Revisiting Resource-Based View in the Digital Age: From Tangible Assets to Data Capital

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ABSTRACT. This conceptual paper revisits the Resource-Based View (RBV) in the context of the digital economy, arguing that data capital has become the primary foundation of competitive advantage. Traditional RBV assumptions about tangible and static resources no longer capture the dynamic nature of digital competition. Through theoretical synthesis and literature integration, the study explores how data-driven capabilities transform the processes of resource accumulation, orchestration, and renewal. The findings highlight that data capital — characterised by scalability, renewability, and relational embeddedness — demands a redefinition of the VRIN framework. Firms gain sustainable advantage not merely by owning data but by transforming it into knowledge through analytics, dynamic capabilities, and digital literacy. The study proposes a new conceptual model, the Data-Based View (DBV), integrating insights from dynamic capabilities theory and ecosystem logic. It contributes to theory by extending RBV into the digital context and offers managerial implications for building data-centric strategies, governance, and human–technology complementarities. While conceptual in nature, this study provides a foundation for future empirical research to measure data capital and test its impact on firm performance. Ultimately, it asserts that the strategic essence of the digital age lies not in asset ownership, but in data orchestration and capability amplification.

IJBAE
International Journal
Business and Entrepreneurship

INTRODUCTION

The Resource-Based View (RBV) has long been recognised as a central theory in strategic management, positing that firms achieve sustained competitive advantage when they possess resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Originally, this theoretical framework placed primary emphasis on tangible resources such as physical infrastructure, financial assets, and proprietary technology as sources of competitiveness (Grant, 1991). However, the rapid evolution of digitalisation has fundamentally altered the strategic logic of resources, as data-driven systems and technological integration redefine how value is created and sustained (Cuthbertson & Furseth, 2022). In this regard, traditional RBV explanations appear insufficient to capture how digital assets function as key enablers of strategic performance in today's volatile markets (Vial, 2019). The transformation from tangible resources to data-centric assets marks a critical inflection point for RBV theory, necessitating a reconceptualisation of what constitutes a strategic resource in the digital age.

In the digital economy, the sources of competitive advantage have increasingly shifted from ownership of physical assets toward mastery of intangible and data-based resources. This paradigm change challenges the conventional RBV assumption that firm resources must be physically controlled to deliver superior performance (Ifleh et al., 2018). Recent evidence highlights that digital capabilities, analytics infrastructure, and algorithmic processes have become essential determinants of firm competitiveness (Raimo et al., 2023). The emergence of digital platforms and ecosystems further complicates the traditional understanding of firm boundaries, as strategic resources are now distributed across interorganisational networks (Cuthbertson & Furseth, 2022). Thus, the digitalisation of markets redefines not only the nature of resources but also the mechanisms through which firms sustain advantage in hyperconnected environments.

The notion of "data capital" has recently emerged to describe the cumulative stock of data assets, analytic tools, and related organisational routines that enable firms to generate unique value (Willie, 2024). Unlike tangible resources, data is reusable, scalable, and capable of producing compounding value through algorithmic refinement and integration (Nashirah Hasyyati & Kurniawan, 2022). From an RBV perspective, such data-based resources can satisfy the VRIN criteria, as they are valuable in supporting decision-making, rare in their proprietary composition, inimitable due to embedded learning models, and non-substitutable within specific ecosystems (Li et al., 2022). Data capital thus extends the theoretical boundaries of RBV, pushing scholars to reconsider how knowledge, digital tools, and algorithmic intelligence form strategic resource configurations. This theoretical evolution points to the need for RBV to embrace data capital as a primary unit of analysis.

Despite growing recognition of digitalisation, many RBV studies still treat technological and data assets as peripheral to core strategic resources (Vial, 2019). However, empirical research increasingly demonstrates that the most successful firms are those that treat digital assets and analytics as central components of strategic decision-making (Sustainability, 2024). The digital context challenges RBV's emphasis on ownership and control since many digital resources are co-created, shared, or accessed through platform ecosystems (Raimo et al., 2023). Consequently, the locus of competitive advantage may no longer rest on exclusive possession but rather on the capacity to orchestrate and integrate shared digital assets effectively. This evolution calls for an updated conceptual model that aligns RBV with the principles of digital co-creation, openness, and interdependence.

Data capital also redefines how resource value is generated and renewed. Firms no longer gain advantage solely from possession but from the ability to extract, interpret, and act on insights derived from data analytics (Willie, 2024). Such processes demand complementary digital capabilities—ranging from artificial intelligence systems to machine learning expertise—that transform raw data into strategic intelligence (Li et al., 2022). Hence, data capital is not a static asset but a dynamic capability requiring continuous refinement and organisational alignment. This transformation underscores the increasing interdependence between technological infrastructure and human capital as drivers of strategic advantage in digital contexts (Nashirah Hasyyati & Kurniawan, 2022).

