



Antecedents and Outcomes of Sustainable Competitive Advantage in the Era of Artificial Intelligence: A Conceptual Overview

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Abstract

Purpose: Artificial intelligence (AI) is helping organization to acquire knowledge, take informed decisions, innovate, allocate resources and interact with stakeholders effectively and hence, bring a transformative up-scaling which is resulting in gaining successful competitive edge. However, mere adoption and usage of AI will not result in gaining quick and automatic sustainable competitive advantage. Therefore, there are various other factors required for an organization to obtain competitive edge and the factors like the ability of organizations to convert technological investments into durable competitive outcomes, complementary organizational resources, dynamic capabilities, innovation, human capital, leadership, sustainability practices and responsible governance. With a focus on the developing role of artificial intelligence, this conceptual paper examines and incorporates recent research on the causes and effects of sustainable competitive advantage.

Design/Methodology/Approach: The adoption of blockchain, corporate digital responsibility, AI adoption, green innovation, knowledge management capability, human resource capability, fintech adoption, strategic leadership, women's strategic leadership, and lean and green manufacturing practices are studies that are cited in this paper. The Resource-Based View (RBV) and Dynamic Capabilities Theory (DCT) provide additional support for conceptualizing the sustainable competitive advantage.

Findings: The paper proposes an integrated conceptual framework in which AI-enabled capabilities act as an important contemporary antecedent, while organizational agility, innovation capability, business model innovation and sustainability-oriented capabilities function as mechanisms through which AI and other strategic resources generate SCA. The proposed framework identifies technological, organizational, strategic, sustainability and institutional factors as major antecedent categories and identifies sustainable performance, organizational resilience, business value creation, innovation performance and long-term organizational competitiveness as major outcomes.

Future Research: By changing the focus from "AI adoption: competitive advantage" to "AI-enabled capability: sustainable competitive advantage," the paper adds to the body of literature and offers suggestions for further empirical study.

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Keywords: Artificial intelligence, sustainable competitive advantage, dynamic capabilities, resource-based view, AI capability, innovation capability, organizational agility, sustainability, digital transformation

1. Introduction

It is important for the organization to not only focus on achieving better performance but also perform better than their competitors and gain competitive advantage over them so that the competitors find it difficult either to imitate or replace them, in this regard focusing on sustainability that is long-term achieving a competitive advantage becomes necessary. Explains why

Sustainable competitive advantage (SCA) has occupied a central position in strategic management. According to the Resource-Based View (RBV), resources that are rare, valuable, hard to replicate, and non-replaceable can serve as the basis for a long-term competitive advantage (Barney, 1991) ^[1]. But modern competitive contexts are marked by rapid innovation, shifting stakeholder expectations, environmental uncertainty, and technology upheaval. As a result, information, digital capabilities, innovation, and organizational adaptability are becoming more important sources of competitive advantage than traditional physical resources.

Artificial intelligence has brought many important technological developments like smart chatbots which provides quick answers to customer query reducing human effort and time and resulting firms to be more productive, efficient and profitable. Organizations increasingly employ AI for prediction, automation, customer analytics, decision support, resource allocation, product development and process optimization. However, AI is more than just another information technology. AI has the potential to impact how businesses create capabilities, revamp procedures, and make strategic choices. For instance, Mikalef and Gupta (2021) ^[7] construct AI competency as an organizational capability made up of several AI-related resources and show how it relates to business performance and organizational creativity. Tasleem *et al.* (2026) ^[10] demonstrate that HR technology readiness can be evaluated through an AI-driven decision-intelligence framework that incorporates uncertainty into strategic investment decisions. This suggests that organizational readiness to deploy AI technologies is not merely a technological prerequisite but a strategic capability that can influence resource allocation, adaptability, and ultimately competitive advantage

Krakowski *et al.* (2023) ^[6] demonstrated that mere adoption of technology will not help firms to acquire sustainable advantage, this is why the strategic significance of AI meaning how consciously with well planning firms need to integrate AI with their organization resources so that AI can alter the sources of competitive advantage by creating both substitution and complementarity between human capabilities and AI-enabled systems. Therefore, the strategic challenge today involves how businesses integrate AI with human resources, organizational knowledge, innovation systems, and dynamic capabilities rather than just whether they use AI.

The Dynamic Capabilities Theory is in line with this idea. According to Teece (2007) ^[12], businesses need to be able to recognize dangers and opportunities, take advantage of them, and rearrange resources in dynamic contexts. AI-powered analytics, predictive intelligence, automated decision systems, and digitally enabled organizational learning can all help these processes more and more in the AI era.

