6th World Conference on
Arts, Humanities, Social Sciences and Education
October 24-25, 2024 | Amsterdam, Netherlands
https://doi.org/10.62422/978-81-970328-4-4-008

Data-Driven Innovation and Knowledge Management

Eyal Eckhaus
Division of Management and Human Resources. Academic College of Israel in Ramat Gan, Israel

Background: This study presents a unique solution that illustrates how effective knowledge management and analysis can yield innovative insights, such as predicting a company's stock price. Specifically, the study explores the predictive power of combining sentiment analysis with latent profile analysis (LPA) for stock price forecasting, using a case study on Teva Pharmaceutical Industries. It examines how these techniques can contribute to the development of sustainable innovation strategies within organizations.

Methodology: a corpus of articles from two major sources was compiled. Automated content analysis, including sentiment analysis, was employed to assess the valence of each article. Latent Profile Analysis (LPA) was conducted using R, followed by Structural Equation Modeling (SEM) using AMOS to finalize the model.

Findings: The study found that six out of eight independent profile segments demonstrated a higher coefficient of determination (R^2) in predicting stock prices compared to unsegmented sentiment analysis. The regression model that incorporated segmented profiles exhibited significantly higher predictive power, validating the effectiveness of the proposed knowledge management and data analysis techniques.

Innovation: This research introduces a novel approach by integrating sentiment analysis and LPA within the framework of knowledge management, significantly enhancing the predictive accuracy of stock prices. The study underscores the potential of these techniques to support sustainable innovation strategies within organizations, offering a unique contribution to the field.

Biography:

Dr. Eyal Eckhaus, a senior lecturer at The Israel Academic College in Ramat Gan, is an experienced data scientist who has developed advanced software tools for content analysis, sentiment analysis, and latent theme extraction. His research integrates these tools and AI applications across various domains, including management, education, happiness studies, and disability research, to extract innovative insights. By employing data mining techniques, Dr. Eckhaus advances evidence-based practices, significantly contributing to the understanding and addressing of challenges within these fields through an interdisciplinary approach that combines data science with social sciences.