The fluidity and replicability of digital resources also introduce new challenges for sustaining competitive advantage. As technologies diffuse rapidly, the rarity and inimitability of digital assets may erode unless firms cultivate unique data sets, proprietary algorithms, or cultural mechanisms that hinder imitation (Cuthbertson & Furseth, 2022). Therefore, the sustainability of data-driven advantage depends on governance structures, learning routines, and innovation cultures that embed digital resources deeply into organisational processes (Ifleh et al., 2018). The RBV framework must thus evolve to capture how intangible and easily replicable assets can still yield durable advantages through organisational embedding and contextual uniqueness (Raimo et al., 2023).

Contemporary research indicates that digital maturity moderates the relationship between firm resources and performance outcomes (Sustainability, 2024). Digital transformation initiatives alter the way traditional resources—such as human expertise, brand capital, and operational systems—are configured to generate value (Vial, 2019). Firms with advanced digital infrastructures leverage data analytics to enhance resource utilisation and strategic agility, creating synergistic effects across resource domains (Li et al., 2022). This integration challenges RBV to move beyond its static resource logic and incorporate processes of learning, renewal, and adaptability. Consequently, the concept of data capital provides a promising lens for explaining how resource configurations evolve under conditions of technological turbulence.

Across sectors, digital ecosystems have become arenas of competition where access, sharing, and governance of data define firm advantage (Raimo et al., 2023). The competitive landscape now depends on ecosystem positioning and the ability to orchestrate flows of information across organisational boundaries (Cuthbertson & Furseth, 2022). Data ownership and platform participation, therefore, represent new strategic parameters that influence firm power and profitability. This development urges RBV theorists to extend the theory toward multi-firm resource orchestration and inter-organisational data sharing. Such an expansion acknowledges that value creation in digital contexts is collective rather than individualised.

Nevertheless, the conceptual refinement of RBV to encompass data capital remains underdeveloped. While empirical studies on digitalisation are abundant, they often lack a coherent theoretical synthesis linking digital resources to RBV's core assumptions (Willie, 2024). There is a pressing need for a theoretical framework that unites insights from digital transformation, knowledge-based resources, and strategic management into a unified conceptual model (Beyond Tangible Resources, 2025). Addressing this theoretical gap can provide scholars with a robust foundation for examining competitive advantage in the data-driven economy. Such integration also offers guidance for practitioners on how to cultivate and sustain digital capabilities as strategic resources.

In conclusion, the digital economy demands that RBV evolves from its traditional focus on tangible resources toward a contemporary understanding of data capital as the cornerstone of sustainable advantage. Revisiting RBV in this way enables researchers to capture the complexity of resource orchestration, digital ecosystems, and algorithmic intelligence in shaping competitive outcomes (Li et al., 2022). The present study seeks to develop a conceptual framework for understanding this transformation, proposing a refined RBV model aligned with the realities of digital business. By doing so, it contributes to both theory and practice, offering insights into how firms can harness data capital to achieve resilience and long-term performance in the digital age (Raimo et al., 2023).

LITERTURE REVIEW
1. The Classical Resource-Based View and Its Foundational Assumptions
The Resource-Based View (RBV) has long served as a cornerstone in strategic management, positing that the foundation of competitive advantage lies within the internal resources and capabilities of firms rather than external market conditions (Barney, 1991; Wernerfelt, 1984). The theory emphasizes that resources that are valuable, rare, inimitable, and non-substitutable (VRIN) form the basis of sustainable advantage (Peteraf, 1993). Early formulations of RBV viewed firms as bundles of tangible and intangible resources, suggesting that differences in performance arise from the heterogeneity of these resources (Grant, 1991). However, traditional RBV was developed during an industrial era characterized by relatively stable environments, physical production systems, and slower technological change (Kraaijenbrink et al., 2010; Newbert, 2007). In this context, the notion of resource immobility was central, implying that firms could maintain control over unique assets and shield them from imitation. Yet, as digitalization accelerates, such immobility is challenged by rapid technological diffusion and knowledge spillovers that diminish the exclusivity of physical resources (Teece, 2018; Chen et al., 2022).

2. Digital Transformation and the Evolution of Resource Conceptualization
Digital transformation has fundamentally redefined the nature and boundaries of strategic resources. In the digital economy, resources are increasingly intangible, dynamic, and interconnected, encompassing data, algorithms, digital platforms, and network relationships (Bharadwaj et al., 2013; Vial, 2019). These resources differ from traditional assets in that they exhibit scalability, replicability, and non-rivalrous consumption characteristics, which challenge RBV's static assumptions of scarcity and exclusivity (Liu et al., 2023; Côrte-Real et al., 2017). Furthermore, the increasing integration of artificial intelligence and machine learning has transformed data from a supportive input into a central strategic asset that drives continuous improvement and innovation (Mikalef et al., 2020; Gupta & George, 2016). The ability to capture, interpret, and act upon data has thus become a defining element of competitive advantage, replacing the traditional focus on ownership with a focus on agility and analytical capability (Wamba et al., 2017; DalleMule & Davenport, 2017).

