



# Revisiting the concept of competitive advantage

## Problems and fallacies arising from its conceptualization

Competitive advantage

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### Abstract

**Purpose** – Although competitive advantage is the cornerstone concept in strategic management it still remains a poorly defined and operationalized construct. The purpose of this paper is to revisit the concept of competitive advantage, to identify the problems that stem from its current conceptualization from the majority of the literature.

**Design/methodology/approach** – The paper undertakes an extensive literature review, audit of logical inference, syllogistic reasoning and Bayesian expressions in order to examine the problems associated with the current conceptualizations of competitive advantage.

**Findings** – Several drawbacks and fallacies relating to current conceptualizations of competitive advantage were identified that create an urgent need for a more robust definition which could better serve the needs of both empirical research and management practice.

**Research limitations/implications** – The authors by no means claim that the literature review undertaken in this paper on the concept of competitive advantage and on the problems derived from its conceptualization was exhaustive or absolute. Rather, this paper constitutes an attempt to stimulate efforts and provide directions on the further conceptual development of competitive advantage.

**Practical implications** – The findings allow practising managers to not necessarily associate competitive advantage with its sources and with the determinants of superior performance.

**Originality/value** – The findings contribute to the evolution of the strategic management field by identifying, categorizing and mapping potential problems, drawbacks and fallacies, associated with the conceptualization of competitive advantage as currently delineated in the literature, and by suggesting some criteria for the development of a conceptually more robust definition.

**Keywords** Competitive advantage, Strategic management, Superior performance, Conceptualization of competitive advantage, Definitional problem, Tautology problem, Dependent variable problem

**Paper type** General review

### 1. Introduction

The quintessential goal of strategic management research is to explain what accounts for differences in performance/returns/rents/value across firms (Rumelt *et al.*, 1994; Winter, 1995; Teece *et al.*, 1997; Barney and Hesterly, 1999; Zott and Amit, 2008; Ceccagnoli, 2009). The leading proposition is that superior performance arises from competitive advantage (Barney, 1997; Grant, 1998; Roberts, 1999; Durand and Vaara, 2009). Under any of the leading theories in business strategy, i.e. an industrial organization perspective, a market-led perspective, a resource-based view or a dynamic capabilities perspective, superior performance exists because of specific reasons and

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these reasons seem to always be tied to the concept of competitive advantage (Stalk *et al.*, 1992; Coff, 1999; Powell, 2001; Zahra and Nielsen, 2002; Wiggins and Ruefli, 2002; Sigalas and Pekka Economou, 2009). This durable proposition, among others, constitutes the foundation of the sources of competitive advantage-competitive advantage-superior performance conceptual framework which is widely accepted in the strategic management field (Newbert, 2007). Thus, the two concepts of competitive advantage and superior performance always take center stage in any discussion or examination of the strategic management process (Coff, 1999; Baaij *et al.*, 2004).

Despite its critical importance, competitive advantage seems to have always suffered from a lack of semantic content, since there are numerous definitions of competitive advantage in the strategic management literature each with sometimes a different meaning. Indeed, even though a great deal of various statements in the literature of competitive advantage exist, a precise and clear definition has always been quite elusive (Ma, 2000; Rumelt, 2003; Arend, 2003; O'Shannassy, 2008). This is the "definitional problem of competitive advantage."

The "definitional problem of competitive advantage," if it truly exists, creates a series of serious problems in strategic management. For example, the inability to operationalize competitive advantage by creating a valid measure for it has led academics to define and measure competitive advantage only in terms of firm performance. Indeed, it is quite common in the literature to define and operationalize competitive advantage strictly in terms of superior performance (Grant, 1998; Foss and Knudsen, 2003; Arend, 2010), although most of them acknowledge that these terms are conceptually distinct (Barney, 1991; Ma, 2000; Powell, 2001; Newbert, 2008). However, the interchangeable use of the concepts of competitive advantage and superior performance makes the conceptual framework with leading hypotheses and sequential propositions of sources of competitive advantage leading to competitive advantage leading to superior performance of little value because they are definitionally identical (Powell, 2001). This is the "interchangeability problem of competitive advantage propositions."

Furthermore, the inability to operationalize competitive advantage along with the efforts to overcome the problem of interchangeability of competitive advantage propositions, has led scholars to use performance instead of competitive advantage as the dependent variable in strategic management research (Meyer, 1991; Powell, 2001; Baaij *et al.*, 2004). This happens even though most researchers keep asserting that they test the causal relationship between a firm's resources, a firm's capabilities, market positions or market barriers – which are considered to be the sources of competitive advantage – and competitive advantage *per se*. But essentially, the direct empirical investigation of the relationship between the sources of competitive advantage and superior performance supersedes competitive advantage as the mediating variable. This is the "dependent variable problem in strategic management empirical research."

This paper intends to shed some light into competitive advantage which is the most taken-for-granted construct of strategic management, and open further discussion on the conceptual and semantic clarity of this construct in strategic management research (Ma, 2000; O'Shannassy, 2008). We begin with an overview of competitive advantage definitions provided by the strategic management literature in order to identify the early definitional manifestations of competitive advantage along with its contemporary theoretical extensions. Next, we identify, examine and classify the problems that stem from the lack of a clear and conceptually distinct definition of competitive advantage. Finally, we explore the underlying drawbacks and fallacies arising from those problems, and we call for the adoption and the development of a

clear, distinct and robust operational definition for competitive advantage which could resolve those problems and their fallacies.

