



# Resource-based competition: three schools of thought and thirteen criticisms

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## Abstract

**Purpose** – The field of research on resource-based competition is full of nuanced terminology and misunderstandings. This has led to confusion, and thus the authors offer a critical review, which provides a structure and clarity to this subject. The paper aims to discuss these issues.

**Design/methodology/approach** – This analysis structures the literature on resources, capabilities, and competences into three distinct schools of thought: the resource-based view (RBV) of the firm, the rational-equilibrium school; the dynamic capability-based view of the firm, the behavioural-evolutionary school; and the competence-based view of the firm, the social constructionist school.

**Findings** – The authors uncover 13 criticisms of the most widely adopted theoretical framework of the RBV of the firm – Valuable-Rare-Imperfectly imitable-Organisation (VRIO).

**Research limitations/implications** – The misinterpretation and neglect of the classic scholarly work may help to explain why the VRIO framework has been elevated from a view to a theory and why it has received so much attention.

**Practical implications** – The authors show how the relative ease of measuring resources as compared to (dynamic) capabilities and (core) competencies has helped raise the profile of RBV.

**Originality/value** – This analysis contributes to management research by illustrating the deviation among the three schools of thought; the authors show how this has contributed to wide terminological confusion and offer a structure to help researchers situate their work within the relevant school of thought.

**Keywords** Resource-based competition, Resource-based views of the firm, VRIO – Valuable-Rare-Imperfectly imitable-Organisation

**Paper type** Research paper

## Introduction

Why do some firms persistently outperform others? To answer this central question, two competing paradigms dominate strategic management thinking: the external factors paradigm and the internal factors paradigm. The former appears to share the view that rents flow from privileged product market positions (the exploitation of market power). As a result, approaches in this paradigm (e.g. the competitive forces approach developed by Porter (1980)[1]) tend to focus on product market imperfections, entry deterrence, and strategic interaction. The latter, also known as the resource-based view (RBV) of the firm, contends that the main sources of competitive advantage (CA) are proactively created and maintained by firms through acquiring and/or accumulating their strategic resources[2]. As a result, the central question actually now becomes: “of all the resources currently controlled by a firm, which are most likely to be a source of CA” (Barney and Clark, 2007; Black and Boal, 1994; Collis and Montgomery, 1995; Hunt and Derozier, 2004; Priem and Butler, 2001a; Teece *et al.*, 1997; Wernerfelt, 1984).



The RBV of the firm is a stream of research that also encompasses several important explanations of persistent performance differences, namely that of the RBV of the firm (Barney, 1991, 1995; Barney and Clark, 2007; Wernerfelt, 1984), the dynamic capability (DC) based view of the firm (Teece *et al.*, 1997; Winter, 2003), and the (core) competence-based view (CBV) of the firm (Hamel and Heene, 1994; Prahalad and Hamel, 1990; Sanchez and Heene, 2004, 1997b; Sanchez *et al.*, 1996b).

The field of research on resource-based competition is full of nuanced terminology and misunderstandings. Of course, this partly reflects the intense interest and lively debate within the management research community, but it does nonetheless present difficulties for scholars attempting to begin research in the field. Furthermore, we also recognise that within this paradigm there exists a dominant theoretical framework – VIRO that deserves attention. Our intention here is not then to provide an exhaustive interpretation of all papers that have been written about the RBV; rather, the purpose of this paper is to advance our understanding of this stream of research by structuring the literature into three distinct schools of thought and to use this as a lens to critically discuss the most widely adopted theoretical framework in this line of research, the VIRO. This analysis contributes to management research by illustrating the deviation among the three schools of thought and this helps to explain some of the criticisms that have emerged. We show how this has contributed to wide terminological confusion and offer a structure to help researchers position their work within the relevant school of thought. Significantly, this paper contributes to the debate on fundamental conceptual and theoretical criticisms of Valuable-Rare-Imperfectly imitable-Organisation (VRIO) (Sanchez, 2008) and argue that it does not adequately address the notion of resource-based competition; furthermore its claim to be a general view of resources is unwarranted theoretically and unsupported empirically.

### **The RBVs: one paradigm, but three schools of thought**

The RBV of the firm is a stream of research that also encompasses three closely related, but different schools of thought: RBV of the firm; the DC-based view of the firm and the (core) CBV of the firm. Some scholars consider the three views to be one school of thought that share the same underlying theoretical structure. For example, Barney and Clark (2007) suggest that there seems to be a battle for the label of this common theoretical framework. They go on to argue that while these theories have a slightly different way of characterizing firm attributes they share the same underlying theoretical structure. They state that:

*In this sense, resource-based theory is not really about resources, per se, but about the attributes that resources must possess if they are to be a source of sustained competitive advantage [emphasis added] (Barney and Clark, 2007, pp. 249-250).*

In this context, Newbert (2007) classifies this line of research into:

- the “early incarnations of the RBV” (Barney, 1991); and
- the “more contemporary theoretical extensions” (Prahalad and Hamel, 1990; Teece *et al.*, 1997).

Others consider these views to be two distinct schools of thought. For example, Makadok (2001) identifies two rent creation mechanisms:

- (1) the “resource-picking mechanism” which adopts the “Ricardian perspective”, and has been codified into “a RBV” (Barney, 1986; Wernerfelt, 1984); and
- (2) the “capability-building mechanism” which adopts the “Schumpeterian perspective”, and has been codified into “a dynamic-capability view” (Dierickx and Cool, 1989; Nelson and Winter, 1982; Teece *et al.*, 1997).

He argues that, in some cases, these two mechanisms “complement each other”; in other cases however, they “substitute each other”.

Others consider these views to be three distinct schools of thought. Seoudi (2009) is an interesting example. Based on a “thorough analysis” of the underlying philosophical and epistemological foundations and the fundamental assumptions employed by the key scholars of the resource-, dynamic capability-, and competence-based views, she classifies this line of research into three schools: “the rational-equilibrium school (the RBV); behavioral-evolutionary school (the DC); and the social constructionist school (the CBV)”. She argues that although each school represents a “unique lens”, some authors equate the RBV with all three schools. In addition, very often, scholars consider the DC and CBVs to be one research view while attributing the differences to mere semantic preferences and a proliferation of terms that in many cases refer to the same phenomena.

In this paper, we adopt the position that these three views are three distinct schools of thoughts, but also house non-trivial differences. Table I outlines a metatheoretical scheme for classifying the major schools of thought within the resource-based paradigm. We use this classification to address the notion of resource-based competition and examine the most widely adopted theoretical framework in this stream of research – the VRIO framework.

### **The RBV of the firm and the VRIO framework**

The RBV of the firm is one of the most widely accepted views within strategic management, and “the number of proponents who have elevated it from the status of ‘view to theory’ is growing” (Priem and Butler, 2001a; Sanchez, 2008). It does not only serve as “a major theoretical foundation in the scholarly literature [. . .], but, it is also prominently featured in all major textbooks on strategic management, research, teaching, and consulting agendas” (Newbert, 2007). Furthermore, a number of significant studies (Lippman and Rumelt, 1982; Rumelt, 1984, 1991; Wernerfelt, 1984[3]; Barney, 1986, 1991, 1995[4] among others) have developed the foundation of what has become known as the resource-based theory (RBT) of the firm. Table II summarizes the foundational building blocks of this body of theory.

