emerged to enhance the RBV (Eisenhardt and Martin 2000; Helfat 1997). Academics have tried to combine the two literature areas and Williamson (1991, 76) commented that as these two literatures deal with core issues, possibly they are joined. It is worth noting that the RBV has been attacked for ignoring factors surrounding resources, instead assuming that they simply "exist". Dynamic capabilities attempt to overpass these problems by adopting a process approach: by acting as a buffer between firm resources and the changing business environment, dynamic resources help a firm regulate its resource mix and thereby retain the sustainability of the firm's competitive advantage, which otherwise might be quickly eroded. As a result, while the RBV emphasizes resource choice, or the selecting of appropriate resources, dynamic capabilities emphasize resource development and renewal.

Finally, the fourth research area that emerged was RBV-framework. The essence of the RBV lies in the emphasis on resources and capabilities as the genesis of competitive advantage: resources are heterogeneously distributed across competing firms and are imperfectly mobile which makes this heterogeneity persist over time (Barney, 1991, Penrose, 1959, Wernerfelt, 1984). Daft (1983) noted that "firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc; controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness". The resource-

based perspective posits that the heart of strategy is defined by the firm's unique resources and capabilities (Rumelt, 1984).

The results of the third research query demonstrated that the resource-based theory has been particularly developed on the academic field while the appearance of RBT in the field of practitioners was quite undeveloped. Moreover, it has been investigated the strength of relationship (diffusion) of RBT within the academic-oriented literature as well as in the practitioner-oriented literature. For this purpose, it has been examined the period from 1990 to 2009 that was separated into four 5-years periods. The outcomes illustrated the **strong positive relationship** between the **RBV** and **Academics,** which remained in high levels until 2005, having a small reduction the last 5-year period (2006-untill now). As concerns the field of practitioners, there was a weak positive relationship with the RBV that continued until 2001. Then the connection between the two concrete fields showed to increase.

Conversely, as concerns **Porter's theory**, the result s showed a **strong connection** among the **practitioner**-field which means that this theory has been corroborated in practice. These fields are positively related over the period 1990-2009 and it is confirmed by the existing results. With reference to the academic disciplines, Porter's theory appeared to have low levels of dissemination as the relationship between them fluctuated in low but positive levels up to 2009.

Finally, the examination of the findings resulted that there is a medium positive relationship between the resource-based theory and Porter's framework, which means that these theories are not totally conflicted.

The findings of the study point out some valuable conclusions. **First**, the results suggest that resources, dynamic capabilities and knowledge are closely interlinked. This conclusion is corroborated by the four main trends that emerged within RBT: (i) the knowledge-based view (ii) strategic alliances (iii) dynamic capabilities and (iv) the resource-based view. Similar studies that conducted an empirical examination of the RBT revealed similar results. (Acedo et al, 2006).

Second, the results show the intense growth of the Resource-Based Theory in an academic base. As might be expected most of the articles belong to the extended area of management. It can be stated that the Resource-Based Theory of the firm is a theoretical trend, which has been developed principally in the fields of management and strategy. Because of the fact, that the RBV framework has been criticised and

hence its associated terminologies (resources, processes, and capabilities) lack clear definitions, the dissemination in the field of practitioners is not widespread.

Third, it can be acknowledged that the majority of the Practitioners pay attention to generic strategies (low- cost strategy, differentiation strategy, and focus strategy) in order to compete effectively against rivals. But during the last years, the field of practitioners has started to concentrate on the resource-based view and the importance of the resources and capabilities so as to achieve a competitive advantage.

Finally, our results denote the complementarity between the RBT and Porter's framework. This relationship is also confirmed by the research that was composed by Spanos and Lioukas (2001). Although the two perspectives try to diagnose the way a firm competes in a different manner, in fact both can co-exist and form an actual firm behavior. As Wernerfelt (1984) point out, Porter's framework and the resource-based theory represent the two sides of the same coin. The resource-based theory by highlighting firm specific efforts in creating and combining resources to attain a competitive advantage can be considered as the Strength and Weaknesses of the SWOT analysis, whereas the industry analysis provides the Opportunities and Threats part. As a result, both theories must be carefully examined my firms in order to compete effectively and hence to achieve a sustainable competitive advantage.

It is worth mentioning the contribution of the Computational linguistics method in order to identify the intellectual core of the RBT discipline. By the application of this method we sought to identify the different trends that emerged within the RBT, and hence to explore the influence of the two theories within the population of scientific contributions.

To conclude, the results of the present study can be thought as a significant factor for further research. The resource-based theory has been examined mostly at a theoretical level since a great number of the articles has used this theory as a theoretical foundation. The effectiveness of the resource-based approach must be confirmed in practice, in an attempt to constitute a reliable and useful framework in the field of practitioners.

