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Research paper



Resources to Advantage: An Integrated Conceptual Analysis Of VRIN and VRIO Frameworks in Strategic Management

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Abstract

The Resource-Based View (RBV) has long been recognized as a cornerstone of strategic management, emphasizing the role of firm-specific resources in achieving sustainable competitive advantage (SCA). Two prominent frameworks derived from RBV, VRIN and VRIO, offer systematic approaches to evaluating resources based on Value, Rarity, Inimitability, Non-substitutability (VRIN), and Organization (VRIO). This conceptual paper critically examines the theoretical underpinnings, comparative distinctions, and strategic implications of VRIN and VRIO frameworks. By integrating insights from both models, a unified conceptual framework is proposed, elucidating the process through which resources are transformed into sustained competitive advantage. The paper also identifies managerial applications and highlights potential avenues for future research, particularly in dynamic and technology-driven industries. This unified perspective is particularly relevant for firms operating in dynamic industries requiring both resource uniqueness and adaptive organizational capacity. The paper aims to bridge the gap between theoretical resource evaluation and actionable strategy, offering an updated contribution to resource-based strategic management literature. The study also contributes to the literature by providing a comprehensive, real conceptual analysis, offering academics and practitioners a practical lens to evaluate and leverage organizational resources effectively.

Keywords: *Organizational Resources; Resource-Based View; Sustainable Competitive Advantage; VRIN Framework; VRIO Framework.*

1. Introduction

Achieving and sustaining competitive advantage remains a central concern for firms operating in increasingly dynamic and competitive environments. The Resource-Based View (RBV) provides a foundational explanation for performance heterogeneity by emphasizing firm-specific resources and capabilities as key drivers of long-term advantage. However, while RBV offers strong theoretical insights, its original formulation provides limited practical guidance for systematically evaluating the strategic relevance of organizational resources.

To address this limitation, scholars have developed structured evaluative tools, most notably the VRIN and VRIO frameworks. The VRIN framework emphasizes the intrinsic attributes of resources—value, rarity, inimitability, and non-substitutability—while the VRIO framework extends this logic by incorporating the organizational capacity required to exploit such resources effectively. Although both frameworks are widely used, they are often treated independently in the literature, resulting in fragmented applications and limited integrative guidance for managers and researchers.

This paper provides a comprehensive conceptual integration of the VRIN and VRIO frameworks within the broader RBV tradition. Specifically, it addresses three research questions: (i) How do VRIN and VRIO differ in evaluating strategic resources? (ii) How can an integrated VRIN–VRIO perspective enhance strategic resource assessment and deployment? and (iii) What are the implications of this integration for managerial decision-making and sustained competitive advantage?

The contribution of this paper lies in advancing existing RBV-based reviews by offering a unified evaluative framework that simultaneously considers intrinsic resource characteristics and organizational deployment conditions. By bridging theoretical analysis and managerial application, the study provides relevance for accounting, economics, and applied business research, particularly in the context of performance sustainability, governance, and strategic resource allocation. Unlike prior RBV reviews that treat VRIN and VRIO separately or sequentially, this paper offers an integrated evaluative framework that simultaneously assesses intrinsic resource attributes and organizational deployment.

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2. Literature and Theoretical Background

2.1. Resource-based view (RBV)

The Resource-Based View (RBV) posits that firms are heterogeneous entities endowed with unique resources and capabilities that serve as the foundation for competitive advantage. Resources can be tangible, such as machinery and financial capital, or intangible, including brand equity, organizational culture, knowledge, and employee competencies (Barney, 1991; Wernerfelt, 1984). Capabilities refer to the firm's ability to integrate and deploy these resources effectively. The RBV argues that resources that are valuable, rare, inimitable, and non-substitutable enable firms to achieve sustained competitive advantage. Despite its theoretical appeal, RBV has been criticized for its lack of operationalizability. Practitioners often struggle to determine which resources can generate an advantage and how to prioritize investments. This limitation has led to the development of VRIN and VRIO frameworks, which operationalize RBV principles and provide systematic criteria for resource evaluation.