### **A theoretical framework**

The work of Barney (1991, 1995), Barney and Arkan (2001) and Barney and Clark (2007) provide a theoretical framework of the RBV of the firm. This has four key elements:

- (1) assumptions;
- (2) firm resources;
- (3) attributes of strategic resources; and
- (4) the path to sustained CA.

	RBV (rational-equilibrium)	The RBV's paradigm DC (behavioural-evolutionary)	CBV (social constructionist)
Terminologies	Unique resources (Makadok, 2001)	Zero-level capabilities, e.g. organizational routines; first-order DC, e.g. NPD capability and higher-order change capabilities; e.g. strategic innovation (Winter, 2003)	Core competence (Prahalad and Hamel, 1990), competence building/destroying (Sanchez <i>et al.</i> , 1996a)
Epistemology	Terminologies that differentiate between the first school and the other two schools include: resources vs productive services (Penrose, 1959); systematic resources vs discrete resources; elementary resources vs higher-level resources, goods vs intermediate goods (Makadok, 2001); traits vs configurations (Black and Boal, 1994); ordinary (undifferentiated) resources vs embedded (firm-specific) resources (Dierckx and Cool, 1989)	Positivist (Seoudi, 2009)	Constructionist (Seoudi, 2009; Spender, 1994, 1996)
<i>Basic organizational assumptions</i>			
Environment	The environment is perceived as concrete, that events and processes are hard, measurable, and determinant (Daft and Weick, 1984). It is, therefore, objective, independent, accurately measured by managers (Seoudi, 2009)	The environment is perceived as objective, independent, though, inaccurately perceived by managers (Seoudi, 2009)	The environment is perceived as subjective, difficult to penetrate, or changing, and, thus, less analyzable. It is, therefore, enacted, created by managerial cognition and action (Daft and Weick, 1984; Penrose, 1959; Seoudi, 2009)
Degree of strategic choice	Minimal: exogenous market forces determine firm behaviour (Seoudi, 2009). As such, the key for this organization is discovery through intelligence gathering, rational analysis, vigilance, and accurate measurement. This organization will utilize linear thinking and logic and will seek clear data and solutions (Daft and Weick, 1984)	Moderate: firms act on the market and are acted upon by its forces (Seoudi, 2009)	Maximal (Seoudi, 2009): the organization to some extent may create the external environment. The key is to construct, coerce, or enact a reasonable interpretation that makes previous action sensible and suggests some next steps. The interpretation may shape the environment more than the environment shapes the interpretation (Daft and Weick, 1984). This reflects what Hamel and Prahalad (1989) calls strategic intent

(continued)

**Table I.**  
The paradigm of the RBVs of the firm

Table I.

	RBV (rational-equilibrium)	The RBV's paradigm DC (behavioural-evolutionary)	CBV (social constructionist)
Role of managers	Managers are rational; they optimize (Seoudi, 2009). They are stock-pickers trying to beat the market. They gather information and analysis to outsmart the resource market in picking (selecting) resources, similar to the way that a mutual fund manager tries to outsmart the stock market in picking stocks (Makadok, 2001)	Managers are bounded rational; they satisfies (Seoudi, 2009)	Managers are entrepreneurs; they synthesize and create (Penrose, 1959; Seoudi, 2009). They are architects. They design and construct organizational systems to enhance the productivity of whatever resources the firm acquires. They make their contribution largely through architecting and constructing capabilities internally (Makadok, 2001)
<i>Implications of basic assumptions</i>	Retrospective, static: which resources yield sustained rents in equilibrium? What mechanisms sustain rents? (Seoudi, 2009)	Retrospective, dynamic (Seoudi, 2009): how do markets co-evolve with firm capabilities and technologies? (Hellat and Raubitschek, 2000; Seoudi, 2009)	Prospective, dynamic: how do firms create future markets through learning new competences and creating new knowledge? (Hamel and Prahalad, 1989; Penrose, 1959; Seoudi, 2009)
<i>Base disciplines, fundamental perspectives, and theories</i>	<i>fundamental perspectives, theories, and mechanisms</i> Industrial organization economics (Sanchez, 2008; Seoudi, 2009). The Ricardian perspective: this implies that heterogeneity in performance is due to ownership of resources that have differential productivity. Based on this perspective the logical question is: "how do firms come into possession of resources with heterogeneous productivity in the first place?" (Makadok, 2001). The SFM concept (Barney, 1986). Resource-picking mechanism (Makadok, 2001)	Behavioural economics and evolutionary economics (Seoudi, 2009)	Schumpeter's entrepreneurial theory: the theory of the growth of the firm; organization theory; knowledge-based view; and social and cognitive psychology (Seoudi, 2009; Spender, 1994, 1996)
Mechanisms	Resource-picking mechanism (Makadok, 2001)	Capability-building mechanism: asset stock accumulation (Dierickx and Cool, 1989; Makadok, 2001) Capability (or competence) enhancing (Sanchez <i>et al.</i> , 1996a)	Capability (or competence) destroying (Sanchez <i>et al.</i> , 1996a); creative destruction (Schumpeter, 1994)

(continued)

RBV (rational-equilibrium)	The RBV's paradigm DC (behavioural-evolutionary)	CBV (social constructionist)
<p><i>Implications of base disciplines, fundamental perspectives, theories, and mechanisms</i></p> <p>CA Being more effective in the accumulation process, and having comparative advantage in capabilities and competences (Makadok, 2001)</p> <p>Timing of CA At the decision phase (Makadok, 2001)</p> <p><i>Methodology (Seoudi, 2009)</i></p> <p>Theoretical Hypothetico-deductive; formal mathematical modelling; optimization; and game theory</p> <p>Empirical Quantitative; large sample statistical analyses; and industry or market level data</p>	<p>Having CA in capabilities and competences (Hunt and Morgan, 1995, 1996, 1997)</p> <p>At the implementation and deployment phase (Makadok, 2001)</p> <p>Hypothetico-deductive; mix of formal mathematical and appreciative theorizing; and evolutionary game theory</p> <p>Mix of quantitative and qualitative methods; and simulation and historical study</p>	<p>Mostly qualitative; case study, anecdotal evidence</p>

**Note:** This table elaborates on and extends the original structure proposed by Seoudi (2009)

Table I.

**Table II.**  
The foundational  
building blocks of the  
RBV of the firm

Year	Author(s)	Contribution
1982	Lippman and Rumelt	The theory of uncertain imitability The concept of causal ambiguity as an isolating mechanism
1984	Rumelt	Other forms of isolating mechanisms
1984	Wernerfelt	The concept of resource position barrier Attributes of attractive (valuable or profitable) resources: cannot be acquired easily and with lower costs, and cannot be substituted
1986	Barney	A theory of CA based on the SFM concept
1991	Barney	The VRIN framework: the first theoretical framework of the RBV of CA
1991	Rumelt	Empirical evidence supporting the RBV position
1995	Barney	The VRIO framework: a modified version of the theoretical framework of the RBV

*(i) Assumptions*

Barney argues that, in order to understand the sources of sustained CA, the model should begin with two assumptions: firm resources may be heterogeneous and immobile. In the former, “building on Penrose’s (1959) work, this assumes that firms can be thought of as bundles of productive resources, and that different firms possess different bundles of these resources”. In the latter, “drawing on the work of Selznick and Ricardo, this approach assumes that some of these resources are either very costly to copy or inelastic in supply” (Barney, 2007, p. 133). These assumptions contrast with the earlier theories of the firm, which view it as a homogeneous bundle of tangible productive resources that lie outside the firm.