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Appendices

Appendix 1: Terminology of the Theories Literature

Term RBT	Weight				
competitive advantage	0.967	organisational structure	0.713	subjective assessment	0.655
resource-based view	0.893	absorptive capacity	0.713	digit sic code	0.654
scholarly community	0.863	r&d expenditure	0.711	international market	0.652
firm size	0.831	business unit	0.697	international operation	0.652
sustainable competitive advantage	0.824	diversification strategy	0.697	rent generation	0.651
sale growth	0.785	tacit knowledge	0.692	cultural diversity	0.649
resource-based theory	0.785	organisational culture	0.691	percent increase	0.648
causal ambiguity	0.781	value creation	0.689	environmental uncertainty	0.648
competitive environment	0.773	cross-sectional nature	0.686	supply chain	0.648
decision making	0.766	manufacturing sector	0.684	distinctive competency	0.647
business strategy	0.762	production process	0.684	foreign direct investment	0.645
managerial implication	0.759	external environment	0.683	marketing capability	0.643
theoretical framework	0.749	foreign market	0.682	natural environment	0.643
human capital	0.746	organisational capability	0.681	social capital	0.639
knowledge base	0.745	superior financial	0.681	hypothesis testing	0.639
resource management	0.744	entry mode	0.678	physical asset	0.639
resource-based perspective	0.741	scale item	0.678	economic value	0.637
firm's ability	0.740	ceteris paribus	0.678	environmental regulation	0.637
intangible asset	0.739	dynamic capability	0.677	employee turnover	0.636
sustained competitive advantage	0.739	isolating mechanism	0.670	direct investment	0.636
r&d intensity	0.737	net profit	0.669	strategic planning	0.634
economy of scope	0.735	employee skill	0.668	replacement cost	0.632
life cycle	0.734	liability of newness	0.668	managerial skill	0.631
time-compression diseconomies	0.729	corporate strategy	0.667	corporate financial	0.630
compression diseconomies	0.729	factor market	0.667	exploratory nature	0.630
economic rent	0.728	management team	0.667	knowledgeable informant	0.625
product development	0.724	entropy measure	0.666	entry barrier	0.624
social complexity	0.724	team member	0.666	economic return	0.623
net income	0.723	international experience	0.664	agency problem	0.623
core competency	0.723	environmental condition	0.664	labour productivity	0.623
bundle of resources	0.722	confidence interval	0.664	competitive position	0.621
stock price	0.722	management capability	0.662	marginal return	0.621
industry average	0.720	strategic asset	0.660	assembly plant	0.621
organisational learning	0.719	employee involvement	0.660	job satisfaction	0.621
internal consistency	0.718	contingency approach	0.659	operational efficiency	0.621
customer satisfaction	0.716	population of firms	0.657	geographic location	0.621
competitive strategy	0.716	multinational corporation	0.657	environmental issue	0.621
market value	0.714	capital intensity	0.657	commercial bank	0.620
transaction cost	0.714	market share	0.656	fixed-effect model	0.620
direct relationship	0.708	opportunistic behaviour	0.656	external source	0.619
strategic choice	0.706	senior manager	0.656	cost leadership	0.618
ability of firms	0.703	shareholder wealth	0.656	first-mover advantage	0.618
profit margin	0.701	bargaining power	0.655	employment security	0.617
strategic alliance	0.699	excess capacity	0.655	export sale	0.617

Term of RBT	Weight		
corporate reputation	0.614	proactive stance	0.571
geographic region	0.614	prevention technology	0.571
foreign subsidiary	0.613	governance mechanism	0.571
partial derivative	0.612	credence quality	0.570
intense competition	0.611	core rigidity	0.570
technological know-how	0.611	intangible benefit	0.569
employee motivation	0.611	threat of multicollinearity	0.568
mode of entry	0.611	economic reform	0.568
core competence	0.611	insurance coverage	0.566
imperfect imitability	0.608	academic discipline	0.565
strategic change	0.607	strategic response	0.560
quality of products	0.605	reduced waste	0.560
communication channel	0.605	supplemental analysis	0.559
product diversification	0.604	social issue	0.559
knowledge creation	0.604	productivity improvement	0.558
press release	0.603	geographic area	0.546
positional advantage	0.602	cost saving	0.513
industry growth	0.602	negative impact	0.469
industry concentration	0.602	growth rate	0.465
incentive compensation	0.602	venture capitalist	0.458
internal capability	0.600	intellectual property	0.454
environmental strategy	0.598	distribution channel	0.434
institutional pressure	0.598	line extension	0.418
cost advantage	0.597	raw material	0.410
repeat client	0.596	attractive option	0.367
skilled personnel	0.596	middle ground	0.361
stock return	0.596		
financial institution	0.596		
r&d spending	0.595		
alliance partner	0.595		
rate of return	0.595		
degree of internationalization	0.582		
personnel psychology	0.581		
unobserved heterogeneity	0.580		
technological opportunity	0.579		
medium-sized enterprise	0.579		
cash margin	0.579		
emerging economy	0.579		
cost-based synergy	0.575		
horizontal acquisition	0.575		
international diversity	0.575		
stock ownership	0.575		
knowledge-based perspective	0.575		
strategic fit	0.572		