2.2. From RBV to VRIN and VRIO: Conceptual Evolution and Refinement

The evolution from the Resource-Based View (RBV) to the VRIN and VRIO frameworks reflects an important effort to address RBV's conceptual breadth and limited operational clarity. RBV established that firm-level performance heterogeneity arises from differences in internal resources and capabilities rather than industry structure alone (Wernerfelt, 1984; Barney, 1991). Building on early insights from Penrose (1959), RBV shifted strategic analysis toward firm-specific assets, including tangible resources, intangible assets, and organizational capabilities (Grant, 1991; Amit & Schoemaker, 1993). Despite its influence, RBV has been criticized for conceptual ambiguity, limited falsifiability, and challenges related to empirical measurement (Priem & Butler, 2001; Kraaijenbrink et al., 2010). In particular, scholars have noted difficulties in distinguishing between resources and capabilities, as well as concerns regarding circular reasoning—where resources are deemed valuable because they generate performance, and performance is explained by resource value. These limitations motivated the development of more structured evaluative tools. The VRIN framework emerged as an attempt to operationalize RBV by specifying four intrinsic resource attributes—value, rarity, inimitability, and non-substitutability—that determine whether a resource can serve as a source of sustained competitive advantage (Barney, 1991; Peteraf, 1993). By emphasizing isolating mechanisms such as causal ambiguity, historical conditions, and social complexity (Dierickx & Cool, 1989), VRIN provided clearer guidance on why certain resources outperform others. However, VRIN remained largely focused on resource characteristics and offered limited insight into whether firms possessed the organizational capacity to exploit these resources effectively. The VRIO framework addressed this gap by replacing non-substitutability with the organizational dimension (Barney, 1995; 1997). The inclusion of organization marked a critical advancement by incorporating managerial systems, structures, culture, and complementary assets into resource evaluation. VRIO thus shifted the analytical focus from potential advantage to realized advantage, highlighting that valuable and rare resources may fail to generate superior performance in the absence of appropriate organizational deployment. Subsequent research further extended this logic through the dynamic capabilities perspective, which emphasizes the firm's ability to integrate, reconfigure, and renew resources in response to environmental change (Teece et al., 1997; Peteraf et al., 2013). The authors revisit Hart's natural-resource-based view (NRBV) of the firm, summarizing advances in testing its elements and reassessing the NRBV in light of significant recent developments within both the resource-based view literature and sustainable enterprise research. First, they explore how the NRBV can draw from and contribute to new work on dynamic capabilities. Second, they examine recent studies on clean technology and business at the base of the pyramid, highlighting how the NRBV can guide research into the resources and capabilities required for success in these fields (Hart & Dowell, 2011). For organizations to stay competitive, dynamic, and alive in such a complex global environment, they must discover, grow, and exploit their advantages to reach possible long-term goals (Asa et al., 2024; Suhartini et al., 2024). Competitive advantage is a position a company takes against its competitors, creating value for customers through a low price, or providing more benefits or service at a premium price (Mailani et al., 2024; Suhartini et al., 2024). Sure, any organization may enjoy a competitive advantage for a time, but a sustainable competitive advantage (SCA) has a deeper meaning, a deeper market position that the competition cannot easily remove or replicate (El Nemar et al., 2022). This is achieved by providing customers with superior value, either through lower prices or unique benefits (Mailani et al., 2024; Suhartini et al., 2024).The Resource-Based View (RBV) of the firm represents a theoretical transition from the external (the market) to the internal (the firm's resources) as the primary explanation for SCA (Kazlauskaitė & Bučiūnienė, 2008). RBV holds that performance differences and competitive advantages arise from the company's distinctive internal resources and capabilities (El Nemar et al., 2022; Mailani et al., 2024). Barney (1991) established an RBV framework that indicated that to constitute an SCA, a resource must be valuable, rare, costly to imitate, and non-substitutable (Kero & Bogale, 2023; Mailani et al., 2024). Strategic assets can be tangible, like equipment and facilities, or intangible, like knowledge and reputation (Hidayat & Rahayu, 2024; Kero & Bogale, 2023). Related to previous research, here the author investigates the SCAs in the IT industry from an RBV. It reviews the literature to identify CAs in three areas of the triple bottom line (TBL): economic, social, and environmental. Managers of SMEs in the IT sector evaluate these advantages using a hybrid decision-making approach that combines a modified Delphi technique and linguistic z-numbers. The importance of intangible resources is assessed through the linguistic z-number Best Worst Method (BWM). Additionally, critical CAs are prioritized using the z-number Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS). This process allows for the classification of different CAs and the proposal of strategies to address each class effectively (Abbasi Kamardi et al., 2022). While competitive advantage has been studied from many aspects, the interrelationships between organizational capabilities and strategic orientation have not been thoroughly investigated. This study is focused on understanding the characteristics of the firm that lead to sustainable competitive advantage. Strategic orientation leads to organizational capabilities, and social media capabilities mediate the influence of firm strategic orientation on sustainable competitive advantage. Specifically, the study found that strategic orientation positively influences technology, social media, and marketing capabilities. The study also found a significant positive relationship between social media capabilities and technology capabilities, as well as a significant positive relationship between marketing capabilities and the competitive advantage of the firm. The findings suggest that social media, technology, and marketing capabilities assist the firm to maximally benefit from strategic orientations that influence sustainable competitive advantage. (Majeed et al., 2025).