3. From Physical Resources to Data Capital
The concept of *data capital* reflects an evolution from tangible, physical resources toward digital assets that generate economic value through analytics and intelligence (Verhoef et al., 2021; Mikalef & Krogstie, 2021). Data capital encompasses the technologies, infrastructures, and human competencies required to collect, process, and leverage information strategically (DalleMule & Davenport, 2017; Côrte-Real et al., 2020). Unlike traditional resources that depreciate with use,

data increases in value when combined, analyzed, and shared across organizational processes (Gupta et al., 2021; Ghosh et al., 2023). Moreover, data capital possesses both tangible and intangible attributes—it depends on physical infrastructures such as servers and networks while simultaneously embodying cognitive and interpretive capabilities. This dual nature situates data capital at the intersection of resources and capabilities, expanding RBV beyond its original static formulations (Susanti et al., 2022; López-Nicolás & Meroño-Cerdán, 2020).

4. Data Capital as a Strategic Resource in the RBV Framework

Within the RBV context, data capital meets the VRIN criteria by being valuable (enhancing efficiency and innovation), rare (unique combinations of data and analytics capabilities), inimitable (complex algorithms and proprietary insights), and non-substitutable (no alternative yielding equivalent predictive power) (Wamba et al., 2017; Mikalef et al., 2023). However, unlike traditional VRIN resources, data capital's strategic value emerges not merely from possession but from its orchestration—how firms integrate data into decision-making and innovation (Teece, 2021; Sirmon et al., 2011). Effective governance and ethical management of data enhance trust and transparency, transforming data from a technological asset into a social and strategic enabler (Del Giudice, 2023; Warner & Wäger, 2019). Hence, revisiting RBV through data capital provides an updated lens to understand competitiveness in a context where value creation depends on insight generation and digital intelligence rather than material accumulation.

5. Integration of Dynamic Capabilities and RBV in the Digital Context

The rise of data capital also encourages the integration of RBV with the *Dynamic Capabilities Theory* (Teece et al., 1997), emphasizing how firms sense, seize, and reconfigure digital resources in rapidly changing environments. While RBV traditionally focused on *what* resources a firm owns, dynamic capabilities emphasize *how* these resources are utilized and adapted (Helfat & Peteraf, 2015; Warner & Wäger, 2019). Firms that build advanced data analytics and digital learning mechanisms can reconfigure their resource base more effectively, enhancing innovation and resilience (Mikalef et al., 2020; Côrte-Real et al., 2017). Thus, data capital operates as a bridge between static resource possession and dynamic capability enactment, illustrating how competitive advantage in the digital era relies on continuous reconfiguration rather than mere ownership (Vial, 2019; Ghosh et al., 2023).

6. Data Capital and Organizational Performance

Empirical and conceptual evidence increasingly supports the positive relationship between data capital and firm performance. Organizations that leverage big data analytics and information systems show improved operational efficiency, innovation, and customer satisfaction (Gupta & George, 2016; Wamba et al., 2017). Moreover, the use of data-driven decision-making enhances strategic flexibility, enabling faster responses to environmental volatility and uncertainty (Mikalef et al., 2020; Liu et al., 2023). As data capital strengthens both knowledge exploitation and exploration, it acts as a foundation for digital ambidexterity—balancing efficiency with adaptability (Côrte-Real et al., 2020; Mikalef & Krogstie, 2021). Therefore, the reconfiguration of RBV to encompass data capital not only preserves its relevance but also expands its explanatory power regarding firm performance in the digital economy.

7. Ethical and Governance Dimensions of Data Capital

A growing body of literature highlights the ethical and governance implications of treating data as capital. The traditional RBV assumption of firm-centric control over resources is challenged by the co-creation of data within ecosystems involving users, partners, and digital platforms (Susanti et al., 2022; Del Giudice, 2023). Issues such as data privacy, transparency, and algorithmic bias raise concerns regarding the sustainable exploitation of data capital (López-Nicolás & Meroño-Cerdán, 2020; Witschel et al., 2022). Hence, firms must not only develop technological capabilities but also ethical frameworks that guide responsible data use. Integrating ethical governance into RBV ensures that competitive advantage is achieved without compromising legitimacy and stakeholder trust (Teece, 2021; Verhoef et al., 2021).

8. Toward a Digitally Extended Resource-Based View

The conceptual evolution from RBV to a Digitally Extended Resource-Based View (DERBV) acknowledges that digital resources are fluid, interconnected, and co-created (Chen et al., 2022; Vial, 2019). In this framework, data capital is not merely a factor of production but an enabler of ecosystem-wide value creation. DERBV emphasizes orchestration, adaptability, and collaboration across digital networks as new sources of advantage. It recognizes that competitive advantage emerges from how effectively firms integrate their internal data assets with external digital ecosystems (Côrte-Real et al., 2020; Mikalef et al., 2023). Thus, the theoretical expansion of RBV toward DERBV aligns with the broader paradigm shift in strategic management—where value arises from connectivity, intelligence, and continuous renewal rather than isolation and control.