## 2. The definitional problem of competitive advantage

Theories in strategic management have extensively identified the characteristics that provide firms with competitive advantage. For example competitive advantage may derive from market barriers (Mason, 1939; Bain, 1956, 1968; Caves and Porter, 1977), market positions (Miles and Snow, 1978; Porter, 1980, 1985), idiosyncratic firm-specific resources and capabilities (Lippman and Rumelt, 1982; Wernerfelt, 1984; Barney, 1986, 1991; Dierickx and Cool, 1989; Peteraf, 1993) or dynamic capabilities (Winter, 1987; Teece *et al.*, 1997; Eisenhardt and Martin, 2000). While research has identified the sources of the determinants of competitive advantage, surprisingly it does not provide any clear definition of competitive advantage *per se* (Ma, 2000; Rumelt, 2003; O'Shannassy, 2008).

Foss and Knudsen (2003) suggest, there are multiple meanings for competitive advantage and there is no agreement on a single, unambiguous definition. Indeed, by reviewing the use of the term competitive advantage in the strategic management literature, there is no complete definition that clearly stands out. This seems to validate Ma's (2000) argument that although competitive advantage is the most widely used term in strategic management, "it remains poorly defined and operationalized" (p. 16). Most scholars define competitive advantage in terms of performance and more specifically in terms of superior performance. In other words, they conceptually match competitive advantage with superior performance. The terms "profit," "rent" and "value," are often used to represent the performance construct in strategic management (Bosse *et al.*, 2009). Moreover, there is another stream of scholars who define competitive advantage in terms of its sources or determining causes. Thus, they conceptually match competitive advantage with the sources of competitive advantage.

The two major drawbacks relating to the existence of many and contradictory definitions and to the absence of a clear definition for competitive advantage, is the lack of semantic content and the inability to operationalize the construct of competitive advantage in an empirical research study. Regarding the lack of semantic content, competitive advantage is a different concept when defined as superior performance, different when defined as a source of competitive advantage, different when defined as a determining factor of performance and different again under any other related definition. As far as the difficulty of operationalization of this construct is concerned, researchers have not been very successful in creating measurement scales for a construct that a priori cannot be clearly specified due to the lack of a distinct and robust operational definition that encompasses all its aspects.

Table I shows various definitions and statements regarding competitive advantage by important contributors to strategic management attesting to the fact that there is no clear definition of the concept of competitive advantage and that there are many nebulous definitions which lead to multiple meanings under the label "competitive advantage," an issue that we call the "definitional problem of competitive advantage."

As can be discerned from Table I, the concept of competitive advantage has a long history and tradition in the strategy literature. Ansoff (1965) was first to attempt to define competitive advantage as the isolated characteristics or particular properties of individual product markets which give a firm a strong competitive position. Influenced by Ansoff's definition which focusses on the sources of competitive advantage, much of the emphasis in the strategic management research that followed has been on

Scholar	Definition/statement	Classification
Ansoff (1965, p. 110)	Competitive advantage is the “[...] isolate characteristics of unique opportunities within the field defined by the product-market scope and the growth vector. This is the competitive advantage. It seeks to identify particular properties of individual product markets which will give the firm a strong competitive position”	Definition of competitive advantage in terms of its sources or determinates
Porter (1985, p. 3)	“There are two basic types of competitive advantage: cost leadership and differentiation”	Definition of competitive advantage in terms of its sources or determinates
Porter (1985, p. xxii)	Competitive advantage grows fundamentally out of the value a firm is able to create for its buyers	Definition of competitive advantage in terms of performance
Thomas (1986, p. 3)	“Firms with persistent high relative profitability are said to possess competitive advantage”	Definition of competitive advantage in terms of performance
Schoemaker (1990, p. 1179)	Competitive advantage is specified as “systematically creating above average returns”	Definition of competitive advantage in terms of performance
Ghemawat (1991, p. 68)	Competitive advantage is characterized as “the extent to which the benefit-cost gap for its product exceeds the benefit-cost gaps for competitors’ products”	Definition of CA in terms of performance
Winter (1995, p. 168)	“Competitive advantage is typically defined as superior financial performance. The idea of superior financial performance may be evoked by a range of phrases such as above normal returns, high quasi-rents, value creation, and other near-synonyms for making money”	Definition of competitive advantage in terms of performance
Grant (1998, p. 174)	A “firm possesses a competitive advantage over its rivals when it earns a persistently higher rate of profit”	Definition of competitive advantage in terms of performance
Besanko <i>et al.</i> (2000)	Competitive advantage is defined as an advantage in economic profits relative to the average competitor in an industry	Definition of competitive advantage in terms of performance
Powell (2002)	“Clearly, competitive advantages (locations, technologies, product features, etc.) are not the same thing as superior performance (market share, profit, share price, etc.) [...]”	Definition of competitive advantage in terms of its sources or determinates
Wiggins and Ruefli (2002, p. 84)	Competitive advantage is the “capability (or set of capabilities) or resource (or set of resources) that gives a firm an advantage over its competitors which <i>ceteris paribus</i> leads to higher relative performance”	Definition of CA in terms of its sources or determinates
Foss and Knudsen (2003, p. 2)	Competitive advantage is the “strictly positive differential profits in excess of opportunity costs that are sustained in equilibrium, where the relevant differentials may be inter-industry as well as intra-industry”	Definition of competitive advantage in terms of performance
Grahovac and Miller (2009)	Competitive advantage is defined as the cross-sectional differential in the spread between product market demand and marginal cost	Definition of competitive advantage in terms of performance

**Table I.**  
Definitions provided by important contributors in strategic management literature

identifying such sources. This may be the reason and the fundamental cause why a major part of the ensuing literature matches the sources of competitive advantage with the concept of competitive advantage itself.