Together, RBV, VRIN, VRIO, and dynamic capabilities represent an evolutionary progression toward greater managerial relevance and empirical applicability. This progression underscores that sustainable competitive advantage depends not only on possessing distinctive resources but also on continuously aligning them with organizational capabilities and environmental conditions.

3. Methods: Conceptual Framework

3.1. VRIN Framework: Conceptual Foundations

The VRIN framework evaluates strategic resources based on four interrelated dimensions: value, rarity, inimitability, and non-substitutability. Together, these criteria determine whether a resource can serve as a source of sustained competitive advantage.

Value - A resource is considered valuable if it enables a firm to exploit opportunities or neutralize external threats. Resources that do not contribute to value creation lack strategic relevance and may even impose costs. Thus, value constitutes the foundational condition for competitive advantage.

Rarity - Rarity refers to the extent to which a resource is possessed by few current or potential competitors. Resources that are valuable but widely available tend to generate competitive parity rather than advantage. Scarcity is therefore essential for differentiation.

Inimitability- Inimitability reflects the difficulty competitors face in replicating or acquiring a resource. Barriers to imitation commonly arise from unique historical conditions, causal ambiguity, and social complexity. These factors prevent competitors from understanding or reproducing the underlying sources of advantage.

Non-substitutability - Non-substitutability ensures that no strategically equivalent resources exist that can perform the same function. Even valuable, rare, and inimitable resources may fail to generate sustained advantage if substitutes can achieve similar outcomes. Resources that satisfy all four VRIN criteria possess the potential to generate sustained competitive advantage (Barney, 1991; Peteraf, 1993). However, critics note that VRIN adopts a largely static perspective and does not fully account for organizational or environmental dynamics. Firms may possess VRIN resources yet fail to realize an advantage due to weak deployment mechanisms or changing competitive conditions (Zvarimwa & Zimuto, 2022; Sun et al., 2024). As such, VRIN is most effective as a diagnostic tool for assessing intrinsic resource quality.