Term of Porter's Theory	Weight		
competitive advantage	0.918	complementary product	0.757
raw material	0.882	industry leader	0.754
market share	0.878	technological change	0.753
competitive strategy	0.867	structural analysis	0.748
distribution channel	0.865	organizational structure	0.748
value chain	0.863	service organization	0.744
sale force	0.860	outbound logistics	0.742
economy of scale	0.858	differentiation strategy	0.741
bargaining power	0.852	process technology	0.741
value activity	0.851	technology development	0.740
industry structure	0.847	competitor	0.739
entry barrier	0.845	buyer group	0.739
product line	0.845	decision maker	0.739
united state	0.842	industry evolution	0.738
relative position	0.826	switching cost	0.738
production process	0.826	industry's product	0.736
cost advantage	0.824	low-cost position	0.733
business unit	0.821	brand identification	0.731
cost position	0.815	proprietary technology	0.729
manufacturing process	0.807	delivery time	0.729
competitive position	0.805	buyer's value chain	0.729
consumer goods	0.801	competitor analysis	0.729
market position	0.800	nature of competition	0.728
competitive force	0.800	capacity utilization	0.728
strategic implication	0.797	purchase decision	0.727
product design	0.795	product variety	0.723
learning curve	0.795	substitute product	0.723
information system	0.791	competitor behavior	0.721
geographic area	0.787	cash flow	0.721
firm's position	0.787	competitive scope	0.720
strategic position	0.781	price cutting	0.720
structural change	0.781	cost driver	0.719
vertical integration	0.780	relative cost position	0.719
conventional wisdom	0.778	bargaining leverage	0.718
exit barrier	0.775	cost reduction	0.717
mobility barrier	0.774	planning process	0.717
excess capacity	0.773	ancillary equipment	0.716
firm's ability	0.773	diversified firm	0.714
order processing	0.771	capital requirement	0.714
product differentiation	0.771	price premium	0.712
potential entrant	0.770	people express	0.708
buyer segment	0.762	focus strategy	0.706
government policy	0.761	federal express	0.701
backward integration	0.761	corporate level	0.700
brand image	0.759	policy choice	0.698

Term of Porter's Theory	Weight		
japanese firm	0.697	financial community	0.637
shared activity	0.695	efficient scale	0.637
long-term contract	0.695	cost behavior	0.635
price sensitivity	0.695	vertical linkage	0.634
firm's value chain	0.694	necessar ily	0.633
financial service	0.693	integra tion	0.611
capital investment	0.693	qual ity	0.611
institutional factor	0.692	econ omies	0.609
private label	0.692	logistical arrangement	0.609
foreign firm	0.692	customer loyalty	0.606
purchased input	0.688	offshore drilling	0.606
oil company	0.686	attractive return	0.606
experience curve	0.685	long-term profitability	0.599
posi tion	0.684	host government	0.599
financial resource	0.683	fighting brand	0.599
profit potential	0.682	effective retaliation	0.599
source of differentiation	0.681	technological leadership	0.597
buyer value	0.680	transference of skills	0.595
recreational vehicle	0.680	vertical integration	0.586
threat of substitution	0.678	tapered integration	0.586
human resource management	0.678	pattern of interrelationships	0.586
cost leadership	0.675	r&d program	0.585
resource management	0.675	key uncertainty	0.585
component fabrication	0.675	working capital	0.585
life cycle	0.674	durable goods	0.585
cumulative volume	0.670	casual user	0.584
competi tion	0.669	no-frills carrier	0.582
horizontal strategy	0.669	multipoint competitor	0.581
behavior of costs	0.667	capacity expansion	0.580
price cut	0.667	short-term profitability	0.579
potential competitor	0.664	product innovation	0.579
intangible interrelationship	0.661	internal entry	0.578
senior management	0.661	business unit manager	0.578
structural attractiveness	0.659	uniqueness driver	0.578
dif ferentiation	0.645	personal relationship	0.574
intensity of rivalry	0.645	broadly-targeted competitor	0.573
rule of competition	0.645	importance of interrelationships	0.565
application engineering	0.645	capacity addition	0.561
first-mover advantage	0.644	government regulation	0.500
acquisition candidate	0.642	growth rate	0.397
ability of firms	0.642		
financial result	0.641		
process innovation	0.641		
inte gration	0.640		
point of contact	0.638		