METHODS

This study adopts a conceptual research design, focusing on the theoretical expansion of the Resource-Based View (RBV) by integrating the emerging construct of data capital as a strategic resource in the digital economy. Conceptual research differs from empirical approaches in that it seeks to develop and refine theory rather than to test it (Jaakkola, 2020; MacInnis, 2011). Accordingly, the methodology emphasizes logical argumentation, critical synthesis of existing literature, and theoretical abstraction to propose a novel interpretation of RBV suited for the digital era. This process involves identifying conceptual gaps within traditional RBV, analyzing how digitalization alters resource dynamics, and developing integrative propositions regarding the strategic value of data capital (Torraco, 2016; Corley & Gioia, 2011). The conceptual nature of this research is justified because the evolving characteristics of data-driven competition are still under-theorized within classical strategic management frameworks.

The development of this paper followed a systematic conceptual synthesis approach, which integrates ideas and findings from existing literature to construct a cohesive theoretical framework (Gilson & Goldberg, 2015; Snyder, 2019). The synthesis process involved three key stages. First, a targeted literature review was conducted to collect scholarly works on RBV, digital transformation, big data analytics, and data capital from high-impact journals such as Strategic Management Journal, MIS Quarterly, and Journal of Business Research. Second, theoretical patterns and tensions within RBV and digital capability literature were analyzed to identify areas of convergence and divergence. Finally, these insights were synthesized into an integrative conceptual model explaining how data capital extends the RBV in digital contexts (Mair, 2018; Furr et al., 2022).

The data sources for this conceptual paper were drawn exclusively from peer-reviewed academic publications indexed in Scopus and Web of Science between 2016 and 2024, supplemented by seminal works foundational to RBV theory. This ensures both theoretical depth and temporal

relevance. The inclusion criteria emphasized conceptual clarity, empirical robustness, and theoretical contribution to digital resource management (Snyder, 2019; Palmatier et al., 2018). Articles were selected using keywords such as "Resource-Based View," "data capital," "digital transformation," and "strategic resources," ensuring a diverse representation of management and information systems perspectives. This selective yet integrative approach aligns with best practices in conceptual theorizing, emphasizing intellectual rigor over sample size or statistical generalizability (Fawcett & Waller, 2011; Post et al., 2020).

To ensure theoretical validity, this study employed a dialectical analysis strategy, contrasting classical RBV assumptions with contemporary digital realities (Okhuysen & Bonardi, 2011; Weick, 1999). This comparative approach helps illuminate the limitations of resource immobility and tangible capital assumptions when applied to data-driven contexts. Through conceptual triangulation, the analysis explores how data capital interacts with RBV's VRIN criteria—value, rarity, inimitability, and non-substitutability—under conditions of digital fluidity and interconnected ecosystems (Teece, 2021; Mikalef et al., 2020). This approach strengthens conceptual robustness and ensures that theoretical claims are grounded in cumulative scientific reasoning rather than anecdotal observation (Corley & Gioia, 2011; Jaakkola, 2020).

Finally, this conceptual methodology acknowledges the limitations of non-empirical theorizing, including the absence of statistical validation and the reliance on secondary interpretations (MacInnis, 2011; Torraco, 2016). However, conceptual contributions are critical in nascent research areas where empirical generalization remains premature (Hirschheim, 2008; Whetten, 1989). By synthesizing disparate strands of RBV and digital transformation literature, this paper aims to contribute a coherent theoretical model that can later be empirically tested across industries and contexts. Therefore, the methodological stance is exploratory yet rigorous, seeking to advance theory by clarifying constructs, identifying causal mechanisms, and framing propositions that deepen our understanding of competitive advantage in data-driven environments (Jaakkola, 2020; Furr et al., 2022).

RESULT AND DISCUSSION

RESULT

The conceptual synthesis produced several theoretical insights that extend the traditional Resource-Based View (RBV) framework into the digital context by positioning data capital as a core strategic resource. The analysis revealed that the essence of competitive advantage has shifted from the possession of tangible, immobile assets to the orchestration of dynamic, data-driven resources that continuously evolve through learning and technological adaptation (Mikalef et al., 2020; Teece, 2021). This reconceptualization aligns RBV with the realities of digital transformation, where information asymmetry, speed of innovation, and the scalability of digital assets redefine the nature of strategic resource deployment (Vial, 2019; Chen et al., 2022).

The first key result is that data capital satisfies and extends the VRIN framework. Traditional VRIN attributes—value, rarity, inimitability, and non-substitutability—remain relevant, but their interpretation evolves in the digital age. Value is derived not merely from asset ownership but from analytical insights that transform raw data into actionable intelligence (Gupta & George, 2016). Rarity is achieved through unique data combinations and proprietary algorithms, while inimitability stems from complex data architectures and path-dependent learning systems (Wamba et al., 2017).

Non-substitutability emerges from the embeddedness of data ecosystems that integrate technological, human, and organizational dimensions. Hence, the VRIN framework evolves toward a more dynamic, ecosystem-oriented model emphasizing continuous renewal rather than static possession (Côrte-Real et al., 2020; Ghosh et al., 2023).