3.2. VRIO Framework: An Updated Perspective

The VRIO framework extends VRIN by replacing non-substitutability with the criterion of organization, thereby emphasizing the firm's ability to exploit resources effectively. Organization - The organization dimension assesses whether a firm's structures, processes, governance mechanisms, and managerial systems are aligned to capture value from its resources. Even resources that are valuable, rare, and inimitable may remain underutilized without appropriate organizational support. Effective deployment depends on leadership, coordination, incentive systems, and complementary capabilities.

VRIO Outcomes - The VRIO framework predicts competitive outcomes based on cumulative resource conditions: Valuable only: Competitive disadvantage Valuable and rare: Temporary competitive advantage Valuable, rare, and inimitable: Unexploited competitive advantage Valuable, rare, inimitable, and organized: Sustained competitive advantage

By linking resource characteristics with organizational readiness, VRIO provides a more actionable framework enabling managers to evaluate both resource characteristics and the firm's readiness to capitalize on them and to evaluate strategic potential and performance implications.

3.3. VRIN and VRIO: A Comparative Analysis

Dimension	VRIN	VRIO
Final Criterion	Non-substitutability	Organization
Focus	Resource characteristics	Ability to deploy resources
Practical Use	Theoretical	Managerial/application-oriented
Substitute Concept	Explicitly included	Implicit under I + O
Emphasis	Strategic uniqueness	Operational execution

VRIN primarily evaluates the inherent qualities of resources, whereas VRIO incorporates the organizational context necessary for advantage realization. While VRIN identifies potential sources of advantage, VRIO determines whether that potential can be translated into sustained performance.

3.4. Integrating VRIN and VRIO: a Unified Perspective

An integrated VRIN–VRIO framework combines intrinsic resource evaluation with organizational deployment assessment through five sequential questions: Does the resource create value? Is it rare relative to competitors? Is it difficult to imitate? Is the firm organized to exploit it? Are there no strategically equivalent substitutes? This unified approach enables a more comprehensive evaluation of competitive advantage by linking resource quality with execution capability. The proposed conceptual model illustrates that sustained competitive advantage emerges not merely from possessing superior resources, but from the alignment between resource attributes and organizational deployment mechanisms. Resources generate advantage only when firms are structurally and strategically equipped to leverage them effectively.

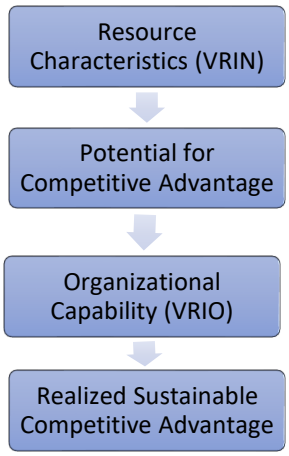


Fig. 1: Conceptual Model of VRIN and VRIO Framework.

4. Results, Discussion, and Managerial Implications

The integrated VRIN–VRIO framework offers a structured and practical tool for managers seeking to achieve sustained competitive advantage in increasingly complex and dynamic environments. First, managers can employ the framework to conduct systematic resource audits, evaluating organizational assets not only based on their intrinsic qualities but also on the firm's capacity to deploy them effectively. This dual assessment helps distinguish strategically critical resources from those that offer only temporary or limited value. Second, the framework supports more informed strategic investment and resource allocation decisions. By prioritizing resources that satisfy both VRIN attributes and VRIO organizational conditions, firms can allocate capital, managerial attention, and development efforts toward assets that are more likely to generate long-term performance benefits. This is particularly relevant for intangible resources such as knowledge, digital capabilities, organizational culture, and human capital, which are increasingly central to firm value creation yet difficult to evaluate using traditional accounting measures. Third, the emphasis on organizational deployment highlights the role of governance structures, managerial processes, and internal controls in translating resource potential into realized performance. Firms that align leadership systems, performance measurement mechanisms, and strategic reporting practices with their key resources are better positioned to sustain competitive advantage. In this sense, the VRIN–VRIO framework contributes to governance-oriented decision-making by linking resource evaluation to accountability, monitoring, and strategic disclosure. Finally, the integrated framework encourages continuous reassessment of resources in response to environmental change. As technological disruption and competitive imitation erode resource advantages, managers must regularly re-evaluate both resource characteristics and organizational readiness. This dynamic application of VRIN–VRIO supports adaptive strategy formation and enhances long-term organizational resilience.

