

AI Usage and Financial Performance

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Analysis of AI usage and acceptance across industries in the USA between 2023 and 2025 and its influence on the financial performance.

Background and Aim

The integration and perception of Artificial Intelligence in recent years varies across industries. Some sectors such as finance or logistics appear to embrace AI as a driver of efficiency and innovation. Other sectors however, particularly within creative industries, seem to view AI with more skepticism or resistance due to concerns over job displacement and ethical implications, such as copyright law protection. This project aims to analyse whether the adoption and acceptance of AI across different industries actually correlate with measurable differences in financial performance - profitability, growth, efficiency by analysing AI-related survey data from the US Census Bureau and financial indicators of S&P500 companies.

Research question: Does AI usage correlate with financial performance across industries?

Data collecting and processing

Data wrangling included cleaning data types, handling null values, and creating a common Sector column in order to join the datasets. A key step involved calculating a two-year average for AI usage and acceptance rates.

Methodology

In order to answer the research question, main methods of analysis used in this study included descriptive statistics, data visualization as well as correlation analysis, creating a linear regression model and PCA.

Results

References

- [1] OECD, The Adoption of Artificial Intelligence in Firms

Code

- [1] DOI or URL for code repository/notebook

Data

- [1] BTOS Survey Data
- [2] SP 500 FactSet