*(ii) Firm resources*

According to the RBV, a firm is an integrated set of tangible and intangible resources controlled by the firm that enables it to conceive of and implement strategies designed to improve its efficiency and effectiveness. Here, the tangibility of firm resources is a matter of degree. Resources that are typically more tangible include, but are not limited to, financial capital resources; e.g. equity capital, and debt capital; and physical capital resources; e.g. the geographic location, plants and equipment, and the physical technology. Resources that are typically less tangible include, but are not limited to, human capital resources; e.g. training, experience, judgment, intelligence, and insights of single individuals; and organizational capital resources; e.g. firm’s cultural, its formal reporting structure, formal and informal planning, controlling and coordinating systems, and informal relations among groups within the firm and between the firm and those in its environment (Barney and Clark, 2007).

*(iii) Attributes of strategic resources*

Barney and Clark (2007) argue that since different types of resources can have different competitive effects for firms, not all firm resources hold the potential of sustained CA. To have this potential, a firm resource must have four attributes: valuable (V), rare (R), imperfectly imitable (I), and organisation (O), known as the VRIO framework. Here, is a summary of their argument.

First, it must be valuable. A valuable resource enables a firm to implement a strategy that has the effect of exploiting environmental opportunities or neutralizing threats by:

- lowering the firm's net cost and/or increasing the firm's net revenues beyond what would have been the case if this valuable resource had not been used; and/or
- increasing the willingness of its customers to pay[5].

Exploiting this resource increases the economic value the firm creates (Barney, 1991; Barney and Arian, 2001; Barney and Clark, 2007).

Second, it must be rare. The rare resource is not simultaneously possessed by large numbers of other current or potential rivals. This may be due to the physical rareness in the strategic factor market (SFM) and/or rivals cannot perceive its value due to the firm's particular resource combination (Barney, 1991; Barney and Arian, 2001; Barney and Clark, 2007).

Third, it must be imperfectly imitable. An imperfectly imitable resource is a firm's resource that competitors cannot directly duplicate. In other words, competitors without this resource face a "cost disadvantage" in acquiring or developing it. In this respect, a resource can be imperfectly imitable for one or a combination of three reasons:

- (1) accumulating this resource is dependent upon unique historical conditions (history-based or path-dependent);
- (2) it is socially complex; and/or
- (3) the link between this resource and the firm's superior performance is causally ambiguous.

Here, the causally ambiguous relationship may be due to one or more of the following reasons:

- (1) resources and capabilities are "taken-for-granted" organisational characteristics or "invisible assets";
- (2) managers are unable to evaluate which of their resources and capabilities, alone or in combination, actually create the sustained CA; and/or
- (3) these resources and capabilities "may follow the notion of interconnectedness and asset mass efficiencies introduced by Dierickx and Cool (1989)".

However, the previous three reasons work under the "nonsubstitutability" assumption which means that firms, which cannot imitate the valuable and rare resource, cannot use different resources to implement the same strategy (Barney, 1991; Barney and Arian, 2001; Barney and Clark, 2007).

Fourth, there must be organisational processes ("complementary resources and capabilities", such as formal reporting structure, management control systems, and compensation policies) managed to exploit the full competitive potential of these strategic (valuable, rare, inimitable) resources and capabilities. This is because neither the strategic resources and capabilities are likely to be a source of sustained CA by themselves, nor will the complementary resources and capabilities have the ability to generate sustained CA in isolation. Organizational processes, then, provide the fourth condition necessary for realizing sustained CA. In this theoretical model, the complementary resources and capabilities operate as an "adjustment factor" [emphasis added] (Barney, 1995; Barney and Arian, 2001; Barney and Clark, 2007).



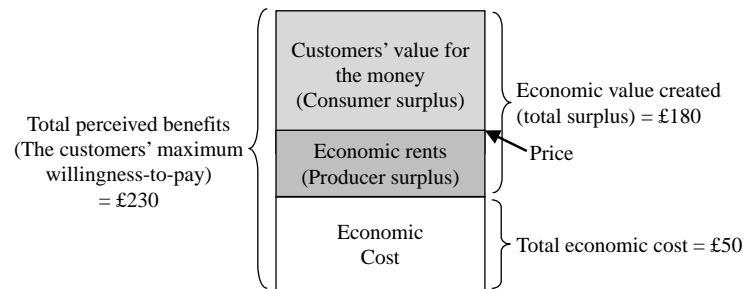
(iv) *The path to competitive position*  
CA is defined as follows:

An enterprise has a CA if it is able to create more economic value than the marginal (breakeven) competitor in its product market [...] [In this respect], the economic value created by an enterprise in the course of providing a good or service is the difference between the perceived benefits gained by the purchasers of the good and the economic cost to the enterprise (Peteraf and Barney, 2003, p. 314).

For example, if the customers' maximum willingness-to-pay for a product/service is £230/unit, and the total economic cost for this product/service is £50/unit, then the economic value created by the firm is (£230 - £50) £180/unit (Barney, 2007; Peteraf and Barney, 2003). Figure 1 is an illustrative example for the basic components of CA.

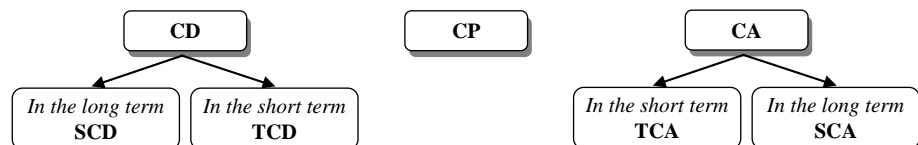
Considering the competitive position, three types of CA are identified: competitive disadvantage (CD); competitive parity (CP); and CA. First, the CD represents a situation in which "a firm creates less economic value than its rivals". In this respect, a sustained competitive disadvantage (SCD) indicates a CD that lasts a long time, and a temporary competitive disadvantage (TCD) indicates a CD that lasts a short time. Second, the CP represents a situation in which "a firm creates the same economic value as its rivals". Third, the CA represents a situation in which "a firm creates more economic value than its rivals". In this respect, a temporary competitive advantage (TCA) indicates a CA that lasts a short time, and a sustained competitive advantage (SCA) indicates a CA that lasts a long time (Barney, 2007). Figure 2 shows the different types of competitive positions.

