

**DYNAMIC QUALITY MIUNS JUNK (QMJ) FACTOR ANALYSIS
USING MACHINE LEARNING: EVIDENCE FROM INDIAN
MARKET**

VISHARAD I

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Chennai - 600025**

ABSTRACT

This study explores the impact of the Quality Minus Junk (QMJ) factor on stock prices and returns in the Indian equity market, focusing exclusively on non-financial firms. The research aims to understand whether firm quality, measured through a composite quality score, can explain variations in valuation and future returns. A composite quality score is developed using machine learning models that integrate key indicators of profitability, safety, and growth. Unlike traditional percentile-based classification methods, the study employs K-Means clustering to categorize firms annually into quality groups. The analysis includes the QMJ factor along with established Fama-French three factors to evaluate its explanatory power. Regression results show a strong positive relationship between quality scores and the price-to-book (P/B) ratio, indicating that high-quality firms tend to receive valuation premiums. The QMJ factor also demonstrates a significant positive effect on stock returns, highlighting the relevance of firm quality in predicting market performance. Through the application of machine learning and a focus on the Indian market, this study offers fresh insights into the role of firm quality in equity valuation and return forecasting.

Key Words: QMJ, Fama French, Decision Tree, Random Forest, XG Boost, MLP, Bayesian Hierarchical, K-Means