Drivers of Practicing Quantity Surveying Profession using Industry 4.0, the Fourth Industrial Revolution

John Arthur and Emmanuel Bamfo-Agyei (Ghana)

Key words: Cost management; Quantity surveying

SUMMARY

This research aims to provide comprehensive insights into the digital transformation of quantity surveying practice, offering evidence-based recommendations for technology adoption, professional development, and industry advancement. The research adopts a quantitative approach, involving a structured questionnaire administered to experts selected through heterogeneous purposive sampling within Cape Coast. A total of 100 members from the Association of Building and Civil Engineering Contractors of Ghana, drawing insights from professionals in architecture, quantity surveying, project management, and contracting. The integration of Industry 4.0 technologies into the quantity surveying profession offers a wide array of transformative benefits. These technologies, including AI, BIM, IoT, cloud computing, and big data analytics, significantly enhance the accuracy and efficiency of cost estimation, budgeting, and project planning. Automation reduces manual errors, while real-time data and digital tools streamline workflow processes and decision-making. Professionals in the field are now better equipped to engage in strategic and value-driven roles, as technology allows them to shift from routine tasks to more analytical and management-focused functions. The study focuses on perceived and observed benefits, primarily from quantitative inputs. There is limited empirical testing, and findings may vary depending on the region, technological infrastructure, and digital maturity of organisations. The findings reveal that the successful adoption of Industry 4.0 technologies in quantity surveying requires proactive and strategic changes in professional practice. Quantity surveyors must embrace digital transformation by integrating advanced tools such as BIM, AI, and cloud platforms into everyday operations to enhance project delivery and cost management. It promotes a more collaborative and inclusive work environment, encouraging stronger interaction among professionals across various disciplines. This shift enhances teamwork and knowledge sharing, resulting in improved project outcomes. This study presents a forward-thinking analysis of how digital transformation, facilitated by Industry 4.0, can improve the role and relevance of quantity

surveyors in the modern construction industry. It adds value by focusing on opportunities for growth, efficiency, and innovation, helping professionals and organisations align with future industry trends.