The Case of Physicians and Artificial Intelligence

Challenging the Routine Practices' Effectiveness in Enhancing Physicians' AI Adoption

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Rapid advancements in artificial intelligence (AI) technologies have had far-reaching implications across multiple sectors of the economy, enhancing predictive and categorization capabilities in areas ranging from human resources to investment banking. The potential economic impact of AI on organizational performance cannot be overstated, providing opportunities for efficiency gains, cost reductions, and the creation of novel value streams. Yet, despite this vast potential, the healthcare sector has experienced a lag in AI adoption that seems disproportionate to the purely technical constraints of AI systems.

The deployment of AI decision-making tools in healthcare presents a complex economic puzzle, revealing a discord between the potential organizational and economic benefits, and end user's acceptance of these tools. AI systems designed for particular user groups may inadvertently generate positive externalities for other stakeholders within the healthcare organization, leading to increased resistance from users who feel their interests are being overlooked.

Several strategies have been proposed to overcome this economic friction; among them is fostering a collaborative approach to AI development involving key healthcare professionals. However, these traditional economic approaches may not yield the desired outcomes due to the complex nature of AI applications and the users' perceptions. This hypothesis was tested in a pilot study I conducted, exploring whether increasing familiarity with AI influences its acceptance rate. Contrary to expectations, based on technology diffusion models from economics literature, the study found that increased familiarity with AI decreased its acceptance among medical graduate researchers. A potential economic interpretation of these results could suggest that the hyped expectations around AI may be disrupted through familiarization, negatively impacting its adoption rate.

To delve deeper into these initial findings, I aim to conduct an extensive study to examine the economic factors and considerations that influence AI adoption in healthcare. This research will involve a qualitative assessment, exploring a range of data sources, including social media discussions, press releases, professional community publications, and scholarly opinions on AI from healthcare professionals. A rigorous analysis will allow us to identify recurrent economic themes and sentiments influencing physicians' decisions to accept or resist AI.

The insights obtained from the qualitative stage will inform the development of economic theories and hypotheses that may have been overlooked in the current literature. These hypotheses will be further tested through rigorous lab experiments and the analysis of administrative data, providing a rich, multi-method investigation into the economic dynamics of AI adoption. Ultimately, this research aims to test the claims in a field experiment to advance our understanding of the economic underlying of AI adoption in healthcare, contributing valuable insights to the emerging field of the economics of artificial intelligence.

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