Numerous paths to SCA are identified by the examined studies. Business value creation, competitive advantage, and sustainable business performance have been demonstrated to be impacted by blockchain adoption, with business value creation and competitive advantage serving as mediating mechanisms (Daud *et al.*, 2026) ^[3]. SCA is strengthened as a result of corporate digital responsibility's contribution to green product and process innovation (Nasaj, 2026) ^[8]. Adoption of AI in SMEs is correlated with both marketing analytics and marketing innovation, with innovation acting as a particularly significant relationship between AI adoption

and SCA.

Green supply chain management, knowledge management, organizational agility, innovation capability, human resource capability, organizational culture, fintech adoption, employee green behavior, and strategic leadership are all factors that influence SCA, according to other research in the gathered literature. These results imply that rather than being the direct result of a single antecedent, SCA should be understood as the result of a linked capacity system.

In order to comprehend the causes and effects of sustainable competitive advantage in the AI era, this study provides a conceptual framework.

2. Review of Literature

2.1. Sustainable Competitive Advantage

Sustainable competitive advantage is the ability of a firm to create and maintain more value over time in comparison to competitors. The RBV provides one of the key arguments for SCA by arguing that resources differ among businesses and that strategically valuable resources may provide advantages when they are difficult for competitors to duplicate or replace (Barney, 1991) ^[1]. However, a static resource approach is challenged by the modern corporate environment. Customer tastes shift swiftly, digital technologies advance quickly, and new innovations have the potential to upend established positions in the market. As a result, companies need both significant resources and the capacity to continuously replenish and reorganize them.

In this case, dynamic skills are essential. Teece (2007) ^[12] conceptualizes dynamic capabilities using the sensing, seizing, and reconfiguring processes. These characteristics allow companies to continuously refill their resource base and adjust to technological and environmental changes. Therefore, RBV can explain why specific organizational resources may be advantageous, whereas DCT helps explain how organizational resources can be updated and modified in dynamic conditions.

As a result, SCA in the AI era can be seen as the result of the interaction between strategic resources and organizational capabilities

2.2. Artificial Intelligence and the Changing Competitive Landscape

AI is evolving from being merely a technological investment to an organizational capacity. AI competency is defined by Mikalef and Gupta (2021) ^[7] as an organization's capacity to deploy AI-related resources to generate value and show how it relates to organizational performance and creativity. It's critical to distinguish between AI acceptance and AI competence. While capacity shows if a business can successfully integrate AI technology with data, human skills, organizational procedures, and managerial resources, adoption shows that an organization has deployed AI technology.

This distinction is supported by recent data. According to an Emerald analysis in the gathered literature, marketing innovation completely mediates the association between AI adoption and SCA, whereas AI adoption has a beneficial impact on marketing analytics capabilities and marketing innovation. A sequential approach from AI adoption through analytics and innovation to SCA is also identified by the study. AI-enabled HR technologies and people analytics can strengthen organizational capabilities by improving workforce planning, decision quality, productivity, and

organizational agility (Tasleem, 2025) ^[11].

Similar to this, current research on AI assimilation contends that when AI is integrated into organizational procedures and dynamic capacities rather than continuing to be a stand-alone technical investment, businesses gain greater sustainability outcomes (Zhang & Dong, 2026) ^[13].

3. Conceptual Framework

3.1. Antecedents of Sustainable Competitive Advantage

Based on the reviewed Emerald literature and supporting theoretical literature, the antecedents of SCA can be organized into five broad categories.

3.1.1. AI Adoption and AI Capability

One of the most significant new antecedents of competitive advantage is the deployment of AI. Information processing, forecasting, personalization, automation, and decision quality can all be enhanced with AI. However, the organization's capacity to incorporate AI with current resources and capabilities will determine its strategic worth.

According to the RBV viewpoint, AI can gain strategic value when paired with complementary resources like organizational knowledge, technological know-how, and proprietary data (Mikalef & Gupta, 2021) ^[7]. Recent Emerald evidence indicates that AI adoption can indirectly influence SCA through marketing analytics and marketing innovation, implying that innovation is more relevant than technology ownership alone.

Proposition 1: AI capability positively contributes to long-term competitive advantage by developing and deploying complementing organizational skills.

3.1.2. Organizational Capability Antecedents

3.1.2.1. Knowledge Management Capability

information management is a valuable organizational resource since AI systems rely on high-quality organizational information, data, and skill to generate helpful insights.

