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AI-based sensing: Research synthesis, framework, and future agenda

MAURO ESTEFANO KOWALSKI
FACULDADE DE ECONOMIA, ADMINISTRAÇÃO E CONTABILIDADE DA UNIVERSIDADE DE SÃO PAULO - FEA

LEONARDO AUGUSTO DE VASCONCELOS GOMES
FACULDADE DE ECONOMIA, ADMINISTRAÇÃO E CONTABILIDADE DA UNIVERSIDADE DE SÃO PAULO - FEA

ROBERTO CARLOS BERNARDES
CENTRO UNIVERSITÁRIO DA FUNDAÇÃO EDUCACIONAL INACIANA PE SABÓIA DE MEDEIROS (FEI)

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Introdução

Digital transformation, driven by technologies such as artificial intelligence, is reshaping companies' strategies to enhance competitiveness and detect market opportunities. A key outcome is the widespread availability of digital artifacts, which AI can leverage to identify early signs of technological and market changes. However, the literature on using AI for sensing evolving environments has been fragmented, with research lacking an integrative framework for AI-based sensing to guide both research and practice. This study aims to address this gap through a systematic literature review

Problema de Pesquisa e Objetivo

To address the research question, "How are companies using AI for sensing?" we conducted a systematic literature review, analyzing and synthesizing 42 articles. This process provided conceptual clarity and led to the development of a framework from existing research on AI-based sensing, elucidating the relationships between dynamic capabilities, sensing, and AI.

Fundamentação Teórica

Scholars have examined how firms adapt to environmental challenges by focusing on dynamic capabilities, such as sensing. Sensing involves understanding the environment to identify opportunities and threats, guiding strategic efforts in seizing and reconfiguring. While previous literature has explored using AI to sense opportunities and threats, it has progressed in a fragmented manner. The literature lacks an integrative framework for AI sensing that synthesizes existing studies, potentially leading to new insights and research directions.

Discussão

We found that data and AI are crucial for sensing, enabling firms to formulate strategies that seize and reconfigure resources for sustained competitive advantage. Companies use AI to analyze behavior patterns in digital artifacts, identifying early signs of technological and market changes. Our findings show AI-based sensing includes three practices: for technological trends, customer behavior, and competitor analysis. We dissect these practices and their corresponding triggers, enablers, effects, and barriers, synthesizing the literature into an integrative framework

Conclusão

AI-based sensing is a structured approach to comprehensively understanding the environment using AI to provide insights that help create or maintain a competitive advantage. AI-based sensing can require organizations to create dedicated roles and establish new routines. These roles and routines are essential for handling activities such as data collection, curation, AI algorithm development, model training, result analysis, and the formulation of business strategies.

Referências Bibliográficas

Akter et al 2023 Advancing algorithmic bias management capabilities in AI-driven marketing analytics research Industrial Marketing Management Helfat et al 2023 Renewing the resource-based view: New contexts, new concepts, and new methods Strategic Management Journal Teece 2007 Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance Strategic management journal Warner & Wäger 2019 Building dynamic capabilities for digital transformation Long range planning Yulong et al 2024 How AI Impacts Companies Dynamic Capabilities Research-Technology Manage

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