

# **Analysing Whether Underperforming Managers Use a Positive Tone in the Management Discussion and Analysis Section**

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## **Abstract**

Does the management adjust its tone in the Management Discussion and Analysis (MD&A) section in response to performance? This study aims to determine whether there are differences in the tone of the MD&A sections of Japanese listed companies' annual securities reports from 2020 to 2023 between groups of companies reporting operating losses and those reporting operating profits. To proceed with this study, the sample sizes of the operating profit and loss companies must be aligned. Therefore, propensity score matching was used to adjust for bias and enable a fair comparison. The propensity score, estimated using logistic regression, refers to the probability that the treatment variable is an operating loss company. We set financial performance as the objective variable, and size, book-to-market assets, average sales growth in the last three years, capital expenditures to total assets, ROA volatility, year dummy, and industry dummy as covariates in the logistic regression model. Subsequently, based on the estimated propensity score, companies with propensity scores similar to those of the control group (operating profit companies) are matched with the treatment group (operating loss companies) to form pairs. The difference between the means of the treatment and control groups after matching ( $N = 536$ ) was tested for statistical significance using a t-test. The t-test results present no statistically significant difference between the tone of positivity in the MD&A section of operating loss and profit companies ( $p = 0.53$ ). This suggests that managers of firms with operating losses may manipulate their impressions to artificially improve their performance.

## **Keywords**

MD&A, Tone, propensity score matching, impression management, text mining

## **Biographies**

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**Ayuko Komura** is an assistant professor at the Department of Industrial Engineering and Management at Kanagawa University, Japan. Her research topics include operating profit stability and management controls. She earned her PhD in Business Administration at Meiji University. She received a fellowship from the Japan Society for the Promotion of Science between 2017 and 2019.

**Hirohisa Hirai** is a professor at the Department of Industrial Engineering and Management at Kanagawa University, Japan. He earned his PhD in Engineering at Osaka University. His research is an empirical study of management accounting, firm analysis, and applied statistics, particularly firm valuations. He has received awards from several academic societies in accounting and management.