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Examining the Spectrum of Artificial Intelligence Failures:
A Focus on Users' Point of View

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ABSTRACT

Artificial Intelligence AI is increasingly becoming a foundation of competitive planning for contemporary organizations. However, even though the implementation of AI in organizations is a critical intervention that can unlock new forms of value, many of these implementations do not meet the expected outcomes. They may result in substantial financial, operational, and reputational negative consequences. This systematic literature review starts with a sample of 3104 articles from well-reputed journals published between 2010-2024. It aims to examine several questions that surround the occurrence of AI failure in organizations: the reasons behind those failures, the categories of the failures, and the disciplinary areas of the failures. Moreover, customers', employees', and management's points of view are considered in the review to extrapolate the potential consequences of the failure of AI systems. The result demonstrates that the AI breakdown often results from a mixture of technology, organization, and people problems and that different industries exhibit diverce types of failures.

KEYWORDS

Human and AI Interaction, Artificial Intelligence, Robots and Automation, Al Failure, Customer Behaviour, Systematic Literature Review, Chatbots

BACKGROUND

Artificial intelligence (AI) utilization in organizational improvement has impacted industries in a positive way by improving efficiency, decision-making, and competitiveness. The applications of AI technology can span from basic repetitive task automation to high-end data analysis solutions and can provide significant value to organizations (Weber et al., 2023). Nonetheless, a rather large share of AI projects does not produce the expected outcome, and sometimes even leads to severe financial losses for the company (Jöhnk et al., 2021). Organizations bear high costs when AI systems fail, including great financial losses and a reduction in corporate image (Moore & Starr, 2006). The monetary costs associated with AI technology implementation in organizations is generally estimated to range from $10,000 to more than $500,000 without considering other costs such as those of labor,

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training, and maintenance (Berkmanas, 2024). While users may accept human mistakes or simply look the other way, similar mistakes from an AI system are not easily excused (Castelo et al., 2023). Several studies have established that though customers seem to be more forgiving of human errors, they easily demand high standards from AI systems and cannot accept failure from such technologies. Such high expectations can increase the consequences of any failure, so it is vital for organizations to work through possible failure points and analyze them in depth. These failures are not simply due to technical problems, which are random and do not have any link with AI adoption; rather, they sometimes reveal more deeply rooted problems in organizations (de Sá Siqueira et al., 2024). AI systems need to handle service failure and service recovery properly to satisfy users. Possible errors and mistakes in AI service leave users dissatisfied and ultimately may cause them to abandon the service (Lv et al., 2022). AI systems must incorporate a mechanism for service recovery to sort out issues that may periodically arise and affect the total user satisfaction level (Leichtmann et al., 2023).

Research reveals that prior work on AI tools including chatbots indicates that it is not just the usefulness of these tools but how they are utilized that determines their importance. A research investigation looking into the level of interaction with chatbots revealed that the amount of time spent on a search engine and on chatbots tended to raise the level of ineffectiveness of the 'e-consumer.' This means that where users have tremendous difficulties in completing tasks, they may spend long hours with such tools—a scenario that does not merely show inefficiency but also raises questions regarding challenges inherent to AI integration (Ben Mimoun et al., 2017).

It is important to know the causes of AI failures, as the poor performance of AI initiatives can result in significant negative impacts such as financial losses, reputation damage, and loss of confidence from customers, employees, and shareholders (Dwivedi et al., 2021). The reasons behind failures of using AI are often associated with specific technical root causes like flawed algorithms and insufficient data quality, or with organizational and user-related failures like inadequate managerial backing or reluctance to change. According to Ben Mimoun et al. (2012) and more recently Crolic et al. (2022), appearance inadequacy, expectation exaggeration, and lack of intelligence are some of the factors that explain why AI chatbots could fail. They reveal that these problems cause a wide discrepancy between what users expect and what they get in terms of performance with regard to end-user satisfaction and effectiveness. Ben Mimoun et al. (2017) showed that the benefits of using AI in perceived interactions and productivity increase depends on individual characteristics. From this, it can be inferred that there might be a need for appropriate implementations of AI to match corresponding user profiles for optimal performance and perceived utility.

In the case of chatbots, Ben Mimoun et al. (2012) and Crolic et al. (2022) indicate that many failures originate from the difference between estimated and actual AI technologies' performance. Highly anthropomorphized AI technologies will create high expectations that will leave the consumers disappointed. Moreover, challenges such as not listening to user needs and poor interaction processes make AI agents fail to satisfy users' needs. Embedding empathic responses into intelligent systems positively impacts the handling of service failure cases and the overall diminished effect on customer satisfaction (Lv et al., 2022).

However regardless of the importance of the question of AI technologies' failure in organizations and the different risks and cost associated with this type of failure, only a few studies have investigated this problem. To help cover the research gaps in the existing literature and provide a structured analysis of the (scarce) current literature on the topic, this paper proposes a systematic literature review (SLR) guided by three main research questions (RQ):

- **RQ1**: What are the primary reasons for AI failures within organizations?
- **RQ2**: What are the most common types of AI failures in organizational settings, and how do these failures impact different stakeholders, including customers, employees, and management?
- **RQ3**: Which sectors or industries experience the highest frequency of AI failures?