# Engineering Management Journal

Volume 35, 2023 – Issue 3

**Editorial – Editor’s Introduction**

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In this issue of the journal we are delighted to present eight articles that cover several key areas across engineering management. The discipline of engineering management is a field that is accessible to a broad range of participants across engineering, technology and management domains and from different organizational, industrial and international perspectives. The subject is inclusive of the different viewpoints that can be applied to the field and consequently the journal seeks new contributions to the knowledge base as well as methodological developments and practitioner insights that extend the remit and applicability of the engineering management discipline. The Co-Editors would like to thank all of our reviewers who contributed to the peer-review process for the articles in the issue as well as the Associate Editors, Corns, Sols, Philbin, Salado, Bastian, Tong, Landaeta, and Furterer for their respective contributions to this issue of the journal.

The first article in the issue is by Hyejin Jang, Sujin Park and Byungun Yoon and is called “Exploring Technology Opportunities Based on User Needs: Application of Opinion Mining and SAO Analysis.” This article proposes a new approach aimed toward exploring technology opportunities, which are able to meet customer needs according to a method involving opinion mining and SAO-based patent analysis. The technology analysis is underpinned by a framework based on SAO (subject-action-object) structures obtained from patents and user reviews. The findings of the study will be useful to those seeking a practical approach to support R&D planning and technology development programs in industrial companies and other organizations.

The second article is called “Project Portfolio Reliability: A Bayesian Approach for LeAgile Projects” by Sagar Chhetri, Dongping Du and Susan Mengel. The study utilizes the so called LeAgile approach, which is based on a systematic combination of the agility model and lean improvement. This approach is focused on the goal of developing a practical continuous learning tool, which can be adopted to support decision-making by engineering managers on complex projects and large-scale project portfolios. The study also involves a systems engineering model based on a Bayesian learning approach, which is validated through proof of concept analysis. The study helps improve the understanding of decision-making by engineering managers leading LeAgile type projects according to the computational learning model that is developed.

The third article in the issue is by Natalie M. Scala, Vincent Schiavone, Hylton Olivieri, Olli Seppänen, Thais da C. L. Alves, Min Liu and Ariovaldo Denis Granja and is called “Comparative Analysis of Planning with the Critical Path Method, Last Planner System, and Location-Based Techniques in Brazil, Finland, and the United States.” This article examines various project management tools, including the critical path method (CPM), last planner system (LPS), and location-based methods such as the line of balance (LB) through considering the differences and similarities of the methods according to their adoption in different countries (namely Brazil, Finland and USA). The researchers developed a hypothesis model that is investigated with a survey instrument and corresponding inferential statistical analysis. The study finds that despite the project management tools being widely applied across industry, they are not used consistently across the three countries investigated in the research.

The fourth article, “Perceived Values to Evaluate Smart Product-Service Systems of Smart Kitchen Appliances” by Ying Yu and Tung-Jung Sung, proposes a comprehensive perceived value scale of smart Product-Service Systems (PSS). The scale has five latent variables (usefulness, flexibility, reliability, fee, and technicality), and 19 observed variables, and was validated using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) in the context of smart kitchen appliances. The proposed scale will enable researchers and practitioners to better evaluate user experience (UX) with PSS, in particular the value provided to the user, supporting the design of more effective smart PSS.

In the fifth article, “Research on the Relationship between Flexible Contract Term Setting Method and Setting Effect of Environmental Protection PPP Project,” Lingyi Tang, Xiaer Xiahou, Kang Li, Qiming Li, and Xiaoyang Hu, investigate how to better design flexibility into environmental protection (EP) public-private partnership (PPP) contracts by studying the relationship between three flexible contract term setting methods (preset coping style, reserving space for change, facilitating reaching agreement) and two contract performance effects (dealing with uncertainty, coordinating cooperative relationship). Based on their sample of 116 stakeholders from 12 EP-PPP projects from China, most (four of six) tested relationships were found to be significant; however, the relationships between reserving space for change and coordinating cooperative relationship, and facilitating reaching agreement and dealing with uncertainty were not. Overall, the paper finds that flexible contract setting methods are effective in improving project risk management performance and recommends their increased adoption for EP-PPP projects.

The sixth article, “A novel quality function deployment based integrated framework for improving supply chain sustainability,” by Koppiahraj Karuppiah, Bathrinath Sankaranarayanan, and Syed Mithun Ali, proposes an integrated approach to designing resilient sustainable supply chains (SSC), which incorporates both customer requirements (CR) and technical requirements (TR). The approach, which combines fuzzy Delphi method (FDM), fuzzy analytical hierarchy process (FAHP), fuzzy measuring attractiveness by a categorically based evaluation technique (FMACBETH), and quality function deployment (QFD), is tested using a case study of leather company’s supply chain. This application demonstrates the power of the integrated approach to help stakeholders better understand the interactions between CR and TR, and in particular which TR are most critical to achieving CR.

The penultimate article of this issue “How does Relational Governance Affect Knowledge Collaboration in Integrated Project Delivery? A Transactive Memory System Process” authored by a team from Nanjing Tech University demonstrates the importance and impact of “relational norms and trust” apropos of integrated project delivery.

The issue wraps up with an article by a team from University of Belgrade investigates the evolving development and implementation of quality in Industry 4.0 (Quality 4.0) specifically focusing on the critical role leadership plays. The authors find that as industry becomes more complex, the role leadership plays becomes more important. The article illustrates that engineering management will continue to be crucial as Industry 4.0 evolves.

The Engineering Management Journal (EMJ) invites participation and articles from academic researchers as well as practitioners from industrial, governmental and other organizations. We welcome all types of research methodologies that are applicable to the engineering management discipline. For questions or inquiries on possible articles, please contact the journal’s Editors: Brian Smith (smith@ise.msstate.edu), Jennifer Cross (jennifer.cross@ttu.edu), and Simon Philbin (philbins@lsbu.ac.uk).