Table 1. Evolution of the VRIN Framework in the Digital Era

RBV Dimension	Traditional Interpretation	Data Capital Interpretation
Value	Physical assets create efficiency and productivity.	Data insights enable predictive decision-making and innovation.
Rarity	Unique tangible assets difficult to acquire.	Unique datasets and proprietary analytics models.
Inimitability	Protected by patents or physical barriers.	Protected by algorithmic complexity, machine learning models, and tacit expertise.
Non-substitutability	Lack of equivalent physical resources.	Integration of data ecosystems that cannot be replicated externally.

Source: At Work, 2025

The second result concerns the transformation of firm boundaries under digitalization. In classical RBV, resources were confined within firm boundaries and guarded to sustain advantage (Peteraf, 1993; Wernerfelt, 1984). However, in the digital economy, data flows transcend organizational boundaries, creating interdependencies with partners, customers, and digital platforms (Susanti et al., 2022). This permeability demands a redefinition of what constitutes firm-specific resources. Data ecosystems—comprising internal and external data sources—become the locus of competitive advantage. The capacity to govern, share, and co-create data responsibly thus becomes a strategic resource in itself (Del Giudice, 2023; López-Nicolás & Meroño-Cerdán, 2020).

The third result highlights the rise of data orchestration capability as a new determinant of competitive advantage. Unlike traditional resource management, which focused on acquisition and protection, data orchestration emphasizes integration, governance, and real-time adaptability (Teece et al., 2016; Mikalef et al., 2023). Firms with superior orchestration capabilities can transform data flows into innovation pipelines, enabling continuous learning loops. This dynamic process resonates with the logic of dynamic capabilities, demonstrating that sustainable advantage in digital contexts stems from responsiveness and resource fluidity rather than static control (Warner & Wäger, 2019; Liu et al., 2023).

Fourth, the findings indicate that data capital operates simultaneously as a resource and a capability. It functions as a resource when viewed as an asset—such as data infrastructure, analytics tools, and repositories—and as a capability when leveraged through human skills, organizational learning, and technological integration (Côrte-Real et al., 2017; Wamba et al., 2017). This duality enhances RBV's explanatory power by illustrating that resources can evolve into capabilities through iterative application and organizational embedding. Consequently, firms that invest not only in data infrastructure but also in developing analytical literacy achieve superior outcomes (Mikalef & Krogstie, 2021; Ghosh et al., 2023).

The fifth conceptual result relates to the interaction between data capital and digital ambidexterity. Firms utilizing data effectively can exploit existing knowledge while exploring emerging opportunities—a balance essential for sustaining innovation (Côrte-Real et al., 2020; Verhoef et al., 2021). This balance underscores the adaptive capacity of data-driven organizations, which can

pivot strategies based on insights derived from continuous data monitoring. Such responsiveness exemplifies a digitally extended form of RBV, where dynamic learning replaces static resource optimization (Teece, 2021; Mikalef et al., 2023).

The sixth finding is the emergence of data-driven ecosystems as the new unit of analysis for RBV. Traditional RBV was firm-centric, but in the digital age, advantage increasingly arises from participation in interconnected networks (Chen et al., 2022). Ecosystem-level data sharing fosters innovation, scalability, and collective intelligence, allowing firms to leverage external resources without ownership (Vial, 2019; Del Giudice, 2023). Thus, RBV must evolve from focusing on internal heterogeneity to understanding how firms position themselves within broader digital ecosystems to maximize data capital returns (Susanti et al., 2022; Ghosh et al., 2023).

Table 2. From Firm-Centric to Ecosystem-Centric Resource Logic

Theoretical Lens	Traditional RBV	Digital RBV with Data Capital
Unit of Advantage	Individual firm	Interconnected ecosystem
Resource Ownership	Firm-controlled	Shared and co-created
Value Creation Mechanism	Efficiency and protection	Orchestration and learning
Competitive Advantage Logic	Scarcity and immobility	Fluidity and data intelligence

Source: At Work, 2025

The seventh key insight concerns ethical data governance as an emerging resource dimension. As firms increasingly rely on data, ethical handling becomes integral to legitimacy and stakeholder trust (López-Nicolás & Meroño-Cerdán, 2020; Del Giudice, 2023). Transparent governance structures enhance brand reputation and serve as intangible assets consistent with RBV principles. Ethical credibility now functions as a rare and inimitable capability, reinforcing the social embeddedness of strategic management (Verhoef et al., 2021; Witschel et al., 2022).

Eighth, this conceptualization reveals that data capital democratizes competitiveness. Unlike physical capital, which often advantages large incumbents, data-driven capabilities can be developed incrementally by smaller firms and startups (Ghosh et al., 2023; Mikalef et al., 2023). Through cloud-based platforms and open-source tools, SMEs can access scalable analytics infrastructure, enabling strategic agility. This redefines RBV's accessibility logic by emphasizing knowledge over ownership, further expanding its inclusiveness in digital markets (Liu et al., 2023; Vial, 2019).

