Abstract

Application of Time Series Analyses in Business Sustainability: Correlation, Association, Causation

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Abstract:

The application of and time series analyses in business is growing and will continue to be relevant in the aftermath of the global COVID-19 pandemic This. Using time series models and analyses, millions of transactions, unstructured and semi-structured data can be searched to spot patterns and detect abnormalities and irregularities. The emergence of Big Data and data science creates an opportunity to further investigate the application of time series models in business using financial information and non-financial sustainability information of environmental, social, and governance performance. The ever-increasing business complexity, challenges brought on by the global COVID-19 pandemic, along with the growing demand for high-quality financial and non-financial information, require the use of time series analyses to improve the financial reporting process. Much of information is now available social media, e-mail, audio, video, and text files and the time series analyses can be used to examine such information.

The primary purposes of this presentation are to:

Discuss the relevance and use of time series analyses for Big Data and data science. Present how time series models can be efficiently and effectively applied in business analytics Explore the application of time series analyses in business research by discussing the differences among correlation, association, and Granger causality and providing insight into their proper use in the sustainability literature. Discuss policy, practical, educational, and research implications of time series analyses. Present the use of time series analyses by businesses and management in their predictive models of managerial strategies, decisions, and actions.

Discuss, integration of time series analyses into the curricula of business schools and accounting programs. Present the use of time series models to transform unstructured and semi-structured data into structured information in improving the quality of financial and non-financial information. Discuss application of time series analyses in advancing business sustainability by presenting an example of the integrated Big Data and time series analyses into environmental, social and governance dimensions of business sustainability. Offer practical examples for correlation, association, causation, and the Granger causality and discuss their main differences and show how the use of a linear regression is inappropriate when the true relationship is non-linear.

Biography:

Nick Rezaee is currently a software engineer at Citi Group. He holds a B.A. in the Combined Major of Economics and Mathematics from University of California, Santa Cruz. He has conducted research in Business Sustainability since 2015. Nick has done a variety of research ranging from integrating Business Sustainability into the college course curriculum to incorporating better security measures to decrease cyberattacks. He also has two years of experience working in the tech field including positions at a neuroscience lab researching artificial intelligence and working on data science at Citi Group. Nick grew up in Memphis, TN and plans to pursue a PhD in Econometrics in the future focusing on the economic impact of artificial intelligence on the global economy.

Publication of speakers:

1.   Huang, X.B.; Watson, L. Corporate social responsibility research in accounting. J. Account. Lit. 2015, 34, 1–16. [CrossRef]

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