Nonetheless, the pivotal event that consecrated the concept of competitive advantage in the strategic management field was Porter's (1985) book on competitive advantage. In particular, Porter (1985) states that in general there are only two basic types of competitive advantages a firm may possibly possess, i.e. cost leadership and differentiation. The term "basic types" could be translated as being equivalent to the term "sources" of competitive advantage. While Porter (1985) provides no explicit definition of competitive advantage, he states that competitive advantage stems from the firm's ability to create superior value for its buyers that exceeds the firm's cost of creating it. Porter (1985) goes one step further by asserting that superior value stems from offering lower prices than competitors for equivalent benefits or providing unique benefits that more than offset the higher price. This suggests that Porter defines competitive advantage in terms of value and particularly benefits net of price paid which could be considered and conceptualized as equivalent to the firm's performance. Since many scholars have been strongly influenced by Porter's view regarding competitive advantage, this may be the real cause why another major segment of the ensuing literature matches performance with the concept of competitive advantage.

For example, a significant part of literature asserts that firms with enduring high profitability relative to their competitors are said to possess a competitive advantage (Thomas, 1986; Grant, 1998; Besanko *et al.*, 2000). Similarly, some scholars define competitive advantage as systematically creating above-average returns or superior financial returns for a long period of time (Schoemaker, 1990; Ghemawat and Rivkin, 1999). Other researchers characterize competitive advantage as the extent to which the benefit-cost gap for a firm's product exceeds the benefit-cost gaps for a competitor's products (Ghemawat, 1991). Finally, another stream of scholars defines competitive advantage as the condition when a firm merely "outperforms" its rivals in the same industry (Besanko *et al.*, 1996; Oster, 1999).

Several scholars have confirmed the long-established conventional wisdom that competitive advantage is defined as simply superior performance or performance in general (Winter, 1995; Foss and Knudsen, 2003). The idea of superior performance can be evoked by a range of indicative phrases such as "above-normal returns, high quasi-rents, value creation, etc.," and other synonyms for making money (Winter, 1995). Although Foss and Knudsen (2003) acknowledge the improperly conceptual match of competitive advantage with performance, they define competitive advantage as the positive differential profits in excess of opportunity cost, which includes the cost of capital, that are sustained in equilibrium. However "differential profits in excess of opportunity costs" can be understood as another expression of performance according to Winter (1995).

Powell (2001) argues that, the constructs of competitive advantage and performance are acknowledged to be conceptually distinct, even though competitive advantage is often defined in terms of performance. Nonetheless, Powell in his 2001 paper never formally defines competitive advantage and instead, he only cites other references for the definition of competitive advantage. But the citations he offers do not provide clear definitions either (Arend, 2003). One year later, Powell (2002) still avoided to explicitly define competitive advantage but rather, he implicitly defined competitive advantage in terms of some sources of competitive advantage from resource-based theory. In particular, he equates resources such as locations, technologies and product features with competitive advantage. Similarly, Wiggins and Ruefli (2002), define competitive

advantage as the set of resources and capabilities that gives a firm an advantage over its competitors.

From the above literature review, it is well acknowledged that most scholars define competitive advantage in terms of performance whereas a smaller body of literature defines competitive advantage in terms of its sources or determining factors. Furthermore, there are few definitions in the literature that define competitive advantage in a rather fuzzy manner. For example, South (1981, p. 15), drawing on the work of McKinsey & Co. a consulting firm in the late 1970s, defined competitive advantage as the “philosophy of choosing only those competitive arenas where victories are clearly achievable.” In addition, Porter (1985, p. 1) notes that “Competitive strategy is the search for a favorable competitive position in an industry, the fundamental arena in which competition occurs.”

The overall conclusion from the literature review is that there is confusion and strong disagreements among different viewpoints and thoughts among scholars. Specifically, there is confusion about how the term competitive advantage is to be defined and measured. Is competitive advantage, the gains from favorable trade sales in which revenues exceed production or economic costs? Is competitive advantage any cause or determining factor labeled as source of competitive advantage which leads to superior performance? Is it superior performance? Is it super-normal returns, above-normal rents or above-average returns? Is it value to shareholders? Is it economic value or is it financial performance? In addition to this confusion there is disagreement about whether competitive advantage means winning the game, i.e. outperforming all rival firms or merely maintaining a position in the game, i.e. being above the industry average (Rumelt, 2003).

On an effort to move toward a consensus, we can identify two streams with regard to competitive advantage’s conceptual demarcation. The first stream defines competitive advantage in terms of performance whereas the second stream defines competitive advantage in terms of its sources or determinants (see “classification” column of Table I). Clearly, most definitions and statements regarding competitive advantage by important contributors in the strategic management field, conceptually match competitive advantage with either its causes, i.e. sources (e.g. particular properties of individual product markets, cost leadership, differentiation, locations, technologies, product features, set of firm resources and capabilities) or its consequences, i.e. performance (e.g. high relative profitability, above-average returns, benefit-cost gap, superior financial performance, economic profits, positive differential profits in excess of opportunity costs, cross-sectional differential in the spread between product market demand and marginal cost).

### **3. The interchangeability problem of competitive advantage propositions**

From the “definitional problem of competitive advantage” in strategic management literature, it follows that many scholars define competitive advantage in terms of performance. Indeed, it is not uncommon for researchers in strategy to think of competitive advantage in terms of superior performance (Foss and Knudsen, 2003), although most of them acknowledge that these terms are conceptually distinct (Barney, 1991; Ma, 2000; Powell, 2001; Newbert, 2008). As noted by Grant (1998), competitive advantage is sometimes defined as the ability of the firm to outperform rivals on a key performance goal. Thus, in empirical studies, “a firm’s Return on Assets (ROA) is usually compared with the industry’s average ROA in order to determine competitive advantage” (Arend, 2010, p. 242). But this usage is clearly treating the concepts of

competitive advantage and superior performance interchangeably as if both were identical. The definition and the operationalization of competitive advantage in terms of performance that lead to the identical usage of those two constructs, create analytical problems because of tautological and interchangeable propositions in strategic management research within the sources of competitive advantage-competitive advantage-superior performance conceptual framework.

