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ABSTRACT
Open source software (OSS) has drawn increasing attention from both practitioners and researchers in recent years. However, few empirical studies have investigated the interaction process of OSS teams during OSS development. This dissertation has two primary objectives. First, the research studies the social structure of OSS teams. Second, the research investigates the factors impacting the social structure of OSS project teams (e.g., group size, group composition and group task) as well as the effects of social structure on OSS performance. Based on the theory of social structure, social network, and group-related theories, the dissertation discusses a general research framework and a planned two-phase study to achieve the research goals. The first phase of the research is to understand the social structure of OSS projects, especially the interaction pattern during the development process. Research hypotheses are proposed at the end of this stage. The second phase aims to test the hypotheses on the causes and effects of social structure on OSS development. Social network analysis, which focuses on investigating the relationships between a set of actors, will be employed as the primary research methodology for this study. Data will be collected from websites such as SourceForge that host OSS projects. By understanding the relationships between group characteristics, social network, and OSS performance, this research contributes to the enhancement of knowledge on OSS development from the social network perspective.