To this end, the theoretical model shows the characteristics of strategic resources and capabilities (as strategy inputs) and the different CAs (as strategy objectives or outcomes). But, what about the different routes to CA? Four paths to CA have been identified as follows (Barney, 1991, 1995, 2007; Barney and Arikan, 2001; Barney and Clark, 2007; Barney and Wright, 1998): First, a firm that exploits a



**Figure 1.**  
The basic components  
of CA

Source: Peteraf and Barney (2003)



**Figure 2.**  
Types of CAs

Source: Barney (2007)

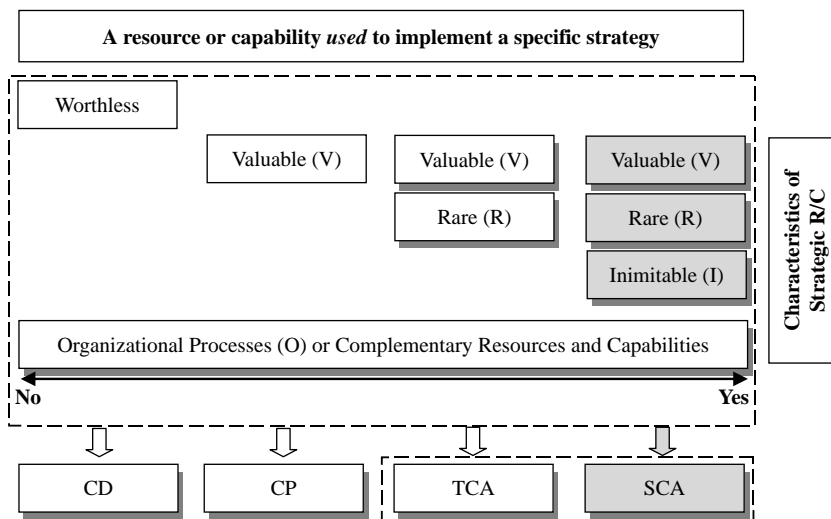
worthless or irrelevant resource or capability (weakness) will not be able to choose and/or implement strategies that exploit environmental opportunities or neutralize threats. “Organising to exploit this resource will increase the firm’s costs or decrease its revenues”. This generates less economic value than its rivals’. This below-normal performance implies a CD (temporary or sustained depending on how long it would last).

Second, a firm that exploits valuable but common resources when implementing a value creating strategy will create the same economic value as its rivals. This normal performance implies a CP, which increases the firm’s probability of economic survival, but does not involve CA.

Third, a firm that exploits valuable and rare but imitable resources when implementing value creating strategy will create more economic value than its rivals’. This above-normal performance implies a CA, or more precisely a TCA not SCA. This is because rivals will soon imitate the same strategy by acquiring the same resources to achieve the same position resulting in CP.

Finally, a firm that exploits valuable, rare, and inimitable resources when implementing a value creating strategy will create more economic value than its rivals. This above-normal performance implies a SCA. However, it is important here to mention the no substitutability assumption. If rivals cannot acquire the same resource they will try to substitute it. Thus, a low number of rivals can substitute this resource to implement the same strategy, and this substitute is not imitable, then the focal firm will continue generating SCA. If, however, the substitute can be imitated, then the focal firm can generate a TCA that would be downgraded soon to CP when a large number of rivals imitate this substitute. Figure 3 depicts the VRIO framework of the RBV of the firm.

This figure shows that, to implement a competitive strategy, a firm should efficiently and effectively organise business processes to exploit valuable, rare, and imperfectly imitable resources. In so doing a large number of current and potential



Source: Adapted from Barney and Clark (2007)

Figure 3. The VRIO framework of the RBV of the firm

rivals cannot conceive of and/or implement the same strategy because of one or more of the three reasons stated under the inimitability attribute. The above discussion provides an updated review of the RBV. We now pull together for discussion 13 of the most critical criticisms of this strategic management view (or theory).

### VRIO: 13 criticisms

Although the RBV is one of the most widely accepted theories within strategic management, it has also been the subject of significant criticism. There have been a few studies that have undertaken research to specifically examine whether the RBV framework satisfies key requirements for theoretical systems (Priem and Butler, 2001a, b; Gibbert, 2006; Newbert, 2007; Sanchez, 2008[6]; Kraaijenbrink *et al.*, 2010). That is, the degree to which the RBV presently possesses the explanatory and predictive power generally associated with theories, and if it is eligible to become a theory of CA. In addition, over the past 20 years there has been a wealth of literature utilizing and examining the RBV. Within this wide body of work there have been many misrepresentations of some influential works, namely that of Penrose (1959), in our analysis of the literature we have specifically, where appropriate, quoted from and provided the original source.

We have analysed the literature for criticisms and have been able to identify 13 separate reasons why the RBV does not adequately address the notion of resource-based competition. We have summarized these in Table III. The remainder of this section systematically examines these criticisms.

#### 1. *The value (V) conundrum (an exogenous black box)*

Sanchez (2008) argues that the VRIO framework fails to provide an adequate conceptual basis for identifying which organisational attributes (or “entities”) can be considered as valuable resources. It offers no ideas of its own to show how such valuable resources can be identified. It should be noted, however, that the RIO dimensions of the theoretical framework have been argued not as the characteristics of a resource to be valuable, but as characteristics for the valuable resource to be a possible source of CA. In this regard, the RBV suggests that the traditional SWOT analysis or environmental models of CA would reveal which of those attributes constitute valuable resources that would help a firm to exploit opportunities or to neutralise threats, and which do not. Therefore, it:

[...] relies on “outward in” analysis based on unspecified SWOT frameworks or “environmental models” from industry structural analysis, [“notably those advanced by Porter (1980, 1985)”], to identify what constitutes a [valuable] firm resource and what does not.

The SWOT analysis is itself an atheoretic mode of analysis that admits use of an unlimited range of approaches to analyzing strengths, weaknesses, opportunities, and threats – some of which may (and often do) lead to contradictory conclusions about what kind of firm attributes constitute a strength or weakness, as well as what kind of environmental situations constitute an opportunity or threat (Sanchez, 2008).

To conclude, by “outsourcing” a basic conceptual task for the previous strategy models, the VRIO framework fails to provide a systematic, consistent, and generally applicable basis for identifying the firm attributes that qualify as strategically valuable, and which firm attributes do not (Sanchez, 2008). In other words, “[...] the

No.	The criticism	Supporting literature
1	<i>The value (V) conundrum (an exogenous black box)</i> It does not provide a clear, systematic, consistent, and generally applicable conceptual basis for characterizing strategically valuable resources, the V dimension. In other words, it outsources the basic conceptual task of identifying valuable resources to other frameworks and models that: (a) may produce polytheoretic interpretation; (b) do not describe well all observable competitive contexts, and, as such, the valuable resources most suitable for each one; and/or (c) do not attempt to characterize the nature of all the firm-specific resources	Sanchez (2008), Priem and Butler (2001a), Kraaijenbrink <i>et al.</i> (2010)
2	<i>The uniqueness (R) dilemma</i> At some level of analysis, all firm resources are unique. Thus, it is logically impossible to use the criterion of rarity to distinguish resources that have the potential to be sources of CA from resources that do not. In other words, heterogeneity, as an assumption, eliminates the need for rarity, as an attribute	Sanchez (2008), Armstrong and Shimizu (2007), Hoopes <i>et al.</i> (2003), Gibbert (2006)
3	<i>The cognitive impossibility dilemma (I)</i> Managers of the superior performer who are responsible for the resource-based strategizing: (a) must not understand which strategic factor (antecedent) causes superior performance (outcome); and/or (b) cannot systematically manage and influence this strategic factor	Sanchez (2008), Levitas and Chi (2002), King and Zeithaml (2001), Reed and DeFillippi (1990)
4	<i>The organization (O) dilemma</i> It is concluded from the conceptualization of CA that complementary resources and capabilities are assumed to be homogenous	Self
5	<i>The tautology problems</i> First, the characteristics (valuable and rarity) and outcomes (CA) are not conceptualized independently to produce synthetic statements. Therefore, further conceptual work is required before the underlying statement can become a lawlike generalization Second, due to the value conundrum, empirical "tests" of the RBV's core proposition commonly assert that resources identified <i>ex post</i> as being strategically valuable were <i>ipso facto</i> the <i>ex ante</i> strategically valuable resources responsible for a firm's or firms' future success	Sanchez (2008), Priem and Butler (2001a, b)
6	<i>The static problem (the ex post or equilibrium-based analysis)</i> It does not adequately address the dynamic competitive environments because it involves applying a timeless equilibrium model to an inherently dynamic reality. Therefore, it fails to capture important dynamic aspects such as knowledge creation, learning, and innovation	Seoudi (2009), Sanchez (2008), Priem and Butler (2001a), Spender (1996), Foss (1996), Black and Boal (1994), Amit and Schoemaker (1993)

