

Pioneering the Digital Age: A Comprehensive Investigation of the Effects of Digital Quality Management Systems on Organizational Dynamics

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ABSTRACT

Purpose: The proposed study will investigate the macro and micro-level effects of Quality 4.0 adoption, looking at how an organization will be affected in terms of effectiveness, accountability, transparency, and general quality standards, with a focus on how the implementation of these systems influences green innovations and shape the fabric of contemporary organizations systems.

Design/Methodology/Approach: A corresponding scale for quantitative empirical research is developed to verify the proposed hypotheses, and a questionnaire technique will be used to collect data from top managers of listed manufacturing industries of Pakistan stock exchange (about 355 in numbers). Random sample selection technique will adopt to collect data from target population. The proposed hypotheses will be tested and the research model assessed using the partial least squares structural equation modeling (PLS-SEM) technique. It takes methodical and comprehensive approach to evaluating the inner structural model (the relationships between latent variables) and the outer measurement model (relationships between latent variables and their indicators). Seminar R package of R studio will analyze the obtained data from top management.

Findings/Results: Possible outcomes will highlights the ways in which the implementation of Quality 4.0 entails process optimization, product and service quality enhancement, and the promotion of socially and environmentally responsible practices. The examination will explore the relationship between enhancements in various facets of organizational performance and the implementation of Quality 4.0 practices and technologies.

Practical Implications: This research will provide empirical relationship between quality 4.0 adoption and its mechanisms to leads sustainable performance of an organization. The role that green innovation plays as a mediator between an organization's sustainable performance and its adoption of Q4.0 will be revealed.

Originality/Value: Thus, in order to improve the effectiveness and long-term performance of the entire organization, this study will investigate the effects of implementing Quality 4.0, which entails integrating cutting-edge technologies and data-oriented methodologies. The framework for evaluating and enhancing sustainable practices through technology-driven quality management within an organization will be developed in part by this work.

Keywords: *Quality 4.0, Green Innovation, Industry, Sustainable performance*