Appendix 2: High-Loadings Terms for the 4-Factor Solutions

Knowledge-Based View	Strategic Alliances	Dynamic Capabilities	RBV Framework
human	allianc	compet	diversif
resourcemanag	network	dynam	entri
practic	partner	process	intern
hrm	strategicalli	strategicmanag	foreign
system	cooper	organ	market
employe	ventur	framework	growth
impact	learn	econom	acquisit
manufactur	collabor	knowledgemanag	industri
effect	knowledg	perspect	econom
relationship	technolog	approach	subsidiari
organiz	joint	field	profit
result	relationship	concept	corpor
flexibl	supplier	view	internation
financi	innov	issu	global
strateg	interfirm	evolut	economi
posit	absorptivecapac	system	export
high	interorganiz	research	choic
qualiti	new	resourcebasedview	group
associ	trust	strategi	countri
turnov	biotechnolog	integr	ventur
manag	exchang	base	factor
measur	transactioncost	develop	resourcebasedview
link	knowledgetransf	present	institut
orient	relat	manag	state
compani	success	knowledg	invest
conting	internationaljointventur	oper	surviv
sampl	productdevelop	articl	environment
humancapit	project	identifi	entrymod
sustainedcompetitiveadvantag	share	advantag	advantag
marketorient	structur	theori	acquir
moder	extern	capabl	influenc
custom	portfolio	sustain	unit
product	allianceform	evolutionari	determin
implement	experi	case	ltd
train	process	rbv	busi
work	acquisit	competit	effect
us	benefit	argu	technolog
shrm	partnership	provid	financi
test	knowledgemanag	futur	competit
adopt	entrepreneuri	new	resourc
indic	role	understand	product
team	activ	propos	transactioncost
servic	examin	corecompet	return
empir	form	review	govern
examin	govern	complex	corporatediversif
mediat	ti	strateg	multin
informationtechnolog	inform	emerg	intens
small	embedded	organis	environ
found	type	chang	strategicmanag
oper		conceptu	expans
employ		discuss	cost
signific		illustr	japanes
perform		outsourc	specif
survei		analysi	posit
data		literatur	foreigndirectinvest
level		organiz	emerg
sme		paradigm	high

Knowledge-Based View	Strategic Alliances	Dynamic Capabilities	RBV Framework
busi		decis	merger
profit		valu	empir
role		sustainablecompetitiveadvantag	size
environment		design	small
fit		applic	analysi
relat		creat	sampl
spanish		creation	show
innov		scienc	examin
configur		offer	evid
variabl		theoret	mover
equat		make	result
perceiv		us	moder
size		transform	china
percept		form	multinationalenterpris
enterpris		gener	strategi
labor		contribut	reput
		busi	base
		rent	sme
		challeng	differenti
		inform	resourcebasedtheori
		resourcebasedtheori	
		natur	
		boundari	
		informationtechnolog	
		informationsystem	

Appendix 3: Factor Labels of 10-Factors Solutions and 100-factor Solutions

F10.#	Factor Label
F 10.1	The RBV of the firm
F 10.2	Alliance partners
F 10.3	Technology and economic evolution
F 10.4	Knowledge Management
F 10.5	Market orientation and innovation
F 10.6	International growth of small firms
F 10.7	Customer service and value creation
F 10.8	Cooperative networks
F 10.9	A perspective on strategic groups
F 10.10	Dynamaic Capabilities in manufacturing

F100.#	Factor Label (F100.1-F100.50)
F 100.1	Organizational ambidexterity
F 100.2	Alliance issues in SME's
F 100.3	Trust & Commitment
F 100.4	Orientation to sustained competitive advantage
F 100.5	Vertical integration and transaction cost economics
F 100.6	Seeking for sustainability in unstable environments
F 100.7	International outsourcing
F 100.8	Acquisition integration and performance
F 100.9	Manufacturing strategy and plant performance
F 100.10	Knowledge transfer within multinational corporations
F 100.11	Proactive environmental strategies and regulation
F 100.12	Operation management
F 100.13	Knowledge management systems
F 100.14	Market orientation and decision making on state firms
F 100.15	Issues on organizational capabilities
F 100.16	Competitive marketing paradigms
F 100.17	Corporate governance and social responsibility
F 100.18	A taxonomy of intellectual capital
F 100.19	Logistics services and innovation
F 100.20	Market entry mode and uncertainty
F 100.21	Capital assets and strategic investments
F 100.22	Global marketing strategy
F 100.23	Experience-based learning processes
F 100.24	Improve implementation processes
F 100.25	A cognition structure
F 100.26	Small and medium sized suppliers and value creation
F 100.27	Issues on knowledge transfer
F 100.28	Commercializing academic research (AC)
F 100.29	Export intensity and performance
F 100.30	Emerging economies and institutional changes
F 100.31	A process theory of organizational learning
F 100.32	Real options and accumulation processes (AG)
F 100.33	Organizations and logistics capabilities
F 100.34	International configuration on local SME's
F 100.35	Toward a resource-based theory (AJ)
F 100.36	Supplier/customer relatioships
F 100.37	Foreign and domestic factors for competition
F 100.38	Knowledge intensity and implications for growth
F 100.39	International business structure
F 100.40	Empirical analysis of RBT (AO)
F 100.41	Culture's influence on competitiveness (AP-AR)
F 100.42	Constsructing core competencies
F 100.43	Social capital on value creation
F 100.44	Customer fit and interactions with suppliers orientation
F 100.45	The influence of culture on developing countries and MNE
F 100.46	Enterprise systems implementation and competitive advantage
F 100.47	Market entry and capital intensity
F 100.48	Relationship between quality and innovativeness
F 100.49	Organizational knowledge creation theory
F 100.50	Managerial perceptions of core competences

