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The Use of Artificial Intelligence in Financial Analysis: A Comprehensive Study

Dr. Surayya Jamal
Abdul Wali Khan University, Mardan, 23200, Pakistan**,**

Corresponding Author: Dr. Surayya Jamal surayyajml@gmail.com

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ABSTRACT

This paper analyzes to what extent AI technologies have impacted financial analysis through enhancing prediction, risk, and value assessment, and improving decision-making. The research builds a conceptual model to explain the relationship among AI capabilities, financial analysis performance, and business value based on some empirical and theoretical literature. The education measurable method and inferior data observing effect of AI accuracy of financial forecasting and the effectiveness in detecting risk. The results show that, compared to previous approaches, AI improves decision-making and other analytical processes. Finally, the paper identifies the likely impact of the study on practitioners and outlines areas for further study.

Keywords: artificial intelligence, financial analysis, machine learning, predictive analytics, risk assessment

INTRODUCTION

Tools like mechanism knowledge, ordinary philological handing out, and neuronal networks have shown great potential in the automation of tasks in financial analysis, which is the field of predicting future financial results, spotting irregularities, valuing firms and investing, and providing support for making investment decisions (Brynjolfsson & McAfee, 2017).. The usual analytical practices in these types of analyses are heavily reliant on the design of the statistical models, which have preset parameters, and therefore lack flexibility in their predictive capability in constantly changing environments (Guo, Li, & Sun, 2020).

AI in overall is observed as a possible foundation of improvement in the general excellence of examines as well as discount of the unfairness principals to poor economic decisions (Davenport & Ronanki, 2018). The existing study aimed at cumulative of knowledge concerning the effect on economic investigation and the subsequent on systematic presentation.

LITERATURE REVIEW

Predictive Modeling and Forecasting

The field of finance predictive modeling stands out as one of the most notable contributions of AI. AI algorithms analyze historical data of various financial and non-financial markets to generate accurate predictions of future events. In comparison to traditional models ,these models result higher forecasting accuracy than the classical models such as ARIMA models (Feng et al., 2018; Sirignano, Sadhwani, & Giesecke, 2016).

Risk Assessment

AI transforms risk assessment through the detection of risk factors and hard-to-spot risk elements. AU systems like neural networks and ensemble learning methods critically analyze data sets for patterns indicating default risk, fraud, or other forms of market stress which other models may not highlight (Sun, 2011; Zheng et al., 2020).

Asset Valuation and Trading

The other area of machine learning and algorithm based systems include empirical asset valuation and algorithmic trading. AI systems based on unstructured data (news sentiment, social media) improve trading strategies (Krauss, Do, & Huck, 2017).

CONCEPTUAL AND THEORETICAL FRAMEWORK

Theoretical Foundations

This study uses an intersection of three varying perspectives.

Diffusion of Innovation (DOI) Theory. The theory provides an explanation of the impact's organizational practices (Rogers, 2003).

Resource-Based View (RBV) explains how an organization, through the possession of unique technologies, creates a differential competitive advantage (Barney, 1991).

Decision Theory explains the extent to which the quality of information improves the accuracy of decisions (Clemen & Reilly, 2013).

Conceptual Framework

The model attempts to establish the following relationships:

AI Capabilities (predictive accuracy, data processing speed, pattern recognition).

Financial Analytical Performance (forecast accuracy, risk detection, valuation precision) which translates.

Organizational Value (better investment decisions, enhanced risk management, competitive advantage).

Financial Analytical Performance, in the model, operates as a mediator of the effect of AI Capabilities on Organizational Value.

RESEARCH METHODOLOGY

Research Design

The study includes a measurable model, retaining secondary data concentrated from printed observed revisions, datasets on moneys, and contrasts of presentation for AI representations against conservative investigative organizations.

Data Sources

For this observation data is obtained from inferior sources, counting peer studied journals ,also financial presentation.

Variables and Measurement

AI Competences: easy as typical accuracy, flexibility.

Fiscal Reasonable Presentation: measured over charges of prediction faults.

Legislative Cost: predictable through stated advances.

Data Analysis

Data Screening

The assessment of data included completeness, validity, and relevance to the study. Only the research studies that included direct comparisons of the results of AI modeling with the traditional benchmarks were included.

Descriptive Statistics

The summaries indicate that the AI models had a lesser magnitude of forecasting errors relative to the traditional models. In predicting stock prices, the LSTM and deep neural networks had a lower root mean square error (RMSE) than the ARIMA models (Feng et al., 2018).

Comparative Performance Analysis

From a selected study comparison:

Forecasting: AI models had 30% less error when compared to traditional econometric models (Sirignano et al., 2016).

Risk Detection: On the event of default, ensemble learning models had better classification accuracy compared to logistic regression models (Zheng et al., 2020).

Valuation and Trading Signals: AI models that combined text sentiment analysis with news data were more successful in identifying patterns and predicting prices (Krauss et al., 2017).

Correlation Interpretation

AI capability (i.e., score predilection model accuracy) and financial impact (i.e., detected risk) were positively correlated in all instances. This alludes to the fact, the more powerful the AI, the better the analysis.

DISCUSSION

The results consistently demonstrate that AI assistance in financial analysis is the most superior compared to all other means available. The ability of AI in streamlining complex data and identifying patterns means that the benchmark in prediction, risk assessment, and valuation is set remarkably high (Feng et al., 2018; Ngai et al., 2011). The results, in relation to the Resource-Based View, suggest that AI resources underline value In command to full the attach profits of artificial intelligence companies must build their resources in acquiring the necessary competencies and improving their information systems. However, concerns such as model transparency and algorithmic bias remain.

CONCLUSION

The present demonstrations us in what way greatly AI has enhanced the procedure of examining data in business. Some of the main enhancements remain in the correctness of predictions, the excellence of valuation of the dangers complicated, and in conclusion manufacture funding. Even however there are tasks to accepting AI, the assistances it transports in in mixing it in monetary investigation procedures is of massive planned position.

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