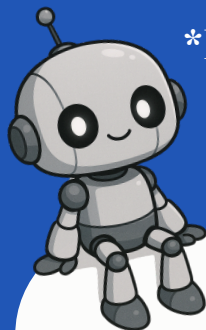# Generative AI in Finance: A Framework for the Trade-Off Between Automation and Human Expertise

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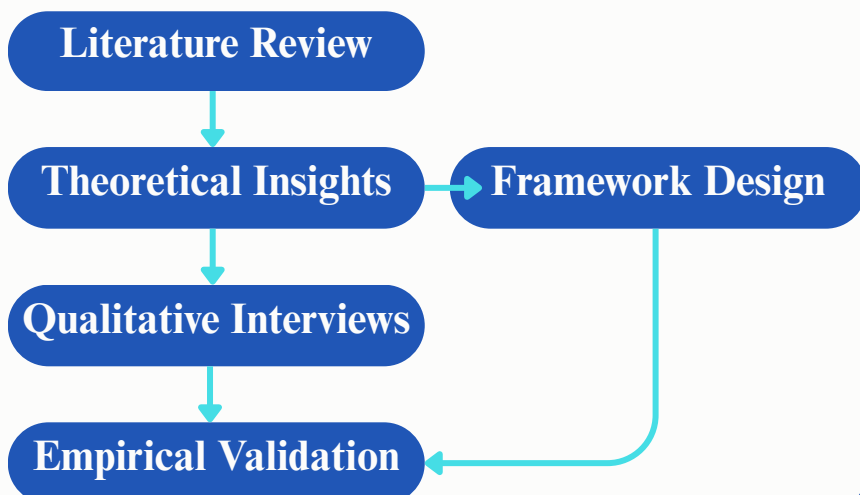
Research Questions

1. What factors determine the optimal balance between AI and human oversight in financial processes?
2. In which contexts does automation outperform human intervention and vice versa?
3. How does the integration of generative AI affect financial performance and compliance?

Introduction

The financial industry is experiencing a profound transformation driven by the rapid adoption of generative Artificial Intelligence (AI). While automation promises improved efficiency, scalability, and cost savings, human oversight remains crucial in areas such as strategic decision-making, regulatory compliance, and trust-building with clients. This study propose a new theoretical framework that integrates Trade-Off Theory and Contingency Theory to guide financial institutions in designing context-sensitive AI-human configurations. The goal is to move beyond polarized debates "full automation vs. full human control" and provide structured guidance for hybrid and adaptive models.
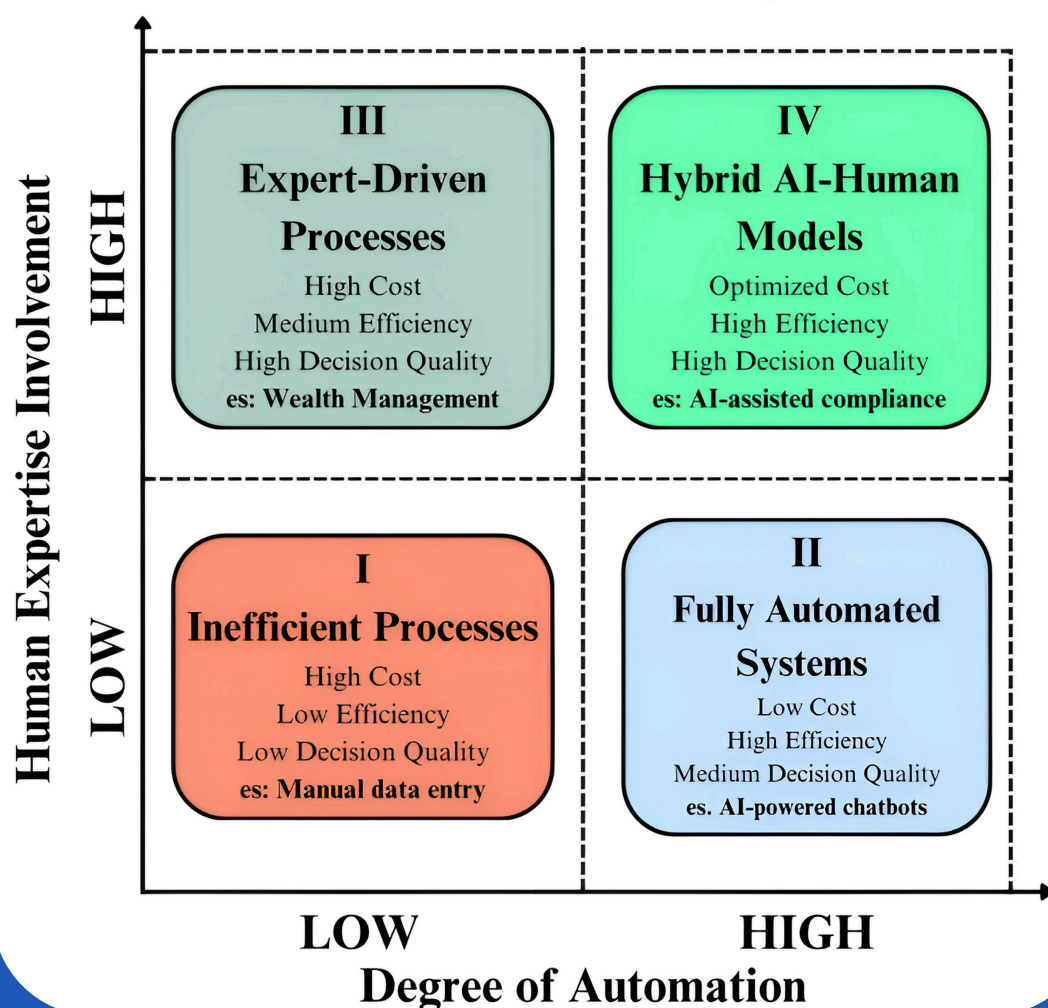
Research Design

Literature Review → Theoretical Insights → Framework Design
Theoretical Insights → Qualitative Interviews → Empirical Validation
Framework Design → Empirical Validation

AI-Human Balance Framework for Financial Decision-Making

Human Expertise Involvement

HIGH:
- **III — Expert-Driven Processes**
  High Cost
  Medium Efficiency
  High Decision Quality
  es: Wealth Management
- **IV — Hybrid AI-Human Models**
  Optimized Cost
  High Efficiency
  High Decision Quality
  es: AI-assisted compliance

LOW:
- **I — Inefficient Processes**
  High Cost
  Low Efficiency
  Low Decision Quality
  es: Manual data entry
- **II — Fully Automated Systems**
  Low Cost
  High Efficiency
  Medium Decision Quality
  es. AI-powered chatbots

Degree of Automation (LOW — HIGH)

Key Findings from Interviews

- Most professionals agree that full automation is effective for repetitive, rule-based tasks such as fraud detection or transaction monitoring
- Human oversight is perceived as essential in tasks involving ethical judgment, client interaction, or regulatory interpretation.
- The majority of respondents favor a hybrid model, where AI performs data-intensive functions and humans intervene in complex or high-stakes decisions.

Conclusions

This study develops a typological framework that classifies financial applications of AI across two dimensions:
Level of automation and Degree of human involvement.
The result is a four-quadrant model that helps decision-makers identify the most effective AI-human configuration for different financial tasks.