F100.#	Factor Label (F100.51-F100.100)
F 100.51	Radical innovation process
F 100.52	Trust between interorganizational relationships
F 100.53	Relationship between human capital and employment
F 100.54	A framework for operant resources
F 100.55	Information technology and firm performance
F 100.56	Sources of competitive advantage
F 100.57	Strategic organizational change
F 100.58	Knowledge management in e-business
F 100.59	The concept of human capital
F 100.60	Customizing complex products
F 100.61	The role of subsidiaries in MNE's
F 100.62	The influence of boundaries in human and intellectual capital
F 100.63	Strategic planning and product innovation
F 100.64	The internationalization of entrepreneurial firms
F 100.65	The impact of tacit knowledge on management team
F 100.66	Institutional governance systems and competitive advantage
F 100.67	Agglomeration economies and knowledge clusters
F 100.68	Heterogeneity and differentiation strategy through HRM
F 100.69	Environmental uncertainty
F 100.70	Developing core competences
F 100.71	An approach to organizational configuration
F 100.72	Relatioship between timing of resources exploration, growth and market returns
F 100.73	The strategic management of manufacturing enterprises
F 100.74	HRM practices and employees' trust
F 100.75	International market entry modes
F 100.76	Governance systems and policy
F 100.77	Knowledge assets value creation-analytical process
F 100.78	Complexity in organizational routines
F 100.79	Market orientation and core competencies
F 100.80	Managing external environment
F 100.81	Diversity and international intensity
F 100.82	High velocity environments and core competences
F 100.83	Effects of absorptive capacity and portfolio on new product development
F 100.84	Adoption of multiple process technologies and the impact of absorptive capacity
F 100.85	Supply net management and strategic purchasing
F 100.86	R&D and knowledge intensity
F 100.87	Cooperation and intellectual capital as partners of strategic alliances
F 100.88	International growth and sustainability
F 100.89	Liability of foreignness and international joint ventures in transition economies
F 100.90	Intellectual capital and efficiency
F 100.91	Technological regimes and firm's heterogeneity
F 100.92	Organizational Configurations and RBV
F 100.93	A resource-based approach for competitiveness
F 100.94	Dynamic capabilities in a dynamic environment
F 100.95	A knowledge-based perspective of strategic management
F 100.96	Theory and future research in strategic management field
F 100.97	Organization perspectives on business level
F 100.98	Positioning on human capital
F 100.99	Organizational integration and boundaries
F 100.100	Strategic management of SME's