(continued)

**Table III.**  
The criticisms of the  
VRIO framework

No.	The criticism	Supporting literature
7	<p><i>The absence of a chain of causality (hierarchical schemata)</i></p> <p>By not providing a systematic conceptual basis to distinguish resources based on their differing functional and behavioral properties, it does not able to propose chains of causality explaining how resources and their effective use may lead to competitive success. In other words, the <i>ad hoc</i> listing of firm resources (without a systematic conceptual basis) fails to recognize that a firm's capabilities in using resources are conceptually distinct from other kinds of firm resources</p>	Sanchez (2008), Madhavaram and Hunt (2008), Priem and Butler (2001a), Conner (1991)
8	<p><i>The asymmetry in assumptions regarding the SFMs</i></p> <p>On the one hand, SFMs are not complete. On the other hand, the successful implementation of a strategy often requires highly firm-specific assets (or nontradable assets), as opposed to undifferentiated inputs. Regarding the tradable assets, the deployment of such assets does not entail sustainable CA, precisely because they are freely tradable</p>	Dierickx and Cool (1989)
9	<p><i>The accumulation process of intangible resources (a black box)</i></p> <p>It does not explicitly deal with the complex processes by which firms can endogenously accumulate and maintain all strategically valuable resources, namely that of intangible resources, the real source of CA. In other words, it is a "resource-picking theory", rather than resource accumulating one</p>	Seoudi (2009), Sanchez (2008), Makadok (2001), Priem and Butler (2001a), Black and Boal (1994), Dierickx and Cool (1989)
10	<p><i>The synergetic effect of a bundle of resources (a black box)</i></p> <p>It treats resources as singular distinct items rather than a bundle of resources that gives a synergistic result</p>	Sanchez (2008), Priem and Butler (2001a), Spender (1994, 1996), Black and Boal (1994)
11	<p><i>Unimplementable in practice</i></p> <p>Unable to develop meaningful management tools in the form of actionable prescriptions for practitioners</p>	Sanchez (2008), Priem and Butler (2001a)
12	<p><i>The epistemological impossibility problem</i></p> <p>The core proposition of the VRIO framework does not allow for reproducibility of experiments, falsifiability, and generalizability. Therefore, it is impossible to use the scientific method to test the RBV's core proposition and thereby to generate new knowledge or understanding about the role of resources in firms' competitive outcomes</p>	Sanchez (2008), Priem and Butler (2001a, b)
13	<p><i>One framework for several competitive contexts</i></p> <p>Little effort to establish appropriate contexts for the VRIO framework has been apparent</p>	Bowman and Collier (2006), Sanchez (2008), Priem and Butler (2001a)

Table III.

criteria for value in the RBV remain, at present, in an exogenous black box” (Priem and Butler, 2001a), “and the external determination of value construct” (Priem and Butler, 2001b). Therefore, given the resulting value conundrum, from a scientific perspective, “the core proposition of the RBV is shown to be unwarranted theoretically, as well as being unimplementable in practice” (Sanchez, 2008).

### 2. *The uniqueness or rare (R) dilemma*

In the VRIO framework, the *R* dimension refers to a valuable resource that should be rare (scarce or uncommon) to be a source of TCA. Sanchez (2008) argues that the use of rarity as an attribute for a valuable resource to be qualified for generating CA gives rise to what might be called the “uniqueness dilemma”. This occurs because firm resources are “heterogeneous” and thus at some level of analysis, all firm resources become unique, and thus rare. It is then logically impossible to distinguish (even partially) resources that have the potential to be sources of CA from resources that do not (Sanchez, 2008, p. 20). In other words, heterogeneity as an assumption eliminates the need for rarity as an attribute.

In a similar vein, Hoopes *et al.* (2003) make an attempt to develop “a broad theory of competitive heterogeneity” to address “the RBV’s inherent theoretical and empirical problem”. In this respect, while reviewing the RBV, they argue that, as heterogeneity means that each firm has a unique bundle of resources:

[...] of these three characteristics [“valuable, rare, isolated from imitation or substitution”], only value and inimitability are ultimately important. So concentrating on value and inimitability gets to the heart of the RBV.

Finally, Armstrong and Shimizu (2007) review 125 empirical RBV studies published in eight leading journals between 1991 and 2005 to examine the key methodological issues related to the RBV theoretical framework. They identify rarity as a “potentially important” methodological issue. Though, in their sample, rarity is “scarcely discussed or examined”. They therefore argue for theoretical modification or refinement of the RBV (Armstrong and Shimizu, 2007, pp. 981-982).

### 3. *The cognitive impossibility dilemma (I)*

In the VRIO framework, the *I* dimension assumes that a high level of causal ambiguity is required to sustain the CA. Barney and Clark (2007, p. 62) argue that:

[...] both the firms that possess resources that generate a CA and firms that do not possess these resources, but seek to imitate them, must be faced with the same level of causal ambiguity.

The argument here is that since some firm resources are tradable, competitors who know the resources that cause superior performance can buy or acquire these resources, and then imitate the same strategy. In other words, if managers are able to understand the relationship between the factor and the outcome, then this is sufficient to allow imitation or some other rapid response by rivals. This can be done through, for example, hiring “well-placed knowledgeable” managers from the superior performer, or engaging in a careful systematic study of this superior performer to reduce “knowledge disadvantage”. If the causal ambiguity is low, and managers can understand the antecedents of the superior success, the valuable and rare resource cannot be a source of sustained competitive advantage, unless it is socially complex, and beyond the ability of firms to systematically manage and influence. Organisational culture is a case in point;

here, the ability of rivals to imitate this resource is significantly constrained. Sanchez (2008) criticizes this reasoning (both the high level of causal ambiguity and/or social complexity), and argues that it clearly contradicts the core proposition of the RBV that managers can engage in “resource-based strategising” to create sustained competitive advantage. He also states that if one accepts this reasoning, s/he must also accept that strategy researchers cannot manage to identify these resources. Furthermore, under the RBV logic, if one accepts this reasoning, then “the only explanation for past or future success in creating sustainable CA would have to be a firm’s luck in acquiring or possessing such resources”.

In this context, we need to distinguish between “know-what” and “know-how”. The assumption that published data and/or knowledge articulated by insiders about, for example, R&D capability, will “invoke rapid retaliatory responses by competitors [...] is overly simplistic”. Know-what does not imply that “firm’s competitors can duplicate or match the underlying inventive capability”. Although know-what may help competitors in accelerating the innovation process, they still face much difficulty in imitating this capability due to the attributes of the accumulation process. On the other hand, the ability of rivals to replicate a distinctive capability rests on know-how not know-what. In this respect, much of the know-how knowledge cannot be articulated, and the distinctive capability that is based on this tacit knowledge cannot be transferred (Levitas and Chi, 2002). This line of reasoning is developed further by Reed and DeFillippi (1990) who argue that “where ambiguity is so great that managers do not understand intra-firm causal relationships, [...] it may be impossible to utilise competencies for advantage”.