A tautology is a statement of relationship that is true by logic based on the definitions of the concepts it contains. For example let's take the leading statement of relationship or proposition in strategic management:

*P1. Attaining and sustaining a competitive advantage leads to superior performance (Porter, 1985; Barney, 1991).*

However, as we have already examined earlier, competitive advantage is defined in terms of superior performance.

Definition of competitive advantage: Competitive advantage is typically defined as superior performance (Foss and Knudsen, 2003).

From the relationship statement or proposition and the definition of competitive advantage, we can advance to Proposition 2:

*P2. Attaining and sustaining a superior performance leads to superior performance.*

If the concept of competitive advantage, in this example, is defined either in the same way, or in a manner that it is a subset of superior performance, then *P2* is a tautology because it is logically true. In other words, superior performance will always lead to superior performance. There is nothing inherently negative or wrong about tautologies. On the contrary, tautologies can be extremely helpful and productive as true arithmetic statements are considered tautologies (Popper, 1959). The problem arises when researchers are developing tautological statements of relationships or propositions that are intended to have empirical content (Priem and Butler, 2001b).

Following Popper's (1959) falsifiability requirement, strategic management scholars frequently address empirical content when discussing requirements for a good theory (Powell, 2001; Priem and Butler, 2001a, b; Newbert, 2007). The empirical content facilitates the separation of purely analytical statements, which are true by logic because of the way their terms are defined, from synthetic statements, which can be true only after empirical investigation (Hunt, 1991). More specifically, analytical statements can be determined to be true or false based on the definition of their terms. Thus, a firm that attains a competitive advantage will always exhibit superior performance, whenever competitive advantage is defined as superior performance. Thus, support with data is not required to determine the correctness of this analytical statement.

On the other hand, synthetic statements are said to have empirical content because by definition they simply are not true unless tested, and the real business world must determine whether they are correct or not. If a firm claims to have superior performance whenever it has obtained a competitive advantage, and only when it has obtained a competitive advantage, then the concepts "superior performance" and "competitive advantage" are functionally equivalent. Clearly as we have mentioned, superior performance and competitive advantage are different constructs and are neither identical nor definitionally equivalent. Moreover, we could test a firm's claim

simply by observing its performance in conjunction with its ability to develop a competitive advantage. If an empirical test corroborates the firm's claim, then the hypothesis of functional equivalence is accepted, we should then tentatively also accept that the concepts of "superior performance" and "competitive advantage" are empirically equivalent.

Many statements of relationships or propositions found in the strategic management field are analytical or tautological, as shown in the earlier analysis. When we are mentioning the tautology of the sources of competitive advantage-competitive advantage-superior performance conceptual framework's propositions, we are not referring to the criticisms of the resource-based view which is essentially tautological as discussed in the literature (Foss *et al.*, 1995; Mosakowski and McKelvey, 1997; Priem and Butler, 2001a, b; Barney, 2001; Newbert, 2007; Tang and Liou, 2010). The resource-based view tautology issue stems from the fact that resources are often defined in terms of the performance outcomes associated with them. This criticism is focussing on the fact that if resources are defined as rent-producing assets then researchers cannot negate the proposition that rents stem from such resources (Peteraf and Barney, 2003).

Clearly, the tautology of resource-based view's proposition is different from the tautology of the sources of competitive advantage-competitive advantage-superior performance conceptual framework's propositions. The way to sort whether sources of competitive advantage-competitive advantage-superior performance conceptual framework's statements are synthetic or analytical is by replacing each term in the propositions derived from theory with its definition found in literature. This process allows scholars to better evaluate whether their formulated propositions are, or are not, definitionally true. In the earlier example this was done by interchanging the term "competitive advantage" with its definition, i.e. "superior performance." Following this interchangeable substitution, it becomes clear that the statement "attaining and sustaining a competitive advantage leads to superior performance" is an analytical statement with no empirical content if we define competitive advantage in superior performance terms. In other words, the above tautological proposition or hypothesis is self-verifying not subject to empirical testing (Priem and Butler, 2001a, b) and thus, of little scientific value (Powell, 2001). Given the lack of empirical content of research hypotheses which employ the concept of competitive advantage due to the tautology, any empirical tests will be methodologically weak not being able to withstand empirical scrutiny. This tautology problem although identified by some scholars (Powell, 2001, 2002; Arend, 2003; Newbert, 2008), has never been fully acknowledged by the majority of the researchers in the strategic management field.

A common logical fallacy of empirical studies in strategic management, as a result of the "interchangeability problem of competitive advantage propositions," is that researchers develop and investigate analytical statements or tautological research propositions that cannot be empirically tested. We label the above fallacy as the "falsification argument fallacy."

To resolve the issue of the tautology of strategic management propositions which include competitive advantage, and its derivative "falsification argument fallacy," Powell (2001) adopted Bayesian probabilistic reasoning as a means of distinguishing competitive advantage from superior performance. This endeavor was followed by other scholars like Durand (2002) who invoked the concept of what Mackie (1965) deemed an INUS condition of sustainable competitive advantage which is the acronym for "insufficient but necessary part of a condition which is itself unnecessary but sufficient for the result." The INUS approach, ultimately, leads to the same conclusion



with Powell's (2002) Bayesian analysis. Tang and Liou (2010) who also followed Bayesian inference, use a firm's configuration as the acting agent instead of competitive advantage in order to resolve the tautology problem. According to our understanding, all these attempts, although interesting, are unnecessary. A proper definition, in fact, can generate or resolve the tautology problem of propositions and hypotheses which employ the concept of competitive advantage (Arend, 2003). When competitive advantage is defined in terms of superior performance then the tautology problem persists. Thus, the tautology of strategic management propositions, which employ the concept of competitive advantage, can be simply resolved by not using interchangeable definitions of competitive advantage and superior performance. This demonstrates the importance of precise and clear definitions of the concepts and constructs in theory formulation and testing (Kuhn, 1970; Venkatraman and Grant, 1986; Priem and Butler, 2001b).