Humran *et al.* (2026) ^[5] discovered that knowledge management skill improves SCA, but this effect is completely mediated by organizational agility and innovation capability. The sequential approach from knowledge management to innovation, agility, and SCA was especially important.

This conclusion is particularly pertinent to the AI environment because, while AI can accelerate knowledge acquisition and processing, businesses must be able to turn information into organizational learning and innovation.

Proposition 3: Knowledge management capability positively influences SCA through organizational agility and innovation capability.

3.1.2.2. Organizational Agility

Organizational agility refers to organizations' ability to respond quickly to external changes and opportunities. AI can improve agility by delivering real-time data, predictive analytics, and speedier decision support.

The significance of adaptability is especially crucial in technology environments that are defined by fast change. AI-enabled businesses may gain an advantage by using AI to reduce decision cycles and rearrange organizational resources.

Proposition 4: Organizational agility mediates the relationship between AI-enabled capabilities and SCA.

3.1.3. Human Capital and Strategic Leadership

Organizations require human talents to understand information, make strategic decisions, and implement change, therefore technological resources alone cannot produce a sustained advantage.

Andleeb *et al.* (2026) show how strategic human resource management methods, human capital development, employee motivation, and company culture all contribute to SCA.

This is especially pertinent to AI since it alters, rather than destroys, the strategic value of human expertise. Organizations require individuals that can interact with AI, evaluate AI-generated data, dispute improper recommendations, and apply AI creatively.

Strategic leadership is also crucial since it influences whether AI is perceived as an automated tool or a strategic capacity. According to the studied literature, strategic leadership is a critical basis for dynamic capacities and SCA.

Furthermore, Herlita's (2025) ^[4] analysis shows that women's strategic leadership has a direct impact on SCA, with adaptive innovation and diversity reinforcing the link.

Proposition 6: Human capital capability positively influences SCA by strengthening innovation, AI utilization and organizational adaptability.

Proposition 7: Strategic leadership positively influences SCA through dynamic capability development and innovation.

3.1.4. Sustainability-Oriented Antecedents

Customers, regulators, investors, and other stakeholders have all demanded ethical company practices, making sustainability an increasingly crucial consideration.

The collected literature illustrates that sustainable resources can provide a competitive advantage. Chatti *et al.* (2025) ^[2] discovered that lean and green manufacturing strategies improve both SCA and sustainable performance, while SCA contributes to sustainable performance.

Similarly, the evaluated corporate digital responsibility study shows that responsible digital practices can foster green product and process innovation, hence strengthening SCA.

Green supply chain management helps to SCA through innovation and stakeholder participation, albeit these linkages are not always direct.

As a result, an organization's capacity to combine digital transformation with environmental and social responsibility is increasingly important for achieving long-term competitive advantage.

Proposition 8: Sustainability-oriented capabilities positively influence SCA through green innovation, stakeholder collaboration and sustainable business practices.

3.1.5. Responsible AI and Corporate Digital Responsibility

AI offers new governance challenges such as transparency, privacy, bias, accountability, explainability, and ethical data use.

Corporate digital responsibility thus provides a potentially crucial precursor to SCA. Nasaj's Emerald study (2026) ^[8] offers Digital AI Awareness as an extra dimension of corporate digital responsibility, arguing that responsible AI-related practices can boost green innovation and long-term competitiveness.

Responsible AI may contribute to SCA through several mechanisms:

1. Stakeholder trust;
2. Regulatory legitimacy;
3. Responsible innovation;
4. Risk reduction;
5. Ethical decision-making;
6. Reputation enhancement; and
7. Sustainable technology adoption.

Consequently, responsible AI should not be treated merely as a compliance issue. It may become a strategic capability that protects the durability of AI-enabled competitive advantage.

Proposition 9: Responsible AI and corporate digital responsibility positively influence SCA through stakeholder trust, responsible innovation and organizational legitimacy.

3.1.6. Institutional and Environmental Antecedents

Organizations do not function independently of their institutional framework. Regulatory regulations, industry norms, competitive imitation, and stakeholder pressures can all influence technological adoption and strategic behavior. Daud *et al.* (2026) ^[3] show that coercive, mimetic, and normative institutional forces all favorably influence blockchain adoption, with normative pressure having the most impact. The study also demonstrates that technology adoption can impact business value, competitive advantage, and long-term business performance.