5. Future Research Prospects

The integrated VRIN–VRIO framework presents several avenues for future research. First, empirical validation of the combined model is needed to assess whether it offers greater explanatory and predictive power than VRIN or VRIO independently. Quantitative studies across industries and firm sizes could examine their relationship with performance outcomes using advanced analytical techniques. Second, future research may explore the applicability of the framework in digital and technology-intensive contexts. Resources such as data analytics, artificial intelligence, and platform capabilities often exhibit VRIN characteristics, yet their value depends heavily on organizational processes and integration. Examining these dynamics can extend RBV assumptions in rapidly evolving environments. Third, cross-industry and cross-country studies could enhance understanding of how institutional, regulatory, and cultural contexts influence resource value and organizational deployment. Such comparisons would strengthen the external validity of the integrated framework. Fourth, longitudinal research designs may investigate how resources evolve and how firms develop dynamic capabilities to sustain advantage amid environmental change. This approach would further integrate VRIN–VRIO logic with dynamic capability theory. Finally, future studies could examine mediating and moderating variables—such as innovation, agility, collaboration, or environmental dynamism—that shape the relationship between resources and performance outcomes. These extensions would provide deeper insight into the mechanisms through which competitive advantage is created and sustained.

6. Conclusion

This paper has examined the complementary roles of the VRIN and VRIO frameworks within the Resource-Based View to advance understanding of how firms achieve sustained competitive advantage. While VRIN emphasizes the intrinsic attributes of strategic resources, VRIO highlights the critical role of organizational structures, processes, and capabilities in transforming resource potential into realized performance outcomes. By integrating these two perspectives, the study offers a unified conceptual framework that overcomes the limitations of treating VRIN and VRIO in isolation. The proposed integration demonstrates that competitive advantage is not solely a function of resource possession but emerges from the interaction between resource uniqueness and organizational deployment. This insight addresses long-standing critiques of RBV related to operationalization and managerial relevance. The integrated VRIN–VRIO framework provides a coherent basis for understanding how strategic resources translate into measurable financial and non-financial outcomes. By explicitly connecting resource evaluation with organizational readiness, the framework supports more rigorous performance measurement, enhances governance mechanisms through improved resource oversight and accountability, and informs strategic and integrated reporting practices. In particular, the framework enables firms to align resource investments with value creation logic, thereby improving transparency in how intangible and strategic assets contribute to economic performance and long-term sustainability. From a managerial perspective, the integrated VRIN–VRIO framework provides a systematic tool for strategic resource audits, investment prioritization, and

capability development. By linking resource evaluation to organizational readiness, the framework supports more informed decision-making related to performance measurement, governance, and strategic reporting. Academically, the paper contributes to RBV-based scholarship by clarifying the distinct yet interdependent roles of VRIN and VRIO and by offering a consolidated evaluative lens suitable for empirical testing and policy-oriented research. As firms navigate increasingly volatile and technology-driven environments, this integrated approach provides a robust foundation for both future research and practical application. In conclusion, the VRIN and VRIO frameworks, when integrated, provide a powerful conceptual lens for understanding the multifaceted nature of competitive advantage. By assessing both the intrinsic qualities of resources and the organization's ability to deploy them effectively, firms can systematically identify, develop, and leverage the assets most critical to sustained superior performance. This integrated approach emphasizes that achieving long-term competitive advantage is not solely a function of resource possession but also of strategic alignment, organizational capability, and continuous adaptation. Firms that embrace this comprehensive perspective are better equipped to navigate complex business environments, respond to emerging challenges, and achieve enduring success in a competitive landscape.

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