Thus, to resolve the "interchangeability problem of competitive advantage propositions" and its "falsification argument fallacy," we propose that researchers in the strategic management field need to develop a construct for competitive advantage that will be free of performance qualities. The newly developed construct without performance characteristics can allow measures of competitive advantage that will not contain judgments about their own economic value, thus resolving the tautology of competitive advantage propositions issue. Newbert (2008) in his conceptual-level empirical investigation of the resource-based view of the firm has contributed toward this end by operationalizing competitive advantage pursuant to Barney's (1991) definition which segregates competitive advantage from superior performance. But his construct of competitive advantage is operationalized squarely for the resource-based view. In addition, since competitive advantage is a relative term, Newbert's (2008) operational definition is actually a definition of competitiveness rather than competitive advantage. In support, Arend (2003, p. 280) mentions that "[...] the term competitive advantage includes the word competitive, it may be argued that the term has a relative basis, specifically relative to rivals." Similarly, Ma (2000, pp. 17-18) adds that "[...] competitive advantage is a relational term. It is essentially a comparison drawn between a focal firm and its rival(s) on certain dimension(s) of concern in competition." Thus, there is an imperative need to operationalize competitive advantage by comparing firm's competitiveness with its sector's average level of competitiveness that would be free from superior performance antecedents and would be independent from the underlying theoretical perspective, i.e. industrial organization perspective, market-led perspective, resource-based view and dynamic capabilities perspective.

#### **4. The dependent variable problem in strategic management empirical research**

Competitive advantage is a useful concept in strategic management only if it assists the syllogistic reasoning of the sources of competitive advantage-competitive advantage-superior performance conceptual framework. The syllogistic reasoning in strategic management consists of a major premise, a minor premise and a conclusion (Tang and Liou, 2010). The main arguments here can be represented by the following causal path:

Major premise: competitive advantage leads to superior performance.

Minor premise: mobility barriers (Bain, 1956, 1968; Caves and Porter, 1977) and/or low cost and differentiation (Porter, 1985) and/or valuable, rare, inimitable and non-substitutable resources (Barney, 1991) are sources of competitive advantage.

Conclusion: mobility barriers and/or low cost and differentiation and/or valuable, rare, inimitable and non-substitutable resources lead to competitive advantage which in turn leads to superior performance.

Because strategic management as a scientific domain attracts the interest of practitioners and scholars from various disciplines, we would try to clarify the meaning of the above syllogistic proposition using mathematical representations which can be generally understood by scholars with different scientific focus and expertise and senior managers with different backgrounds. We can illustrate this syllogistic reasoning of the main perspectives in strategic management using the Bayesian mathematical expressions below:

$$\text{Major} : \text{Prob}(\text{SP}) = f^+(\text{CA})$$

$$\text{Minor} : \text{Prob}(\text{CA}) = f^+(\text{SoCA})$$

$$\text{Conclusion} : \text{Prob}(\text{SP}) = f^+[f^+(\text{SoCA})]$$

where CA is competitive advantage; SP is superior performance; and SoCA is sources of competitive advantage under both industrial organization and market-led perspectives along with resource-based view.

The Bayesian expression of the major premise shows that the probability of achieving superior performance is a positive function of the existence of competitive advantage. The Bayesian expression of the minor premise on the other hand, shows that the probability of creating competitive advantage is a positive function of the existence of a source of competitive advantage or the joint manifestation of many sources of competitive advantage. Thus the Bayesian expression of the conclusion shows that the probability of achieving superior performance is a positive function of the occurrence of competitive advantage which in turn is a positive function of obtaining one or more source(s) of competitive advantage.

Given that all theories must survive repeated attempts at empirical testing before they can be accepted (Godfrey and Hill, 1995; Tang and Liou, 2010), one might assume that the sources of competitive advantage-competitive advantage-superior performance conceptual framework owes its acceptance and influence to well-documented assessments of empirical support for its central tenets. Surprisingly, such is not the case. In fact, instead of identifying the actual sources – whether in the form of market positions and barriers and/or idiosyncratic firm-specific resources and/or dynamic capabilities – that confer a competitive advantage and attempting to investigate the causal relationship between them and competitive advantage, researchers for the most part are trying to link those sources directly with superior performance. Even though most strategic management theories classify the concept of competitive advantage as a mediating variable between sources of competitive advantage and a firms' superior performance, seldom do researchers investigate the relationship between the sources of competitive advantage and competitive advantage *per se* and subsequently the relationship between competitive advantage and superior performance. Thus, superior performance becomes the dependent variable in empirical research of strategic management rather than competitive advantage (Powell, 2001; Baaij *et al.*, 2004) although most scholars keep asserting that they test the relationship between a firm's resources, capabilities, market positions or market barriers and competitive advantage. Meyer (1991) distinctively

notes that “true to its general management orientation, the field of strategy has consistently used firm level performance as the definitive dependent variable” (p. 824).

Furthermore, in his review of strategic management literature and in order to assess the level of empirical support of the resource-based view and dynamic capability perspective, Newbert (2007) reveals that most empirical research studies have been testing the relationship between a resource or a dynamic capability and performance. More specifically, what is most notable from Newbert’s work is that most scholars testing the resource-based view or dynamic capability perspective have examined the connection or the relationship between a specific resource or a dynamic capability operationalized as the independent variables and a measure of performance which is operationalized as the dependent variable. This is true despite the fact that most claim to be following Barney’s (1991) conceptual model which proposes that idiosyncratic firm-specific resources build competitive advantage which then in turn leads to superior performance. Indeed, although scholars in strategic management suggest that competitive advantage is a cause of superior performance, they directly relate a firm’s resources to observed performance (Durand, 2002). In other words, they empirically test the relationship of a source of competitive advantage directly with superior performance.