Empirical research on the “linkage ambiguity” also supports this criticism. That is, despite the imitation pressures, lower linkage ambiguity among top and middle managers of the focal firm is associated with higher firm performance. Managers of superior performers clearly understand the link between competences and performance. This is particularly important because such understanding enable them to exploit, enhance, and redeploy sources of success. On the other hand, managers of the inferior performers do not clearly understand the link between resource factors and performance (King and Zeithaml, 2001).

#### *4. The organisation (O) dilemma*

The first version of the RBV, the VRIN framework, did not take into consideration the complementary resources and capabilities, the organisation (O) attribute. Due to a debate regarding the importance of such a type of resource in exploiting the VRI resources, the O attribute has been added to the theoretical framework as an adjustment factor.

For example, the RBV argues that if some firms possess a valuable resource and the complementary resources and capabilities required to take full advantage of this valuable resource, they are expected to generate CP. In this way, the RBV implicitly assumes that all these firms will efficiently and effectively organise business processes, in the same way, to exploit this valuable resource, and, as such, will produce the same result: CP. This goes against not only the other schools of thought, which Barney and Clark (2007) argue share the same underlying theoretical structure, but also the RBV’s assumption that firm resources are heterogeneous (including the complementary resources and capabilities, and as such the competitive outcome would thus be different).

### 5. The tautology problems

A consensus conceptualisation of the characteristics of a theory is:

[...] theories are systematically related sets of statements, including some law-like generalisations, that are empirically testable. The purpose of theory is to increase scientific understanding through a systematised structure capable of both explaining and predicting phenomena (Hunt, 1983, p. 10).

Priem and Butler (2001a, b) elaborate on the previous definition and examine whether the fundamental statements in the VRIO framework (e.g. valuable and rare organizational resources can be a source of CA) meet the empirical content as a criterion that helps in separating “analytic statements” from “synthetic statements”. The former is true by definition, and, therefore, a confrontation with data is not required to determine their correctness. As such, they have no empirical content. The latter, however, is not true by definition, and a confrontation with the real world must determine their correctness. As such, they have empirical content. When they replace the terms of the fundamental statements of the VRIO framework with their definitions in the theory, they find that the fundamental statements are true by definition, and hence “self-verifying”. Therefore, it is “not subject to disconfirmation”, a “tautological statement”. They conclude that:

Thus, Barney’s definitions indicate that additional conceptual work is needed if the foundation of the RBV is to meet the law-like generalization standard. [...] [That is,] the characteristics [“valuable and rarity”] and outcomes [“competitive advantage”] must be conceptualized independently to produce a synthetic statement (Priem and Butler, 2001a, p. 28).

Adopting a different view, Sanchez (2008) argues that the “tautology problem” in the identification of strategic resources is a fundamental problem of the VRIO framework that, due to the value conundrum, reduces “the RBV’s core proposition to an essentially tautological proposition”. He states that:

Empirical “tests” of the RBV’s core proposition commonly assert that resources identified *ex post* as being strategically valuable (by invoking some *ad hoc* environmental model or SWOT framework) were *ipso facto* the *ex ante* strategically valuable resources responsible for a firm’s or firms’ future success (Sanchez, 2008, p. 14).

To remedy this problem, researchers attempting to empirically test the core proposition of the RBV should identify, based on the characterisation of what a valuable resource is, “*ex ante* the resources that will have strategic value *ex post*” (Sanchez, 2008).

### 6. The static problem

The tautology problem leads to the static problem, also known as the *ex post* or equilibrium-based analysis. Amit and Schoemaker (1993) and Seoudi (2009) argue that most empirical studies in the RBV try to examine a firm’s unique resources that may help to explain some of the firm’s past performance. This *ex post* analysis may provide limited insight into the circumstances that will prevail in the future, notwithstanding the uncertainty about the economic and technological environments, competitors’ behavior, and customer preferences. Indeed, Priem and Butler (2001a) state that:

[...] although the RBV began as a dynamic approach emphasizing change over time (Dierickx and Cool, 1989; Penrose, 1959; Wernerfelt, 1984), much of the subsequent literature has been static in concept.



It offers just “a static argument”. While “the static argument is descriptive it identifies generic characteristics of rent-generating resources without much attention to differing situations or resource comparisons”. In other words, many authors argue that it does not adequately address the dynamic competitive environments. This is because it involves applying “a timeless equilibrium model to an inherently dynamic reality” (Black and Boal, 1994; Foss, 1996, p. 181; Hunt, 2001).

It should be noted, however, that such an equilibrium-based analysis was implicitly criticized a long time ago when discussing the “creative destruction” as the essence of “capitalism”. In his seminal work, Schumpeter (1994, p. 84)[7] states that “the problem that is usually being visualized is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them”. It also has been criticised when discussing the self-transformation as the essence of “post-capitalist society”. Drucker (1993) argues that, in the “knowledge society”, organisations have to build systematic practices for managing a self-transformation.

Thus, we argue that the equilibrium-based methodology of the RBV fails to capture important dynamic aspects such as knowledge creation, learning, and innovation (Seoudi, 2009; Spender, 1996). For example, the current conceptualization of the RBV fails to distinguish between:

- knowledge integration (in the terminology of Grant (1996)) and knowledge creation (in the terminology of Nonaka and Takeuchi (1995));
- “exploitation of old certainties” and “exploration of new possibilities” (in the terminology of March (1991)); and
- “single-loop learning” and “double-loop learning” (in the terminology of Argyris (1999)), or “incremental learning” and “step function learning” (in the terminology of Helfat and Raubitschek (2000)).

All have been argued to be essential characteristics of firms seeking to generate sustained competitive advantage.

#### *7. The absence of a chain of causality (hierarchical schemata)*

The VRIO framework classifies firm resources into four categories (capital, physical, human, organizational). Priem and Butler (2001a) describe this classification as “all-inclusive resources”. Sanchez (2008) argues that this “*ad hoc* listing” of firm resources “adds nothing that is theoretically relevant in the characterisation and analysis of resources”. Similarly, while identifying some issues related to how to operationalise the RBV approach, Conner (1991) argues that consideration needs to be given to understanding the levels of resources that may exist within firms and to the potential contribution of each to performance differentials. This will help to prevent everything in the firm from being labelled a resource and hence the concept from losing explanatory power (Conner, 1991, pp. 144-145).

In addition, Madhavaram and Hunt (2008) argue that “classificational schemata are important for the development of theory, and hierarchical schemata are particularly important”. They state that the conceptualisation of capability and competence should not only address what the concept is, but also where the concept comes from. Sanchez (2008) goes further and argues that because it lacks any adequate conceptual basis for constructing such chains of causality, “the core proposition of the RBV is simply

theoretically unjustified, and therefore the RBV provides no actual basis for enacting the core proposition in practice”.

#### 8. *The asymmetry in assumptions regarding the SFMs*

Many resource-based scholars recognize the work of Dierickx and Cool (1989) as a significant theoretical contribution to the resource-based competition (Conner, 1991; Knott *et al.*, 2003; Markides and Williamson, 1994; Peteraf, 1993; Priem and Butler, 2001a). The purpose of Dierickx and Cool’s work is threefold:

- (1) to discuss some of the limitations inherent in the concept of SFM, a key concept in which the VRIO framework is grounded;
- (2) to put forward a complementary framework based on the notion of asset stock accumulation; and
- (3) to develop guidelines for assessing the sustainability of a firm’s CA.