Although the study concerns blockchain rather than AI, the logic can be extended conceptually to AI adoption. Organizations may adopt AI because of:

- regulatory expectations;
- competitor pressure;
- customer expectations;
- industry norms;
- technological uncertainty; and
- strategic imitation.

However, institutional pressure may explain why organizations adopt AI but not necessarily whether they achieve SCA. Capability development remains necessary to

convert adoption into strategic value.

Proposition 10: Institutional pressures positively influence AI adoption, while organizational capabilities determine the extent to which AI adoption is converted into SCA.

3.2. Outcomes of Sustainable Competitive Advantage

SCA is itself an important organizational outcome, but it can also generate subsequent outcomes.

3.2.1. Sustainable Organizational Performance

The examined literature clearly shows a link between SCA and long-term performance. Chatti *et al.* (2025) ^[2] show that SCA has a favorable impact on sustainable performance and partially mediates the association between lean/green manufacturing methods and sustainability.

3.2.2. Business Value Creation

The literature reviewed clearly demonstrates a relationship between SCA and long-term performance. Chatti *et al.* (2025) ^[2] demonstrate that SCA improves sustainable performance and mediates the relationship between lean/green manufacturing approaches and sustainability.

3.2.3. Innovation Performance

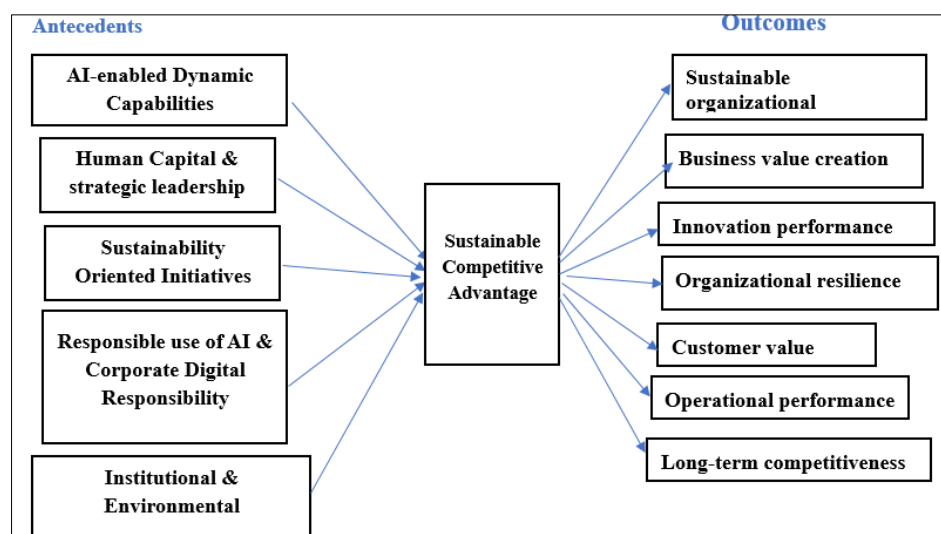
SCA can give firms with the resources and market position they require to stay innovative. In contrast, innovation is a key mechanism for creating competitive advantage.

3.2.4. Organizational Resilience

AI-enabled forecasting, analytics, and fast resource reconfiguration may boost organizational resilience. Recent study suggests that incorporating AI can improve long-term performance by enhancing organizational agility, green innovation, and resilience.

3.2.5. Long-Term Competitiveness

Finally, SCA is supposed to help achieve better and long-term competitive posture. However, the longevity of the advantage is dependent on whether competitors can replicate the underlying AI resources, data, capabilities, and organizational procedures.



Source: Author

Fig 1: Proposed Conceptual Framework The synthesis of the literature suggests the following conceptual structure:

4. Theoretical framework

The proposed framework integrates the Resource-Based View and Dynamic Capabilities Theory.

The RBV emphasizes the value of resources including AI infrastructure, proprietary data, human capital, organizational knowledge, and technology skill. These resources may have competitive potential if they are valuable, scarce, difficult to replicate, and difficult to substitute (Barney, 1991)^[1].

However, AI technologies are becoming more available to competitors. As a result, mere ownership of AI may not be rare for much longer. This introduces a theoretical constraint to a strictly resource-based argument.

Dynamic Capabilities Theory tackles this restriction by highlighting an organization's ability to constantly adapt, integrate, and reconfigure resources (Teece, 2007)^[12]. AI can help improve environmental sensing, predictive decision-making, and resource coordination.

5. Research Gap

The review identifies several important gaps.

