Guest editorial: Applications of blockchain technology for performance and reliability of business operations

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Welcome to the latest issue of the *International Journal of Quality and Reliability Management*!

As we present this new volume, we are reminded of the essential role that quality and reliability play in driving progress across a multitude of sectors and industries. The quest for excellence, underscored by stringent standards and inventive practices, remains the cornerstone of research and development. This issue not only reflects our commitment to advancing academic and practical knowledge but also highlights the dynamic nature of this ever-evolving field. This volume features an array of insightful manuscripts that delve into various applications and challenges of blockchain across different sectors across the globe. The papers selected for this issue delve into the innovative applications and implications of these technologies, offering valuable insights for both researchers and practitioners.

Paper 1: Identification and prioritization of the factors influencing blockchain adoption in the banking sector: integrating fuzzy AHP with TOE framework.

This paper identified the organizational factors as the most significant for the adoption of blockchain technology, followed by environmental aspects, with technological criteria being the least influential. However, sub-criteria include clientele pressure, IT resources, financial resources and competitive pressure. Scalability, standardization and complexity present challenges to implementation, while insufficient government regulation hampers progress in the banking sector.

Paper 2: Use and acceptance of crypto currencies in India: an evaluation of blockchain application in financial sector using PLS SEM and ANN approach.

This study examines the factors which influence cryptocurrency adoption in India. The study identifies that social influence significantly impacts behavioral intention to use cryptocurrencies, followed by design, hedonic motivation and security. Notably, performance expectancy and effort expectancy were less significant. The study suggested that enhanced research methods like PLS-SEM and ANN for understanding technology adoption intricacies.

Paper 3: Cryptocurrency price fluctuation and time series analysis through candlestick pattern of Bitcoin and Ethereum using machine learning.

This research explores trading algorithms based on candlestick patterns for predicting cryptocurrency prices. The study has observed that the inverted Harami pattern shows a profit factor of 6.98 and successful predictions for longer trends, outperforming traditional methods. The study emphasized the potential of machine learning in enhancing trading strategies, although it notes limitations in specific patterns like the traditional Harami model.

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Paper 4: Modeling the barriers to blockchain implementation in human resource function.

This paper explores how blockchain technology can help to mitigate online fraud among Generations Y and Z. It identifies the critical factors influencing the blockchain adoption such as perceived usefulness, trust and ease of use, providing valuable insights for fintech firms and e-commerce platforms.

Paper 5: A bibliometric and content analysis discourse on business application of blockchain technology.

The paper analyzed the business applications of blockchain through bibliometric and content analysis. It highlighted the trends in research publications, identified influential articles, authors and journals and emphasized the need for a comprehensive understanding of blockchain's potential across various industries, especially in areas like supply chains and business model innovation.

Paper 6: Analysis of barriers for adopting blockchain in agri-food supply chain management: a decision support framework.

This study investigated the complexities of integrating blockchain technology in agri-food supply chains. It has identified "increased operational complexity" as the top barrier, followed by "lack of interoperability." The findings of the study emphasized the need for organizations to address such barriers to augment resilience and efficiency in supply chain management.

Paper 7: Challenges in adopting blockchain technology in supply chain management: a too far-fetched idea?

This study identified the major barriers to blockchain adoption in supply chains. The study has observed that there are three primary challenge such as privacy challenges, infrastructure challenges and transparency challenges. The top challenges include balancing data openness and secrecy, integrating sustainability practices and ensuring accurate information sharing. The study has emphasized the interconnectedness of these challenges, urging a comprehensive approach for effective blockchain integration in supply chains.

Paper 8: Blockchain for data protection and cyber fraud reduction: systematic literature review and technology adoption dynamics among gen Y and Z.

This paper examined the role of blockchain technology to reduce online fraud among younger generations. The findings have suggested that perceived ease of use, perceived usefulness, trust, efficiency and security positively influence users' attitudes and intentions to adopt blockchain technology for online transactions. It emphasized the importance of fostering a positive perception of blockchain to enhance its adoption among Gen Y and Z.

Paper 9: Blockchain-based deep learning in IoT, healthcare and cryptocurrency price prediction: a comprehensive review.

This study explored the integration of blockchain technology with deep learning across major sectors, highlighting significant trends and applications in IoT, healthcare and cryptocurrency. It identified Ethereum and Hyperledger as prominent frameworks used, emphasizing the benefits like enhanced data privacy, security and decentralization. The findings have shown that present research primarily focused on improving the existing systems and highlighted the opportunities for future developments in terms of scalability, privacy and regulatory standards in these domains.

However, each of the papers selected for this edition offers unique insights into how blockchain and machine learning can be harnessed to enhance transparency, efficiency and accountability in various management practices. As these technologies continue to mature, their integration into management processes will undoubtedly lead to more robust and reliable systems, ultimately benefiting organizations and consumers alike.

We extend our heartfelt gratitude to the authors, reviewers and editorial board members whose unwavering dedication ensures the journal's quality and relevance. Their invaluable contributions uphold the high standards of our publication and drive forward the boundaries of knowledge in quality and reliability management. The depth and rigor of your work are fundamental to delivering research that not only informs but inspires. We hope this issue inspires further research and innovation in the field of blockchain technology. Thank you for your continued support.

We encourage our readers to engage deeply with the content, offer insights and actively participate in the ongoing dialog within this vital field. Your feedback and contributions are essential as we strive to further enhance the quality of our journal and contribute meaningfully to the discipline. We eagerly anticipate the continued exchange of ideas and innovations that will shape the future of quality and reliability management.

Thank you for your continued support and for being an integral part of our academic community.

Warm Regards,
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