Of particular importance here is the debate they raise against the SFM concept. They argue that SFMs are “incomplete” and “tradable assets” are not qualified to generate sustained competitive advantage. They question the assumption that all required assets by a firm can be bought and sold. They remind us that critical resources are accumulated rather than acquired, such as reputation for quality, dealer loyalty brand trust and R&D capability. Thus, “competitors who need an asset which is nontradable are constrained to ‘building’ it. [...] Clearly, the assumption that factor markets are complete may not be pushed too far” (Dierickx and Cool, 1989, pp. 105-109).

#### 9. *The accumulation of strategic resources (a black box)*

The second purpose of Dierickx and Cool’s (1989) work is to develop a process that takes into consideration the dynamic aspects of firm resources based on the notion of “asset stocks” and “asset flows”. Their argument is simply that strategic asset stocks are accumulated over a period of time by following a consistent set of policies. For example, Toyota has developed a reputation for build quality by investing over a long period in production, quality control and training.

It is concluded from the debate between Barney (1989) and Dierickx and Cool (1989) that the theoretical frameworks of the RBV (VRIN and VRIO) deliberately neglect the dynamic nature of strategic resources. As a result, many scholars argue that the VRIN and VRIO do not explicitly deal with the complex processes by which firms can endogenously accumulate and maintain all strategically valuable resources, namely that of intangible resources. Thus, it does not address a critical challenge faced by practitioners searching for the real source of CA (Priem and Butler, 2001a; Sanchez, 2008; Sanchez and Heene, 1997a; Seoudi, 2009).

In other words, a theory that draws solely on the SFM concept cannot take account of higher-order resources, capabilities and competences (Dierickx and Cool, 1989; Makadok, 2001; Sanchez, 2008). It is a “resource-picking theory”, rather than resource accumulating one (Makadok, 2001). Put differently, it is a theory that deals with “operand resources” rather than “operant resources” (in the terminology of Vargo and Lusch (2004)). While the former is important, the latter is the real source of CA (Dierickx and Cool, 1989; Itami, 1987). This is especially so when the degree of inimitability and the number of potential paths to CA increases as one moves from tradable resources to nontradable resources (Black and Boal, 1994).

### 10. *The synergetic effect of a bundle of resources (a black box)*

The third purpose of Dierickx and Cool's (1989) work is to develop guidelines for assessing the sustainability of a firm's CA. They argue that the degree of imitability of a particular asset stock is determined by "the interplay of a number of attributes", which may or may not characterise the process by which it may be accumulated. These are: "time compression diseconomies, asset mass efficiencies, interconnectedness of asset stocks, asset erosion, and causal (or linkage) ambiguity". Of particular importance is the attribute of "interconnectedness of asset stocks".

This attribute shows that none of the resources of a firm is capable of creating value on its own, but must be interrelated and coordinated with other resources through coherent firm processes that are capable of creating and producing successful products and/or services for markets (Madhavaram and Hunt, 2008; Penrose, 1959; Porter, 1991; Sanchez, 2008; Spender, 1994). The VRIO framework treats resources as "singular distinct items rather than a bundle of resources" that delivers a synergistic impact (Black and Boal, 1994). It:

[...] characteristically overlooks the collective knowledge and skills required to coordinate the resources into a viable bundle. It overlooks, therefore, the synergistic aspects of the organisation as a system of practice (Spender, 1994, p. 353).

This criticism is reinforced by Priem and Butler (2001a) who state that:

[...] the processes through which particular resources provide CA remain in a black box. We do not know, for example, how the resources generate sustainable rents, other than through their heterogeneity. Why is it that some heterogeneous resources generate value, whereas other heterogeneous resources do not?

What should be noted here is that, as Black and Boal (1994) argue, the value created, the degree of inimitability achieved, and the number of potential paths to CA increase as one moves from a single resource to a bundle of resources.

Although it is obvious from the discussion of the previous three criticisms (8-10) that the resource-picking and capability-building mechanisms are complementary (and sometimes substitute), the contribution of Dierickx and Cool (1989) is unfortunately framed within the narrow focus of the VRIO theoretical framework. In other words, many scholars neglect:

- the process by which strategic resources are accumulated and maintained; and
- the way by which a bundle of resources is coordinated to give a synergistic result.

By doing so, they neglect the dynamic nature of resource bundles.

### 11. *Unimplementable in practice*

Priem and Butler (2001a) argue that the VRIO framework is practicably unimplementable because it does not develop "meaningful management tools in the form of actionable prescriptions for practitioners". That is, a useful strategic management theory should provide prescriptions for both the independent variables ("operational validity") and outcome variables. VRIO does not. The practitioner is unable to implement the action implementations of the theory or to manipulate the key independent variables. For example, precisely how is the practitioner to go about

obtaining rare and valuable resources that are hard to imitate and nonsubstitutable (Priem and Butler, 2001a, pp. 31-32).

### 12. *The epistemological impossibility problem*

Despite the previous criticisms, Sanchez (2008) argues that a scientific critique of the VRIO framework as a testable theory reveals the “epistemological impossibility problem”. That is, the core proposition of the VRIO framework does not allow for “reproducibility of experiments”, “falsifiability”, and “generalizability”. We will address each of these.

*Regarding the reproducibility of experiments.* Given that the core proposition of the RBV is that CA is a symptom of unique resources (firm heterogeneity) it is extremely difficult if not impossible to reproduce research conducted in one firm by finding a similar context in another (Sanchez, 2008, p. 29).

*Regarding the falsifiability.* Given the broad notion of resources in the RBV it is always possible to identify a heterogeneous resource in a successful firm that can be argued to be the source of that firm’s success. If to this we add the difficulty of recreating experiments in other firms, it is impossible to definitively reject the proposition that certain kinds of resources are the source of a firm’s success (Sanchez, 2008, p. 29).

*Regarding the generalisability.* Given the RBV’s basic claim that a given firm’s competitive success is the result of the firm’s heterogeneous endowment of resources, this precludes any possibility of performing confirming experiments involving other firms that would be needed to support a generalized proposition because other firms would have to have their own “heterogeneous” resource endowments (Sanchez, 2008, p. 29).

### 13. *One framework for different competitive contexts*

Priem and Butler (2001a), Sanchez (2008) and Bowman and Collier (2006) criticize the level of generality the VRIO framework claims, and argue for developing “contingency approaches” or “middle-range strategy theories” that identify the competitive contexts within which these approaches are expected to hold [8]. That is, it is critical to establish boundaries for the framework by hypothesizing competitive contexts within which particular capabilities or competences are determined to be more or less valuable.

According to Sanchez (2008) the competitive environments of firms may be fundamentally different in nature, and may span a spectrum from “stable (seen largely as a special case) to highly dynamic (regarded as an increasingly common if not dominant context)”. Therefore, a “grand strategy theory” of universally applicable characterizations and derived prescriptions must take into consideration qualitatively different kinds of competitive contexts. This leads to a further limitation. To take account of different competitive contexts and to develop universally applicable propositions may require such a high level of abstraction that they may lose any capacity for effectively addressing the specific conditions that distinguish qualitatively different competitive contexts (Sanchez, 2008, p. 49).