First, present research frequently looks at individual antecedents of SCA independently. Some studies, for example, focus on artificial intelligence, while others look at knowledge management, green practices, leadership, or HR capabilities. The examined Emerald literature exemplifies this dispersion across many organizational contexts.

Second, limited research combines AI, sustainability, and dynamic capabilities into a single SCA framework.

Third, present AI research often focuses on the direct relationship between AI deployment and organizational performance. However, evidence indicates that the relationship is frequently moderated by innovation, agility, analytics, human-AI integration, and other organizational factors.

Fourth, responsible AI and corporate digital responsibility are still under-integrated into SCA models. The current Emerald research on corporate digital responsibility lays a solid platform by linking responsible digital strategy to green innovation and SCA.

Fifth, there is a need to understand the conditions under which AI-generated benefits are sustained. As AI technologies become more widely available, technological possession itself may become less unusual. Instead, private data, organizational routines, human-AI collaboration, organizational culture, innovation ecosystems, and dynamic skills may provide a long-term competitive edge.

6. Theoretical Contributions

This conceptual paper offers three primary theoretical contributions.

First, it brings the RBV into the AI era by establishing AI capabilities as a strategic organizational resource that must be supplemented with complementary resources. Second, it broadens Dynamic Capabilities Theory by emphasizing AI-enabled systems as mechanisms that might improve organizational sensing, seizing, and reconfiguring processes. Third, it combines technological, organizational, strategic, sustainability, and institutional antecedents to provide a comprehensive framework for explaining SCA. The concept thus goes beyond the technological determinism contained in a basic AI adoption-performance relationship.

7. Managerial Implications

The approach has various consequences for managers.

First and foremost, enterprises should avoid considering AI investment as an end in itself. AI should be integrated into organizational strategy, knowledge management, human capital, and innovation systems. Second, executives should invest in AI-related human competencies. Employees must possess not only technical expertise, but also analytical, strategic, and ethical competencies in order to collaborate effectively with AI. Third, organizations should improve their agility. AI-generated information adds value only when enterprises can act on it promptly. Fourth, managers should link AI activities to environmental goals. AI can help with resource optimization, environmental monitoring, green innovation, and circular business models. Fifth, appropriate AI governance should be part of a competitive strategy. Transparency, accountability, and stakeholder trust can all have an impact on the long-term viability of AI-based competitive advantages. Finally, managers should create difficult-to-replicate organizational procedures rather than relying entirely on commercially accessible AI solutions. The strategic advantage is going to be increasingly found in how firms integrate AI into their people, knowledge, data, processes, and ecosystem links.

8. Future Research Directions

Future empirical research can evaluate the suggested paradigm across industries and nations. Longitudinal studies would be especially useful because SCA is intrinsically concerned with longevity over time. Cross-sectional research can identify relationships, but it cannot determine if AI-enabled advantages are durable. Future research should also compare SMEs and large enterprises, as the resources necessary to build AI skills may vary significantly. Another major direction is to investigate human-AI collaboration. Rather of regarding people and AI as interchangeable, future study should look into whether complimentary human-AI talents result in stronger SCA.

Researchers could also investigate the moderating roles of:

- organizational culture;
- top management support;
- digital maturity;
- environmental dynamism;
- institutional pressure;
- ethical AI governance;
- data quality; and
- industry competition.

Finally, future studies could examine whether AI capability contributes differently to cost-based, differentiation-based and sustainability-based competitive advantage.

9. Conclusion

Artificial intelligence is changing the ways in which businesses compete, yet AI adoption alone cannot guaranty a sustained competitive advantage. The information gathered from the Emerald studies shows that competitive advantage develops from the interaction of technology, innovation, knowledge management, organizational agility, human capital, leadership, sustainability practices, and institutional pressures. According to the studies analyzed, technology adoption can provide economic value and competitive advantage; however, crucial mediating processes such as innovation, agility, and organizational competency influence whether such advantages are achieved.

As a result, this study provides an integrated framework in which AI capability and other strategic resources increase dynamic capabilities, innovation capability, organizational agility, business model innovation, and sustainability capability, thereby contributing to SCA. SCA is anticipated to generate long-term performance, company value, resilience, and competitiveness.

The central argument of this conceptual paper is that AI is unlikely to provide a sustainable competitive advantage on its own; rather, the sustainable advantage is found in the organization's ability to strategically combine AI with human capital, knowledge, innovation, sustainability, and dynamic resource coordination. This perspective provides a theoretically grounded basis for future empirical research and offers managers a capability-oriented approach to AI-driven competition.

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