For example, Powell and Dent-Micallef (1997) investigated the relationship between human resources along with business resources and various measures of performance, while Deephouse (2000) tested the relationship between the amount of a firm’s media favorableness (a capability) with the firm’s return on assets. Furthermore, Schroeder *et al.* (2002) tested the relationship between learning capabilities and several measures of manufacturing performance, while De Carolis (2003), on the other hand, tested the relationship among three core competencies (technological, marketing and regulatory) with four measures of financial performance.

Additionally, and as far as the dynamic capabilities perspective is concerned, Hitt *et al.* (2001) apart from testing the firm’s human resources and their leveraging capability on its performance (resource-based view), also tested the interaction of a firm’s human resources and leveraging capability on its performance. On the other hand, Zhu and Kraemer (2002) tested the effect of the interaction of information technology infrastructure (a resource) and its e-commerce capability (a dynamic capability) on four measures of performance.

It is clear that many researchers are investigating the causal relationship between a source of competitive advantage, either a resource, a capability or a dynamic capability, and superior performance directly and not through the mediating effect of competitive advantage. If we try to express this in Bayesian terms, we end up with the following mathematical representation:

$$\text{Prob}(SP) = f^+(\text{SoCA})$$

But as we have already mentioned, the probability of achieving superior performance (SP) is a positive function of the occurrence of competitive advantage (CA), which in turn is a positive function of the existence of a source of competitive advantage (SoCA), rather than being directly a positive function of the mere existence of a source of competitive advantage.

This is the common logical fallacy of empirical studies in strategic management as a result of the “dependent variable problem in strategic management empirical research,” in the sense that researchers infer the existence of competitive advantage from *ex post* superior performance and conclude that creating competitive

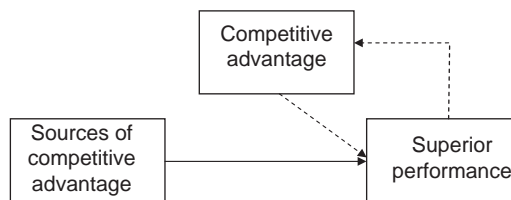
advantage *ex ante* will routinely and inevitably produce superior performance (Powell, 2001). The logical inference therefore, is that the empirical tests which are relying on evidence of superior performance as proof of the existence of a competitive advantage are methodologically flawed. We label this fallacy as the “circular argument fallacy” depicted in Figure 1.

The “dependent variable problem in strategic management empirical research” is rooted in the fact that the concepts of competitive advantage and superior performance are usually treated as interchangeable and identical due to the lack of semantic content of the competitive advantage construct. Thus the “circular argument fallacy” has its origin on an attempt by researchers to overcome the congruence of competitive advantage and performance and/or to bypass the construct of competitive advantage since they cannot operationalize it in order to use it in empirical research. The “circular argument fallacy” results to a circular reasoning which leads to a vicious circle where the dependent variable in strategic management research is superior performance instead of competitive advantage.

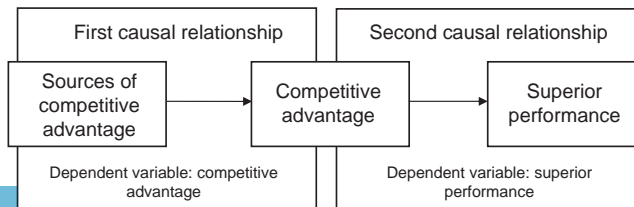
To resolve the “dependent variable problem in strategic management empirical research” and its “circular argument fallacy,” we suggest that there are actually two causal relationships with two distinct sets of dependent variables in strategic management, as depicted in Figure 2. Pursuant to the sources of competitive advantage-competitive advantage-superior performance conceptual framework, the first causal relationship is between the sources of competitive advantage and competitive advantage itself. Thus, the dependent variable in the first causal relationship is competitive advantage. The second causal relationship is between competitive advantage and superior performance, and the dependent variable in the second causal relationship is superior performance.

In the terms of empirical research, this means that we can investigate the second causal relationship only if we have established that the first causal relationship holds true, namely between any source or sources of competitive advantage and competitive advantage *per se*.

