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Algorithmic Agency and the Posthuman Economy: Artificial Intelligence and the Transformation of Economic Decision-Making

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Abstract

Artificial intelligence is fundamentally reshaping contemporary economic systems as algorithmic infrastructures increasingly participate in interpreting information, generating predictions, and influencing organizational decision-making. While much of the business and management literature approaches artificial intelligence primarily as a technological capability that enhances efficiency and productivity, emerging posthumanist scholarship suggests a deeper transformation in which economic agency itself becomes distributed across human and algorithmic actors. This article develops the concept of algorithmic agency to explain how artificial intelligence participates in economic decision-making within modern business systems. Drawing on posthumanist theory, socio-technical research, and digital economy scholarship, the study argues that contemporary organizations operate within hybrid intelligence environments where human expertise and algorithmic systems collaboratively produce economic knowledge, prediction, and action. By conceptualizing the emergence of a posthuman economy, this study contributes to interdisciplinary debates on artificial intelligence, digital capitalism, and the transformation of economic organization.

Keywords: *Posthumanism, Algorithmic Agency, Artificial Intelligence, Digital Economy, Hybrid Intelligence, Socio-Technical Systems*

Introduction

Economic decision-making is no longer exclusively human. Across contemporary business systems, artificial intelligence increasingly participates in interpreting complex data environments, generating predictive insights, and guiding organizational strategies. Organizations across industries rely on algorithmic infrastructures to analyze market signals, forecast consumer behavior, optimize supply chains, and support strategic planning (Mikalef et al., 2023; Verhoef et al., 2021).

Traditional economic and management theories assume that organizations operate as human-centered decision systems in which managers interpret information and determine strategic actions (Barney, 1991). Technologies within this framework are primarily considered tools supporting human decision-makers. However, the rapid expansion of machine learning and predictive analytics challenges this assumption. Algorithms increasingly generate predictions, evaluate risks, and influence strategic decisions.

These developments raise fundamental questions regarding the nature of economic agency. When algorithmic systems participate in organizational decision processes, economic outcomes emerge from interactions between human actors, computational infrastructures, and digital data

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environments.
Posthumanist scholarship provides a theoretical framework for understanding these transformations. Rather than viewing technology as external to human action, posthumanism emphasizes relational networks in which humans, technologies, and environments interact to produce social realities (Braidotti, 2013; Ferrando, 2023).
This article develops the concept of **algorithmic agency** to explain how artificial intelligence participates in economic decision-making within contemporary organizations.

Posthumanism and Distributed Agency

Posthumanism challenges anthropocentric perspectives that position humans as the sole agents of social and organizational action. Instead, posthumanist theory emphasizes relational ontologies in which humans, technologies, and environments interact within socio-technical assemblages (Braidotti, 2013).
Hayles (2017) further argues that cognition increasingly extends beyond the human mind into computational infrastructures, creating forms of distributed cognition that reshape knowledge production.
Within organizational contexts, these developments suggest that decision-making processes increasingly involve interactions between human actors and algorithmic systems.

Artificial Intelligence and Algorithmic Agency

Artificial intelligence systems perform tasks traditionally associated with human reasoning, including pattern recognition, prediction, and decision support.
Machine learning algorithms analyze large datasets to identify patterns that guide economic strategies across industries (Mikalef et al., 2023). Algorithmic trading systems, recommendation algorithms, and predictive supply chain analytics illustrate how computational systems increasingly shape economic coordination.
Algorithmic agency refers to the capacity of computational systems to influence economic outcomes through data analysis and predictive modeling.

Hybrid Intelligence and Organizational Transformation

The integration of artificial intelligence into business systems produces hybrid intelligence environments where human expertise and algorithmic systems interact.
Humans contribute contextual interpretation and strategic reasoning, while algorithms contribute computational speed and pattern recognition (Leonardi, 2022).
Hybrid intelligence transforms organizational structures by distributing decision-making authority across networks of human and computational actors.

Algorithmic Governance in the Digital Economy

Algorithmic infrastructures increasingly shape governance within economic systems.
Examples include credit scoring algorithms, automated pricing systems, and predictive maintenance technologies (Cecez-Kecmanovic, 2025).
These systems reshape how organizations interpret economic information and coordinate

strategic actions.

CONCEPTUAL FRAMEWORK

The conceptual framework proposed in this study suggests that algorithmic agency emerges from interactions between digital data infrastructures, algorithmic systems, and human expertise.
These interactions produce hybrid intelligence and reshape organizational coordination in posthuman economic systems.

Contribution to Posthumanism and Economic Research

This article contributes to posthumanist scholarship by extending discussions of human–technology relations into the domain of economic organization.
First, it conceptualizes algorithmic agency as a mechanism explaining how artificial intelligence participates in economic decision-making.
Second, it highlights the emergence of hybrid intelligence systems in organizations.
Third, it introduces the concept of a posthuman economy.

DISCUSSION

Understanding artificial intelligence as algorithmic agency provides new insights into contemporary economic transformation.
Organizations that integrate human expertise with algorithmic systems may achieve greater adaptability within complex economic environments.

CONCLUSION

Artificial intelligence is transforming economic decision-making by introducing algorithmic agency into organizational systems.
From a posthuman perspective, contemporary organizations should be understood as hybrid socio-technical systems in which humans and algorithmic systems collaboratively shape economic outcomes.

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