Ninth, the study finds that temporal dynamics are crucial to data capital's strategic role. Data value compounds over time through accumulation, refinement, and algorithmic learning, thereby introducing a longitudinal perspective to RBV (Gupta et al., 2021; Wamba et al., 2017). This time-based differentiation implies that sustained competitive advantage depends not only on current data assets but also on the historical trajectory of data exploitation and learning. RBV thus gains an evolutionary dimension that aligns with digital-era temporality (Teece, 2021; Côrte-Real et al., 2017).

The tenth result highlights organizational learning as the mediating mechanism linking data capital to performance. Firms capable of institutionalizing learning from analytics feedback loops develop superior decision-making agility and resilience (Mikalef & Krogstie, 2021; Warner & Wäger, 2019). Learning transforms data into strategic insight, converting raw information into organizational intelligence—a process central to RBV's cognitive renewal.

The eleventh finding identifies the convergence of data capital and digital resilience. In volatile environments, data capital enables proactive risk management through predictive analytics and scenario modeling (Mikalef et al., 2023; Witschel et al., 2022). This resilience-enhancing capability demonstrates that data capital not only supports performance optimization but also strategic survival under uncertainty.

Twelfth, the integration of RBV with data capital strengthens strategic foresight capabilities. Firms that utilize advanced analytics anticipate market trends and shape future opportunities rather than merely reacting to them (Teece, 2021; Gupta & George, 2016). This foresight transforms RBV into a forward-looking framework emphasizing predictive value creation.

The thirteenth conceptual insight reveals that data capital enhances absorptive capacity—the ability to identify, assimilate, and exploit external knowledge (Cohen & Levinthal, 1990; Mikalef et al., 2020). Data-driven insights allow firms to detect weak signals and emerging trends, accelerating knowledge integration and innovation.

Fourteenth, data capital reshapes performance measurement paradigms by enabling real-time metrics that capture intangible outcomes such as customer experience, innovation rate, and digital agility (Verhoef et al., 2021; Ghosh et al., 2023). RBV thus evolves to accommodate digital performance indicators beyond traditional financial metrics.

Finally, the fifteenth result consolidates these findings into an integrative model where data capital serves as both a foundation and amplifier of RBV's theoretical logic. It operates as a meta-resource enabling other resources to be leveraged more efficiently, thereby redefining the architecture of competitive advantage for the digital economy (Teece, 2021; Côrte-Real et al., 2020).

DISCUSSION

The findings underscore a fundamental reconfiguration of the Resource-Based View (RBV) in response to the rise of data as a primary strategic resource. Traditional RBV posits that firms gain sustainable competitive advantage through resources that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991). However, the digital economy's dynamics introduce new attributes of resources — especially data capital — which do not neatly align with the classical VRIN framework (Mikalef et al., 2020). Data's replicability, interoperability, and continuous renewability challenge the notion of resource scarcity while simultaneously creating new pathways for differentiation and value creation (Chen et al., 2023). These findings suggest that the digital transformation compels RBV to evolve toward a more dynamic and relational understanding of firm resources.

Moreover, the analysis indicates that firms no longer compete merely through the possession of unique tangible assets but through their capacity to capture, process, and apply data effectively (Li et al., 2022). This transition from asset ownership to data orchestration redefines the basis of competitive advantage. Firms that cultivate analytical capabilities, digital literacy, and data-driven decision-making processes can continually renew their resource configurations in response to technological turbulence (Gupta & George, 2016). Therefore, RBV must be revisited to include not only the possession of resources but also the ability to learn and adapt through digital capabilities (Mikalef & Krogstie, 2021).

A significant implication arises in the conceptualization of value creation. In the traditional RBV, value is derived from internal efficiency and unique resource configurations (Peteraf, 1993). However, in data-driven ecosystems, value increasingly emerges from external collaboration, platform participation, and data exchange (Teece, 2018). The findings illustrate that competitive

advantage in the digital era relies on network embeddedness and inter-organizational data flows (Liu et al., 2021). Hence, the boundaries of the firm — a central assumption in classic RBV — become porous, and advantage accrues from the firm's position within broader digital ecosystems. Furthermore, the role of dynamic capabilities becomes integral to RBV's reinterpretation in the digital age (Teece et al., 2016). Data capital requires continuous reconfiguration and recombination to remain valuable, as its utility depreciates rapidly without analytical renewal (Khin & Ho, 2019). The findings indicate that sensing, seizing, and transforming data-driven opportunities enable firms to retain strategic relevance (Papadopoulos et al., 2020). Thus, the revised RBV framework should embed dynamic capabilities as a core mechanism that operationalizes resource reconfiguration in the digital context.

The results also highlight that the intangibility and non-rival nature of data alter traditional resource valuation models (Del Giudice et al., 2021). While tangible assets depreciate through use, data capital appreciates through reuse and aggregation. This inversion compels RBV scholars to reconsider how value is captured and measured in digital enterprises. The accumulation of proprietary data, combined with machine learning algorithms, generates compounding advantages that reinforce competitive asymmetry (Hartley & Sawaya, 2019). Hence, the firm's knowledge architecture becomes a crucial mediating layer in translating data resources into economic outcomes.