Appendix 4: Stop-list

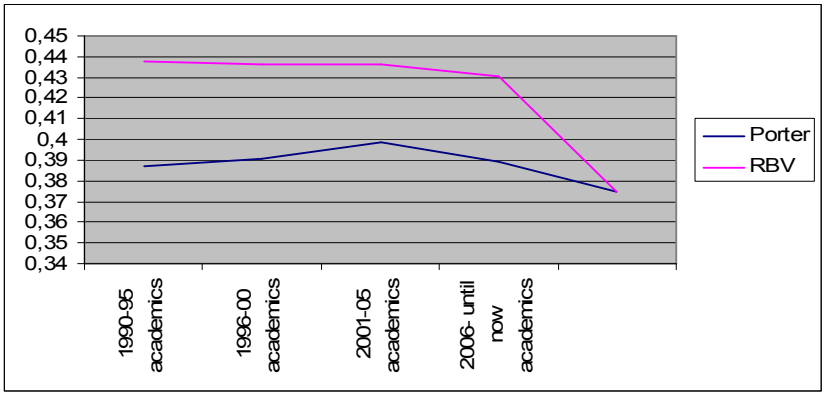
TABLE 1 : STOPLIST						
A	BESIDES	EVER	IT	OFTEN	STILL	UPON
ABILITY	BETWEEN	EVERY	ITS	ON	STRONGLY	US
ABLE	BIAS	EVERYTHING	ITSELF	ONCE	SUCH	USED
ABOUT	BOTH	EXACTLY	JUST	ONLY	THAN	USUALLY
ABOVE	BUT	FINALLY	LATER	ONTO	THAT	VERY
AFTER	BY	FOR	LIKE	OR	THE	VITAL
AGAIN	CAN	FROM	LIKELY	OTHER	THEIR	WAS
AGO	CANNOT	FULL	MAIN	OTHERS	THEM	WE
ALL	CAPABLE	FULLY	MAINLY	OUR	THEN	WELL
ALMOST	CAREFULLY	GET	MANY	OVER	THERE	WERE
ALREADY	CERTAIN	GOING	MAY	POSSIBLY	THEREBY	WHAT
ALSO	COMPLETELY	GOOD	MIGHT	POSSIBLE	THESE	WHEN
ALTHOUGH	CONSEQUENTLY	HAD	MORE	PROBABLY	THEY	WHERE
ALWAYS	COPYRIGHT	HAS	MOREOVER	PROBABLE	THINK	WHEREAS
AM	COULD	HAVE	MOST	REALLY	THIS	WHEREVER
AMONG	DESPITE	HAVING	MUCH	SAID	THIS,	WHETHER
AN	DID	HE	MUST	SAY	THOROUGH	WHICH
AND	DO	HENCE	MY	SEEK	THOSE	WHILE
ANOTHER	DOES	HER	NEARLY	SEEKS	THOUGH	WHO
ANY	DOING	HERE	NECESSARY	SHOULD	THROUGH	WHOLE
ARE	DONE	HIS	NEED	SIMILAR	THUS	WHOM
AS	DON'T	HOW	NEEDED	SIMILARLY	TO	WHOSE
AT	DURING	HOWEVER	NEEDS	SIMPLE	TOO	WHY
AWAY	EACH	I	NEITHER	SIMPLY	TOWARD	WILL
BASED	EARLY	IF	NEVER	SINCE	TOWARDS	WITH
BE	EASE	IMMEDIATELY	NON	SO	TYPICALLY	WITHIN
BECAUSE	EASIER	IMPORTANT	NONE	SOME	UNDER	WITHOUT
BEEN	EASILY	IN	NOR	SOMEHOW	UNFORTUNATELY	WOULD
BEFORE	EASY	INDEED	NOT	SOMETIMES	UNLESS	YOU
BEHIND	ENOUGH	INTO	NOW	SOON	UNLIKE	YOUR
BEING	EVEN	IS	OF	SPECIFIC	UNLIKELY	

Appendix 5: Results of 5 Tests Measures

1. Spearman Rank Correlation Coefficient

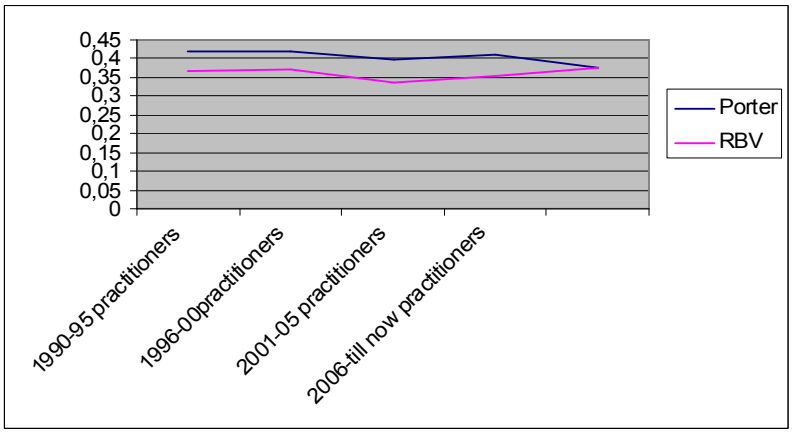
Academics

Period	Porter	RBV
1990-95	0,386752	0,437957
1996-00	0,390713	0,435915
2001-05	0,398549	0,4363692
2006- till now	0,389342	0,4304041
RBV	0,374956	1
Porter	1	0,374956



Practitioners

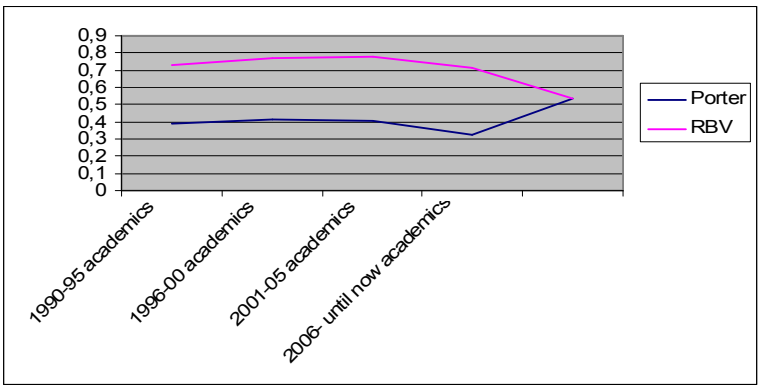
Period	Porter	RBV
1990-95	0,419807	0,368817
1996-00	0,418747	0,373519
2001-05	0,396694	0,33466
2006-till now	0,409465	0,352241
RBV	0,374956	1
Porter	1	0,374956



