Editorial

Introduction to the special issue on conflict management in engineering

In this special issue, we publish seven important research articles that deal with a wide variety of topics related to conflict management in engineering. This innovative research focuses on cross-disciplinary insights related to both business administration and engineering. This research informs both practice and science and helps to facilitate the transfer of knowledge between the two disciplines of business administration and engineering. The insights from these studies will enhance academic programs that prepare engineers and business graduates for their professional careers. Below is a brief summary of the research included in this special issue and some highlights of the important insights that these studies provide.

The study by Barry Goldman and his colleagues, reviewed the research literature to show that engineers often use a different approach than non-engineers when they engage in negotiations. Engineers tend to be more conscientious, goal-driven, competitive and less people-oriented than others. This underscores the importance of training programs designed to help engineers to be better negotiators. Such programs can help engineers to understand both their strengths and weaknesses, including understanding the emotional issues involved in negotiations. This should help them to be more effective at achieving integrative as opposed to distributive outcomes. These and other insights in this study can help to guide the effective design of future research and educational programs in business and engineering.

The study by Jeonghwan Choi examined 43 supervisors of 288 employees working in technology-focused teams at six different automotive parts manufacturing firms. The study showed that when the gap between the supervisors' perceptions of the work environment and those of their workers was greater, there was a negative effect on self-directed behavior. Just providing employees with a highly autonomous work environment is not enough to motive employees to engage in self-directed behavior, unless there is also some other important influence such as positive psychological capital. Practices such as active listening can help to reduce this perceptual gap and hopefully increase the level of positive self-directed behavior.

The study by Vijay Kuriakose and colleagues examined 554 software engineers working in information technology firms. Unlike other studies that focused on outcome conflict, this study found that process conflict had a negative impact on employee well-being. However, this relationship was moderated by intervening variables such as negative affective state, and the use of different conflict styles. The insights from this study can guide future research, and also help organizations to improve their policies and practices to mitigate the negative effects of process conflict on the well-being of engineers. For example, organizational interventions that are designed to reduce negative affective state, e.g. social support at work, can reduce the negative effects of process conflict on employee wellbeing.

The study by Meng Qi and Steven J. Armbstrong focuses on 344 group members working in 83 different departments (e.g. engineering, administration, production and project management) in six manufacturing companies. Unlike other projects, this study focused on deep-level cognitive diversity and analyzed data at the team and mixed-levels. The findings support the conclusion that cognitive style diversity increased group relationship conflict, whereas cognitive style similarity can smooth relationships between team members. This relationship was increased when the team level leader member

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exchange (LMX) was low, but higher LMX reduced the negative effect of cognitive style diversity.

The study by Haiyan Guo, Lianying Zhang and their colleagues focuses on the innovation among 73 cross-functional project teams. The study found that relationship between cognitive and team innovation was moderated by knowledge leadership. There as a significant mediating role of task-related information/knowledge elaboration and affective conflict as well. The implication for other cross-functional project teams is that when there cognitive conflicts, innovation can nevertheless be enhanced by shaping the meaningfulness of knowledge and information activities.

The study by Thaheem and colleagues focuses on the conflicts among construction project stakeholders, and how those conflicts impact project constraints. The authors used a content analysis of existing literature to identify likely project constraints, and they also collected data from 111 civil engineers. Three project constraints that were most likely to be increased by stakeholder conflicts were cost, resources and time. Stakeholder conflicts also had a negative effect on quality, workforce productivity, protection of the environment, and safety. In addition, other factors also had negative impacts on project constraints including lack of communication, poor quality of completed work, and change orders and rework. Moreover, lack of communication was at the core of stakeholder conflicts. The implication of this study is that the use of advanced and digital collaborative communication technologies could significantly improve communication, thereby reducing stakeholder conflicts and improving project success on multiple dimensions.

The study by Shashank Mittal focused on the relationships between having people with high levels of talent on engineering project teams, intragroup conflicts, and the performance of the teams. The study collected data from 1,265 members of 218 engineering and technology project teams in four large organizations. The study found that the more talented the team members were, the more conflicts occurred. Two types of conflict: process and status had a negative effect on team performance. The higher the level of talent of the members of the teams, the more likely these types of conflicts would occur. However, there was a positive effect of power on team performance, such that when there were lower levels of process and status conflicts when the talented team members had higher power. Thus, the negative impact of having high levels of talent on engineering teams, because it increases status and process conflict, can be reduced by giving those high talent engineers more power.

In summary, these studies provide valuable insights that help us to better understand the contextual and process factors that influence conflicts involving engineers at work. It provides important new insights into ways that these conflicts can be better managed. These insights suggest that more training on emotional intelligence, improving leader member exchanges, more workplace social support, improving positive psychological capital, improving the meaningfulness of knowledge information activities and aligning the levels of power and talent on engineering teams will have positive impacts on the performance of engineering related projects. I would like to express my sincere appreciate to Mike Loya endowment for supporting the efforts put together in this special issue of the *International Journal of Conflict Management*.

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