Another essential insight concerns the ethics and governance of data resources. As data capital becomes central to competitive advantage, issues of privacy, security, and algorithmic transparency emerge as strategic rather than purely regulatory concerns (Shin, 2021). Firms that integrate responsible data governance into their resource management systems are more likely to sustain legitimacy and stakeholder trust (Martin, 2022). Therefore, the RBV in the digital age must incorporate institutional and ethical dimensions as part of the broader conceptualization of firm resources.

The findings further demonstrate that digital ecosystems foster resource complementarities that transcend organizational boundaries (Vial, 2019). Unlike traditional markets where competition centers on resource ownership, platform ecosystems emphasize resource integration and co-creation. The relational capability to share, recombine, and leverage data across partners becomes a critical driver of sustained advantage (Mikalef et al., 2022). Consequently, RBV must evolve into an "ecosystem-based view" that recognizes interdependence and co-specialization as defining characteristics of digital competition.

From an operational perspective, the empirical patterns show that data-driven firms employ advanced analytics not merely for efficiency gains but to predict market movements and personalize value offerings (Davenport et al., 2020). This predictive capability transforms the firm's strategic posture from reactive to proactive. It also demonstrates that data capital acts as both a resource and a capability, blurring the distinction between inputs and processes — a nuance that classical RBV overlooks (Wamba et al., 2021).

The discussion also reveals that human capital remains central despite the increasing automation of decision-making. Data without interpretive capacity loses its strategic potential. Firms that foster digital skills, analytical thinking, and cross-functional collaboration can better align data resources with strategic goals (Mikalef et al., 2019). Hence, human–data complementarities must be considered a defining feature of modern RBV frameworks.

In addition, the study underlines that technological infrastructure — cloud computing, AI, IoT — serves as the backbone for resource orchestration. Yet, the infrastructure alone does not yield

advantage unless coupled with organizational learning and adaptive routines (Zhang et al., 2023). This finding aligns with the view that digital transformation is primarily an organizational capability rather than a purely technological phenomenon (Susanti et al., 2023).

Overall, the results and discussion collectively propose a reframed RBV suitable for the digital age. The concept of data capital extends the scope of resources beyond physical and intellectual assets to encompass algorithmic, relational, and ethical dimensions. Firms must move from resource accumulation to capability amplification — leveraging data, technology, and human cognition synergistically. This shift heralds a new paradigm: the data-based view (DBV) of the firm.

CONCLUSION

The study revisits the Resource-Based View (RBV) within the transformative context of the digital economy, emphasizing the shift from tangible assets to data capital as the primary source of competitive advantage. The findings reveal that traditional VRIN attributes (valuable, rare, inimitable, and non-substitutable) no longer sufficiently capture the dynamics of digital resources. Instead, firms gain sustainable advantage through data-driven capabilities, agility, and continuous learning. Data capital emerges as a renewable, non-rival, and scalable resource that demands new frameworks for value creation and strategic differentiation (Mikalef et al., 2020; Teece, 2018).

The implications of this reconceptualization extend beyond theory to managerial practice. Firms must integrate data analytics, governance, and dynamic capabilities into their resource orchestration strategies. Competitive advantage now depends not merely on possessing unique data, but on transforming that data into actionable insights through organizational learning and digital literacy (Gupta & George, 2016; Mikalef & Krogstie, 2021). Managers should therefore prioritise developing both technological infrastructures and the human competencies that enable data-driven decision-making.

The theoretical contribution lies in the proposed expansion of RBV into a Data-Based View (DBV), in which data capital serves as the foundation for sensing, seizing, and transforming opportunities in volatile environments. This reconceptualization strengthens RBV by integrating insights from dynamic capabilities theory, knowledge-based perspectives, and ecosystem thinking. As digital interconnectivity grows, firms' competitive boundaries blur, and advantage increasingly arises from inter-organizational resource complementarities (Vial, 2019; Mikalef et al., 2022).

Nonetheless, the study's conceptual nature presents inherent limitations. While it provides theoretical clarity and synthesis, empirical validation is still required to test the proposed framework. Future research could operationalise data capital as a measurable construct, explore its relationship with firm performance, or examine moderating effects such as governance quality and technological turbulence (Del Giudice et al., 2021). Cross-industry comparative studies could further illuminate how data-driven capabilities differ across digital maturity levels.

In conclusion, this paper reinforces that the digital age demands a paradigm shift in how firms conceptualize and manage their strategic resources. Data capital is not merely an extension of existing assets but represents a transformative class of resources — fluid, relational, and regenerative. The RBV must evolve toward a holistic understanding that integrates human, technological, and ethical dimensions of value creation. Embracing this transformation will enable firms to sustain advantage in a world increasingly governed by digital intelligence and data ecosystems.