2. Pearson Correlation

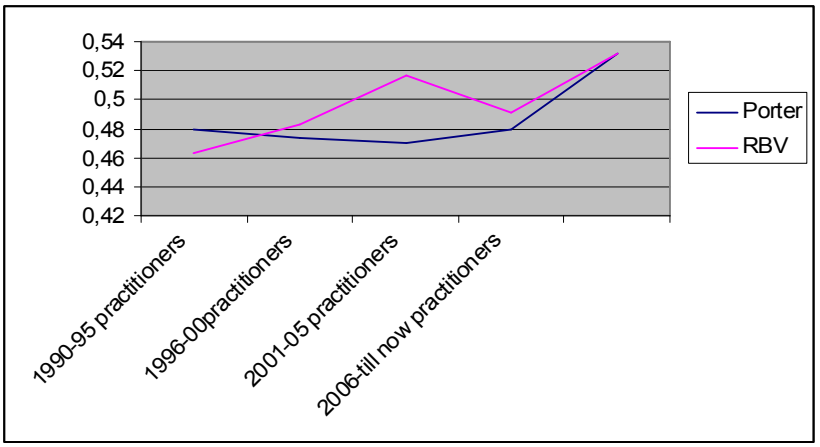
Academics

Period	Porter	RBV
1990-95	0,39038	0,732314
1996-00	0,412529	0,76759
2001-05	0,402021	0,776902
2006- till now	0,326907	0,70955
RBV	0,531834	1
Porter	1	0,531834



Practitioners

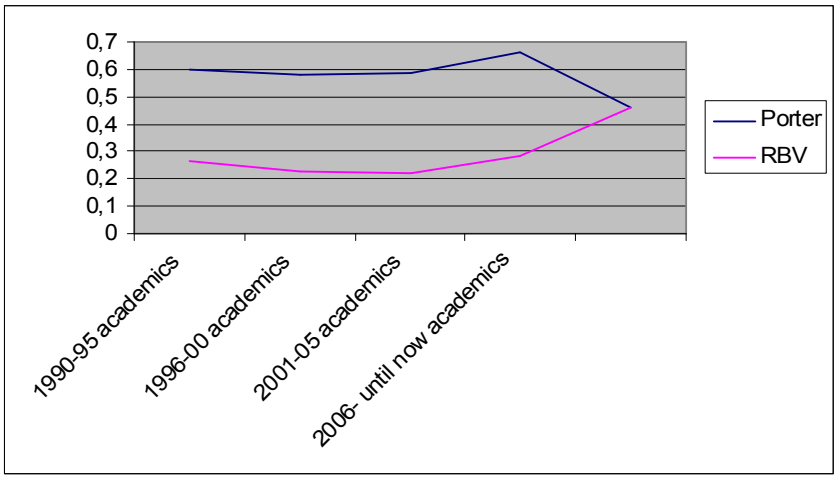
Period	Porter	RBV
1990-95	0,4798	0,462782
1996-00	0,473256	0,482902
2001-05	0,46960	0,516221
2006- till now	0,479159	0,490569
RBV	0,531834	1
Porter	1	0,531834



3. Cosine Similarity

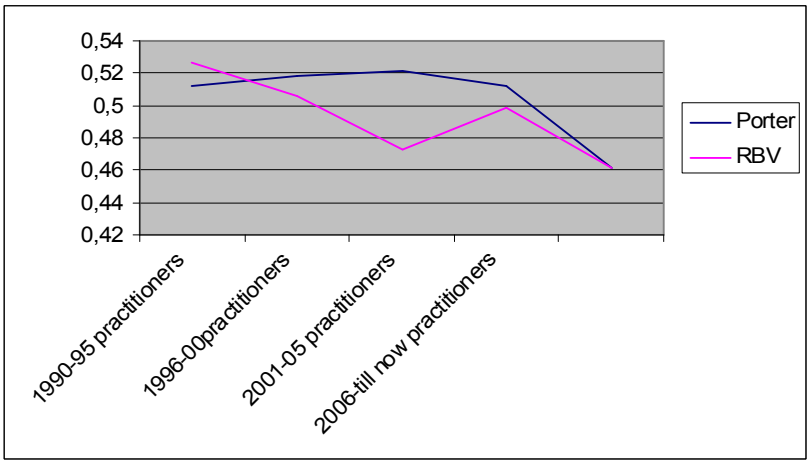
Academics

Period	Porter	RBV
1990-95	0,6007	0,2630
1996-00	0,57889	0,228341
2001-05	0,5894	0,21926
2006- till now	0,66359	0,28556
RBV	0,46149	0
Porter	0	0,46149



