Green SD adoption using knowledge mangement facilitation - a motivational perspective

ABSTRACT

Attention on green computing has been growing in this decade. Green computing is generally a large field of study which is concerning study of related environmental issues on information technology (IT) and computer science relevant systems, datacenters, hardware, networks, processes, software, and architectures. Several existing researcher papers have concentrated on studying motivating factors of green computing adoption. A few of them have discovered tools to facilitate the green computing adoption. However, green computing is still a broad discipline of study. There is a need for empirical research that narrows down this field of study. Thus, this paper empirically and specifically studies on motivating factors that influencing the Green Software Development (Green SD) adoption by using Knowledge Management (KM) as facilitation tool. Green SD is one of the in-depth research topics in the broad discipline of green computing. Drawing from existing literature and using data collected from a quantitative survey of 107 software practitioners, this paper analyzed five hypotheses. PLS-SEM method was used to validate the proposed framework of this research paper, by following standard two-steps approach for PLS-SEM analysis: measurement model analysis and structural model analysis. The result shows that only ethical motivation is the significant motivating factor influences Green SD adoption among software practitioners. This paper proves that intention of software practitioners to develop nature-friendly software products is driven by their environmental concerns, sense of care and responsibility to our natural environment. Outcomes of this paper will help in enhancing researchers' understanding on Green SD adoption and will also be valuable for diverse stakeholders who are interested in encouraging Green SD adoption. SD organizations and top management need to properly utilize their workers' morale and concern on ecological issues for identifying green innovation and green initiatives. Theoretical and practical contributions are discussed in this paper.