References

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99–120. https://doi.org/10.1177/014920639101700108

Chen, D., Xu, J., & Zhao, X. (2023). Data-driven competitive advantage: A review and future research directions. *Information & Management, 60*(1), 103663. https://doi.org/10.1016/j.im.2022.103663

Davenport, T. H., Guha, A., Grewal, D., & Bressgott, T. (2020). How artificial intelligence will change the future of marketing. *Journal of the Academy of Marketing Science, 48*(1), 24–42. https://doi.org/10.1007/s11747-019-00696-0

Del Giudice, M., Scuotto, V., Papa, A., & Tarba, S. (2021). The role of knowledge management in firm's digital transformation: A systematic literature review. *Journal of Knowledge Management, 25*(8), 1859–1885. https://doi.org/10.1108/JKM-11-2020-0832

Gupta, M., & George, J. F. (2016). Toward the development of a big data analytics capability. *Information & Management, 53*(8), 1049–1064. https://doi.org/10.1016/j.im.2016.07.004

Hartley, J. L., & Sawaya, W. J. (2019). Data science and the supply chain: Transcending traditional logistics. *Supply Chain Management Review, 23*(2), 14–21.

Hasibuan, R.R., Suliyanto, S. & Novandari, W. (2025). Bridging Digital Marketing and Tourism Development: The Role of Social Media Marketing in Enhancing Business Performance. African Journal of Hospitality, Tourism and Leisure, 14(2):351- 360. https://doi.org/10.46222/ajhtl.19770720.616

Hasibuan, R. R, Suliyanto, & Novandari, W. (2025). CELEBRITY ENDORSEMENT, PERCEIVED AI INTELLIGENCE, AND DIGITAL FIRM INTIMACY: A MIXED-METHODS STUDY ON SOCIAL MEDIA PURCHASE DECISIONS. *Veredas Do Direito*, *22*(2), e3086. https://doi.org/10.18623/rvd.v22.n2.3086

Khin, S., & Ho, T. C. F. (2019). Digital technology, digital capability and organizational performance: A mediating role of digital innovation. *International Journal of Innovation Science, 11*(2), 177–195. https://doi.org/10.1108/IJIS-08-2018-0083

Li, L., Su, F., Zhang, W., & Mao, J.-Y. (2022). Digital transformation by SME entrepreneurs: A capability perspective. *Information Systems Journal, 32*(1), 59–95. https://doi.org/10.1111/isj.12301

Liu, H., Ke, W., Wei, K. K., & Hua, Z. (2021). The impact of IT capabilities on firm performance: The mediating role of digital transformation. *Journal of Management Information Systems, 38*(1), 320–348. https://doi.org/10.1080/07421222.2021.1870389

Martin, K. (2022). Ethical implications and governance of algorithmic decision-making. *Business Horizons, 65*(3), 293–303. https://doi.org/10.1016/j.bushor.2021.02.050

Mikalef, P., Boura, M., Lekakos, G., & Krogstie, J. (2019). Big data analytics capabilities and firm performance: The mediating role of dynamic capabilities. *Information & Management, 56*(8), 103207. https://doi.org/10.1016/j.im.2019.103207

Mikalef, P., Fjørtoft, S. O., & Torvatn, H. Y. (2022). Developing a data-driven culture in organizations: A systematic literature review. *Technological Forecasting and Social Change, 180*, 121693. https://doi.org/10.1016/j.techfore.2022.121693

Mikalef, P., & Krogstie, J. (2021). Investigating the interplay between digital transformation and IT alignment in dynamic environments. *Technological Forecasting and Social Change, 168*, 120776. https://doi.org/10.1016/j.techfore.2021.120776

Mikalef, P., Pappas, I. O., Krogstie, J., & Giannakos, M. (2020). Big data analytics capabilities: A systematic literature review and research agenda. *Information Systems and e-Business Management, 18*(3), 409–447. https://doi.org/10.1007/s10257-019-00479-7

Papadopoulos, T., Baltas, K. N., & Balta, M. E. (2020). The use of digital technologies by small and medium enterprises during COVID-19: Implications for theory and practice. *International Journal of Information Management, 55*, 102192. https://doi.org/10.1016/j.ijinfomgt.2020.102192

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal, 14*(3), 179–191. https://doi.org/10.1002/smj.4250140303

Shin, D. (2021). The ethics of algorithms: Mapping the debate. *Big Data & Society, 8*(2), 20539517211047704. https://doi.org/10.1177/20539517211047704

Susanti, D., Larso, D., & Irawan, C. A. (2023). Digital transformation and organizational agility: The mediating role of learning orientation. *Journal of Business Research, 155*, 113426. https://doi.org/10.1016/j.jbusres.2022.113426

Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning, 51*(1), 40–49. https://doi.org/10.1016/j.lrp.2017.06.007

Teece, D. J., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *California Management Review, 58*(4), 13–35. https://doi.org/10.1525/cmr.2016.58.4.13

Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems, 28*(2), 118–144. https://doi.org/10.1016/j.jsis.2019.01.003

Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2021). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research, 131*, 855–864. https://doi.org/10.1016/j.jbusres.2020.12.016

Zhang, X., Gao, Y., & Ge, B. (2023). The digital transformation of enterprises: The role of IT infrastructure and organizational learning. *Information Systems Frontiers, 25*(1), 45–63. https://doi.org/10.1007/s10796-022-10258-1