**Figure 1.**  
Dependent variable  
problem in strategic  
management empirical  
research



**Figure 2.**  
Sources of competitive  
advantage-competitive  
advantage-superior  
performance conceptual  
framework



## 5. Discussion

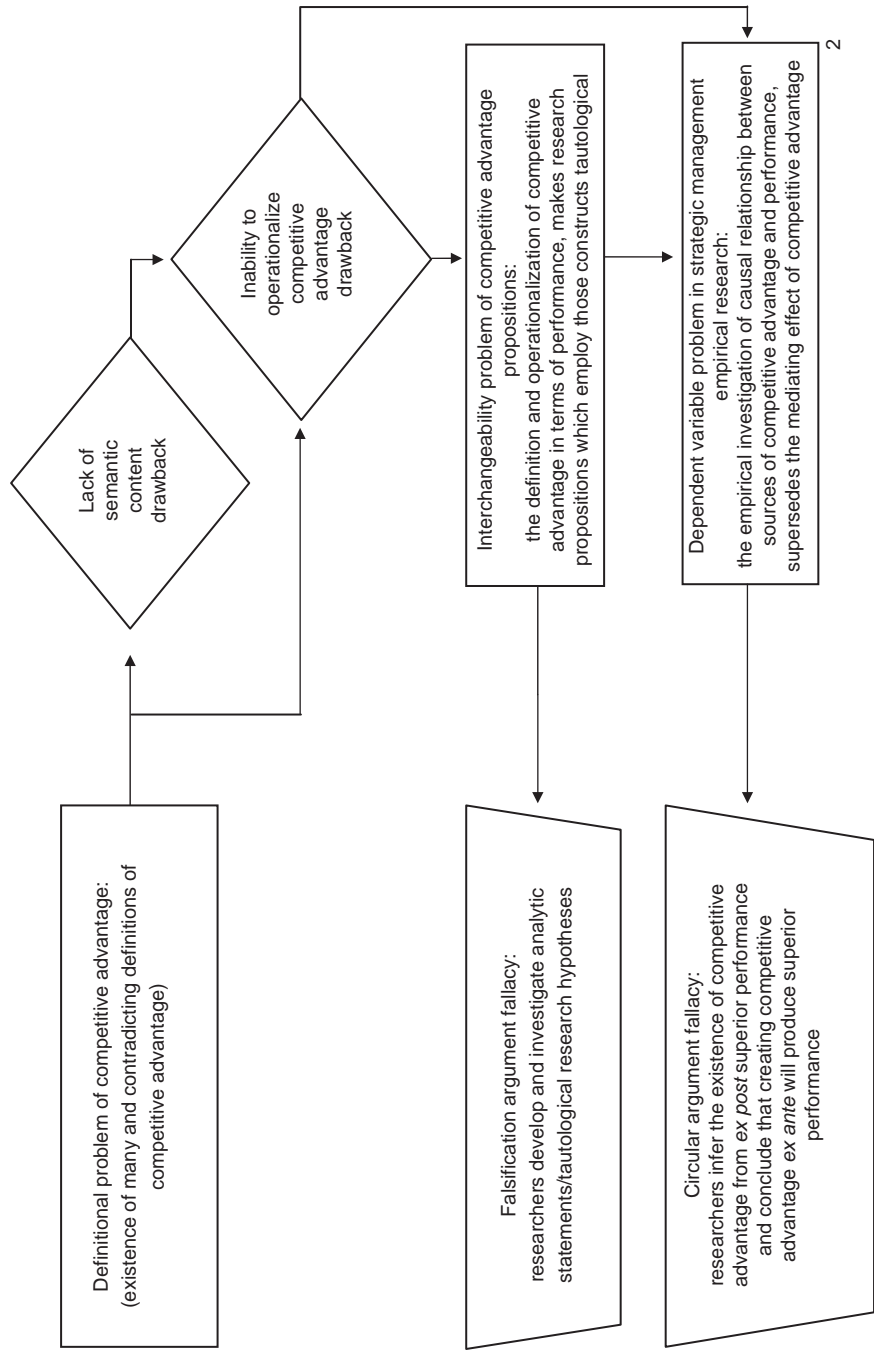
Competitive advantage has been a cornerstone concept in the strategic management field. For that reason, discussion on competitive advantage occupies a central position in the literature (Powell, 2001; Baaij *et al.*, 2004). Although competitive advantage is perhaps the most widely used concept in strategic management and has generated a large volume of theoretical and empirical discussion, it seems that it remains poorly defined and operationalized (Ma, 2000; Arend, 2003; O'Shannassy, 2008). As the true definitional nature of competitive advantage has rarely been addressed, the literature does not have a complete answer to the question on how is competitive advantage different from its sources, such as, mobility barriers, market positions and idiosyncratic firm-specific resources, or from superior performance itself.

Bain's industrial organization perspective, Porter's market-led perspective and Barney's resource-based view are the three dominant perspectives in structural school of thought of strategic management literature which purport to explain superior firm performance through the mediating effect of competitive advantage (Sigalas and Pekka Economou, 2009). It seems, however, that neither perspective readily differentiates competitive advantage from superior performance. Instead, competitive advantage and superior performance are treated more or less as interchangeable concepts and constructs under all three perspectives.

Due to its definitional problem, competitive advantage has become a "buzzword" concept in the strategic management field that causes confusion to scholars and practitioners (Markides, 2000). In addition, we contend that competitive advantage is a problematic construct since the "definitional problem of competitive advantage" along with its drawbacks create the "interchangeability problem of competitive advantage propositions" which leads to the "dependent variable problem in strategic management empirical research."

More specifically, due to the lack of a clear and conclusive definition of competitive advantage and to the interchangeable usage of superior performance and competitive advantage in much of the strategic management literature, and in order to overcome the inability to operationalize competitive advantage, superior performance is operationalized instead as a measure of competitive advantage. The operationalization of competitive advantage in terms of performance leads to the tautology of the research propositions which employ those constructs an issue that we call the "interchangeability problem of competitive advantage propositions." The resulting associated "falsification argument fallacy," arises when researchers in the strategic management field are developing tautological statements of relationships or propositions that are intended to have empirical content. To resolve the "interchangeability problem of competitive advantage propositions" and its corresponding "falsification argument fallacy," we propose that scholars in the strategic management field need to develop a construct for competitive advantage that does not contain any judgments about its own value or the firm's performance.

Furthermore, due to the inability to operationalize competitive advantage and the "interchangeability problem of competitive advantage propositions," superior performance, rather than competitive advantage, is being used as the mediating factor or the dependent variable in empirical research of strategic management. In particular, some scholars in strategic management empirical research track the sources of competitive advantage in market barriers and/or market positions and/or idiosyncratic firm-specific resources and capabilities, and then relate those sources to a measure of performance, instead of relating to a measure of competitive



**Figure 3.**  
Mapping of problems,  
drawbacks and fallacies  
associated with  
competitive advantage  
conceptualization

advantage, even though they claim that they are testing the relationship between sources of competitive advantage and competitive advantage *per se*. We call this issue the “dependent variable problem in strategic management empirical research.” The resulting associated “circular argument fallacy” arises when researchers infer the existence of competitive advantage from *ex post* superior performance, and conclude that creating competitive advantage *ex ante* will produce superior performance. To resolve the “dependent variable problem in strategic management empirical research” and its corresponding “circular argument fallacy,” we suggest that there are actually two causal relationships with two distinct sets of dependent variables in strategic management, i.e. competitive advantage in the sources of competitive advantage-competitive advantage causal relationship and superior performance in the competitive advantage-superior performance causal relationship that need to be investigated separately.

