

عنوان مقاله:

Exploring Organizational Social Capital in Dynamic Ego Networks: A Multivariate Analysis Approach

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خلاصه مقاله:

Social capital refers to the features of social organization, including networks, norms, and trust, that facilitate coordination and cooperation for mutual benefit. Organizational social capital plays a crucial role in promoting mutual benefit within organizations. However, the measurement and monitoring of social capital face challenges, necessitating the development of effective tools for quantification. Existing approaches often rely on subjective measures, such as self-reported surveys or qualitative methods, which can introduce biases into the data. To enhance social capital measurement, this paper delves into recent advancements in social network analysis, data analytics, and computational methods. These advancements are investigated to improve the accuracy and effectiveness of measuring social capital. Specifically, this study examines common social network measures including degree centrality, closeness centrality, betweenness centrality, clustering coefficient, network size, network homophily, network reciprocity, and network cohesion to propose a novel approach using a multivariate control chart for monitoring purposes. The proposed control chart, by using Multivariate Exponential Weighted Moving Average (MEWMA) statistics, enables continuous monitoring of social capital dynamics. Empirical experiments using real social network data, the Enron Email dataset, demonstrate the efficiency of the proposed approach. By refining the measurement of social capital, researchers and policymakers can gain deeper insights into organizational complex dynamics and better understand its impact on various outcomes. Moreover, this approach has the potential to inform the design of targeted interventions aimed at fostering the development of social capital within organizations.

کلمات کلیدی:

Organizational social capital, Multivariate Control Chart Analysis, Social Network Centrality Measures, MEWMA

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