Practitioners

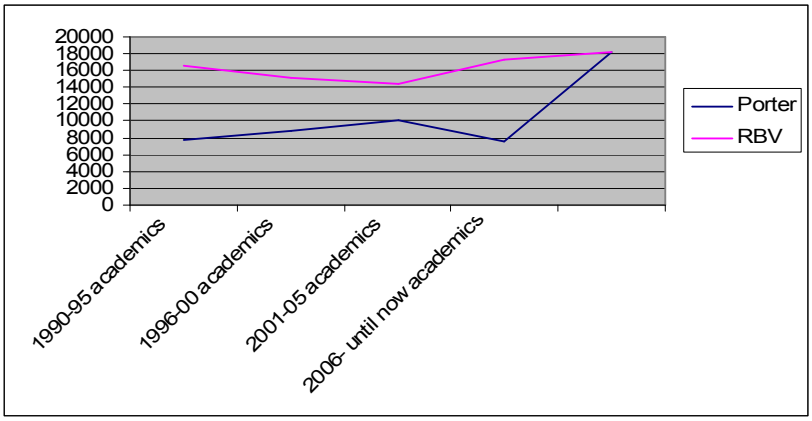
Period	Porter	RBV
1990-95	0,5118	0,52654
1996-00	0,517927	0,50633
2001-05	0,521107	0,47316
2006- till now	0,51189	0,498431
RBV	0,46149	0
Porter	0	0,46149



4. Minkowski Distance

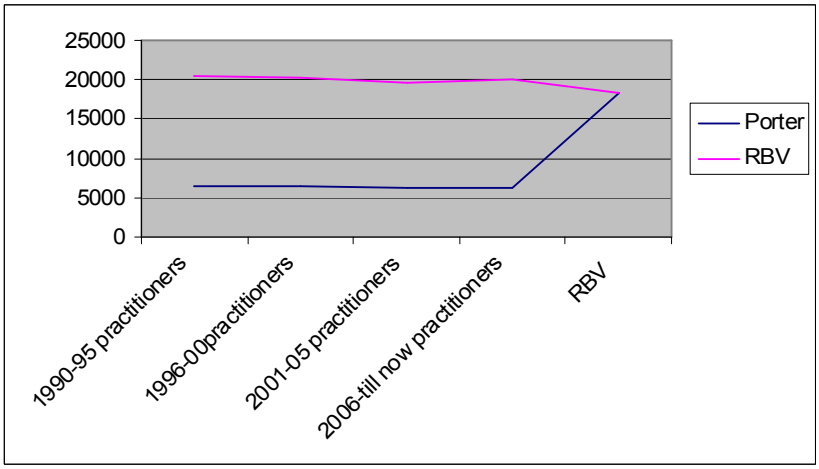
Academics

Period	Porter	RBV
1990-95	7757,162	16516,65
1996-00	8802,178	15206,03
2001-05	10067,19	14365,78
2006- till now	7609,297	17221,32
RBV	18244,84	0
Porter	0	18244,82



Practitioners

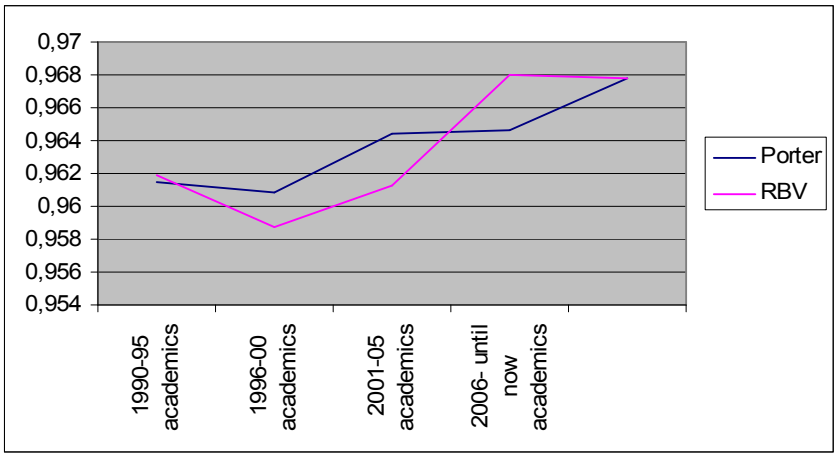
Period	Porter	RBV
1990-95	6509,824	20468,27
1996-00	6367,51	20212,87
2001-05	6180,727	19531,08
2006- till now	6292,281	20083,64
RBV	18244,84	0
Porter	0	18244,82



5. Jaccard's Coefficient

Academics

Period	Porter	RBV
1990-95	0,961438	0,961912
1996-00	0,960897	0,958764
2001-05	0,964383	0,961253
2006- till now	0,964667	0,96801
RBV	0.96776	0
Porter	0	0,96776



Practitioners

Period	Porter	RBV
1990-95	0,954181	0,972542
1996-00	0,949336	0,966124
2001-05	0,954084	0,959351
2006- till now	0,950526	0,964041
RBV	0.96776	0
Porter	0	0,96776