Figure 3 classifies the problems, drawbacks and fallacies that have been identified into one framework and graphically represents their causal paths. The graphical classification of the identified problems, drawbacks and fallacies, aims to raise awareness among scholars of the problems that stem from competitive advantage’s current conceptual treatment and aspires to accommodate further academic discussions to resolve those problems.

## 6. Concluding remarks

Since the discipline of strategic management for many years has been lacking a clear and conclusive definition of competitive advantage (Rumelt, 2003), its operational definition is obscure as well (Ma, 2000). We believe that, the tautology issue of research propositions which employs the construct of competitive advantage along with the dependent variable issue in strategic management empirical research is the outcome of the poor, ambiguous and unclear operational definitions of competitive advantage. The “interchangeability problem of competitive advantage propositions” derives from the murky operational definition of competitive advantage in terms of superior performance due to the absence of a qualified construct which could capture its latent manifestations. The “dependent variable problem in strategic management empirical research,” on the other hand, originates from the need to sidestep the competitive advantage construct due to the absence of a qualified variable which could measure it. Both problems and their subsequent fallacies seem to be rooted in the literature’s inability to provide a comprehensible and clear definition of competitive advantage that can lead in turn to a robust operational definition which could make its effective measurement possible.

We contend that in order for the construct of competitive advantage to be able to resolve the aforementioned problems and fallacies, it must satisfy the two criteria below:

- (1) Criterion 1: the construct of competitive advantage must be conceptually robust, by incorporating all the latent characteristics and particulars of the competitive advantage concept.
- (2) Criterion 2: the construct of competitive advantage must be completely separated from performance, by not incorporating any latent characteristics of the performance concept.

In connection with the above two criteria, we have identified in the literature a statement that may prove promising in the future conceptualization process of competitive advantage, i.e. derive a conceptually robust stipulative definition that can support a comprehensive operational definition that could in turn lead to a valid and

reliable measure of competitive advantage. In particular, Barney (1991, p. 99) states that firms obtain sustained competitive advantages [...] through responding to environmental opportunities, while neutralizing external threats. Based on Barney's broad stipulative definition, Newbert (2008) has advanced to an operational definition. According to Newbert (2008, p. 752), competitive advantage is "the degree to which a firm has exploited opportunities, neutralized threats and reduced costs." We should mention that Barney does not include "the reduction of cost" component in his 1991 article. Most likely, reduction of cost as a latent expression of competitive advantage, was introduced by Newbert (2008) as part of his effort to develop the items used to measure competitive advantage construct under resource-based view following the guidelines of Kerlinger and Lee (2000). But since Newbert's construct of competitive advantage is operationalized squarely for the resource-based view, there is an imperative need to operationalize competitive advantage, regardless of its underlying theoretical perspective. In addition, since Newbert's construct of competitive advantage, as already mentioned, is actually a construct of competitiveness, there is a need to operationalize competitive advantage by comparing firm's competitiveness with its sector's average level of competitiveness.

Based on the above, researchers are encouraged to further elaborate on a clear and comprehensive definition of competitive advantage based on Barney's stipulative definition and develop its operational definition based on the proposed two criteria and above suggestions that can underpin valid measurements in empirical research that until now have been largely ignored by strategic management literature (Venkatraman and Grant, 1986; Newbert, 2008). By doing so, the scholarly community will have a rigorous construct of competitive advantage at its disposal in order to confirm, refine, supplement and/or refute the fundamental research hypotheses in strategic management. The documentation of strategic management's main hypotheses, as a result of their empirical verification, will in turn enrich managerial understanding of the role that market barriers, market positions, idiosyncratic firm-specific resources and capabilities and dynamic capabilities play in their firm's success and survival.

The hallmark of a developed academic field is the extent to which its concepts are specifically defined and delineated (Kuhn, 1970). Thus, further definitional refinement and better operationalization of competitive advantage is required in order to resolve those three problems and their associated fallacies and before the sources of competitive advantage-competitive advantage-superior performance conceptual framework is to fully elucidate strategic management by describing what accounts for differences in firm performance, and thereby enhance its overall contribution as a theoretical framework to this field.

Responding to the literature's call for further discussion on the conceptual and semantic clarity of the construct of competitive advantage (Ma, 2000; O'Shannassy, 2008) this paper contributes to the evolution of the strategic management domain by classifying, analyzing and documenting the problems associated with the current conceptualization or semantic usage of competitive advantage in strategic management literature. Furthermore it identifies the drawbacks and fallacies derived from those problems by grouping and mapping the problems, drawbacks and fallacies into one framework, and by highlighting the importance of a clear and comprehensible operating definition of competitive advantage. This can be accomplished by conceptually separating competitive advantage from superior performance. It is advocated that the segregation of competitive advantage from superior performance can resolve the theoretical and empirical problems and the fallacies associated with



competitive advantage research, while at the same time it may guide managers and practitioners in their quest to acquire competitive advantage from their firms' resources, market positions and firm idiosyncrasies. We conclude that the above can be achieved by selecting a stipulative definition for competitive advantage that does not contain any judgments about its own value or firm's performance and that Barney's stipulative definition can serve as ferment toward this end.

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