### **The level of empirical support of the RBV**

Newbert (2007) conducted the first “systematic assessment of the RBV’s level of empirical support”. A sample of “RBV-grounded empirical articles”, undertaken between 1994 and 2005, is analyzed in which four theoretical approaches are employed:

- (1) the “resource heterogeneity approach” (the VRIN framework);
- (2) the “organizing approach” (the VRIO framework);
- (3) the “conceptual-level approach”; and
- (4) the “dynamic capabilities approach”[9].

The analysis shows that 91 per cent of the total sample employ the resource heterogeneity approach. In this approach, the scholars argue on theoretical grounds that a given resource, capability, or core competence is valuable, rare, inimitable, and/or nonsubstitutable, quantify the amount of it possessed by a firm, and correlate this amount to some measure of CA or performance. The results show that while capabilities and core competencies do indeed contribute significantly to a firm’s CA and/or performance, resources do not. This is not surprising given that much of the foundational work on the RBV addresses the importance of deploying and not simply possessing resources. The more recent studies have attempted to more precisely explain these processes. Newbert (2007) argues that future research should focus on the more contemporary theoretical extensions of RBV. Furthermore, Armstrong and Shimizu (2007) have suggested that RBV research is at the stage of “interim struggles” (Weick, 1995, p. 385) through which the RBV can advance by further interaction between theoretical refinement and empirical development.

### Conclusions

Our starting point for this study is a recognition that the field of research on resource-based competition is full of nuanced terminology and misunderstandings. This presents difficulties for scholars attempting to begin research in the field. Furthermore, we also recognise that within this paradigm there exists a dominant theoretical framework – VIRO that we wished to examine. To address this two conceptual tasks have been undertaken here in this paper.

First, this analysis structured the literature on resource-based competition into three distinct schools of thought. In doing this, we contribute to management research in two areas:

- (1) to help the reader witness the deviation among the three schools of thought; and
- (2) to help researchers work through the wide terminological confusion and situate their work within the relevant school of thought.

Thus, scholars should be aware of the basic organizational assumptions and interpretations that shape the three schools of thought. For example, those who are interested in specific phenomena, like radical innovations, are advised to adopt theories and approaches developed under the social constructionist school. Scholars who are interested in incremental innovations, on the other hand, are advised to adopt theories and approaches developed under the behavioural-evolutionary school.

Second, this study sought to draw together the criticisms that have emerged since Jay Barney wrote his two widely known articles: “SFMs: expectations, luck, and business strategy” (Barney, 1986); and “firm resources and sustained competitive advantage” (Barney, 1991). Although much has been written on the subject in this time, very few have attempted to systematically draw together the criticisms that have emerged. This is particularly important as “major proponents of the RBV have been remarkably silent

and occasionally evasive in responding to fundamental conceptual and theoretical criticisms” (Sanchez, 2008). We identify 13 criticisms and conclude that the VRIO does not adequately address the notion of resource-based competition, Further; its claim to be a general view of resources is unwarranted theoretically and unsupported empirically. In other words, the generic attributes of rent-generating resources (value, rare, imperfect imitability, and organization) should not be used to assess the sustainability of CA when the real source of this advantage is capabilities and competences. In this context, the other views (the DC and CBVs) have recognized that capabilities and competences in using resources are conceptually distinct from other kinds of firm resources. This has led to the identification of completely different attributes of rent-generating capabilities and competences (e.g. time compression diseconomies, asset mass efficiencies, interconnectedness of asset stocks, asset erosion, and/or or linkage ambiguity). We therefore suggest that researchers avoid the tendency to test a theoretical framework reflecting a resource-picking mechanism when the real source of competitive success are capabilities and competences which, unsurprisingly enjoy a high level of empirical support.

The extensive amount of attention granted to the RBV may be explained by one or more of the following. First, “the relative ease of measuring resources as compared to (dynamic) capabilities and (core) competencies”. Second, the theoretical framework of the RBV is widely regarded as “the first formalization of the then-fragmented resource-based literature into a comprehensive (and thus) empirically testable theoretical framework” (Newbert, 2007), taking into consideration the nature of the early versions of the alternative views (practitioner-oriented and diversification-emphasized: for example, Prahalad and Hamel (1990)). Third, “the management-fashion-setting process” may also explain why some scholars have elevated it from a view to theory (Abrahamson, 1996). Fourth, neglecting (and, in some cases, misinterpreting) the classic scholarly work (Penrose, 1959; Dierickx and Cool, 1989) may also explain why the VRIO framework has been elevated from a view (within this paradigm) to a theory (codifying the whole paradigm), and why it has received so much attention.

## Notes

1. In this paradigm, strategy may be known as “industry-based strategy”. The structure of this paradigm may be presented in the following three levels. First, strategy should focus on choosing an attractive industry and/or altering the structure of the chosen industry to increase monopoly power. In this regard, the profitability of a firm in an industry is determined by the five competitive forces identified by Porter (1980). Second, after choosing an attractive industry or altering the industry structure, the firm should choose among the three generic strategies. In this regard, the firm “must make a choice among them, or it will become stuck in the middle”. Third, internal factors come into play after choosing one of the three generic strategies. That is, the firm should manage well the activities in its “value chain”, which are considered as the basic unit in CA (Hunt and Derozier, 2004). In this regard, the “value chain” analysis is considered as an “accepted” alternative for both the RBV and the (SW) of SWOT analysis (Priem and Butler, 2001b).
2. The active creator of environment is more akin to the “prospector” (in the terminology of Miles *et al.* (1978)) and the “enacting organization” (in the terminology of Daft and Weick (1984)).

3. In 1994, the work of Wernerfelt (1984), a RBV of the firm, was awarded annual prize for the “best paper” published in the *Strategic Management Journal* five or more years prior (Wernerfelt, 1995).
4. Barney (1986) introduces the concept of SFMs to: (1) show that all strategic factors required to implement strategies can be traded in these markets; (2) argue that both the costs of the strategic factors required to implement strategies and the future returns expected from these strategies should be taken into consideration; (3) argue that a firm can generate above-normal economic performance if it is able to create imperfection in the SFM; (4) argue that a firm can “become consistently better informed about the value of strategies they are implementing than other firms” (“systematic exceptional advantage”) by “turning inwardly” to analyze its resources and capabilities; and (5) conclude that “the search for CA and superior financial performance must begin with an analysis of the resources and capabilities a firm currently control”.
5. Resources that do not enable a firm to conceive of and/or implement strategies that improve its efficiency and effectiveness or that have no impact on the firm’s strategizing processes are considered worthless resources (Barney, 1991).
6. Sanchez (2008, pp. 1-2) “applies the principles of the philosophy of science and the derived scientific method to analyze the foundational concepts and core proposition of the RBV” (both the VRIN and VRIO) framework, and identifies “seven fundamental conceptual deficiencies and logic problems”.
7. The book was first published in the USA in 1942.
8. This notion can be easily seen in the work of Miles *et al.* (1978). They develop a typology for organizational strategies according to three “product-market domains”. That is, the prospector strategy is more relevant for the domain that is broad and in a continuous state of development; the defender strategy is more relevant to the domain that is narrow and stable; and the analyzer strategy is more relevant to the hybrid domain.
9. The first two approaches seek to identify the actual resource and capability that confer an advantage to a firm. The third approach seeks to test whether the attributes (valuable, rare, inimitable), as essential for a resource to effectively contribute to a firm’s advantage, are indeed significant predictors to this end. The last approach seeks to test the effect of the interaction of a specific resource (that has the four attributes of the VRIN or the VRIO) and a DC on a firm’s advantage.

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