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A New Three-Pillar Score System to Reduce the Sustainable Subset Heterogeneity within the GREENSL Rating System in Sri Lanka

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Abstract

Sustainable development is achievable only by integrating and acknowledging three main sustainability pillars (Environment, Social, and Economic) during the decision-making process. Sustainable/Green construction has become a major part of the sustainable development process in Sri Lanka today. Sustainable/Green buildings are evaluated using both international (LEED, BREEAM, CASBEE, Green globes, etc.) and local (GREENSL, Blue-Green Sri Lanka) green building rating systems. Most of these international green building rating systems have unequal credit point distribution among three sustainability subsets which causes heterogeneity among subsets. Thus, this research was designed to evaluate two local green building rating systems (GREENSL Version 2.0, and Blue-Green Sri Lanka for government constructions Version 1.0) to identify this heterogeneity in the local context. The credit point distribution among three sustainability subsets within the two selected rating systems was evaluated by analyzing the categories and criteria of these two rating systems. Here, when criteria represented one or more pillars of sustainability, the credit points belonging to such criteria were equally divided into those two subsets. The results revealed that three subsets were not equally considered in the GREENSL (Environment (52.1%), Social (21.6%), Economic (26.3%)) and Blue-green Sri Lanka for government constructions (Environment (48.4%), Social (17.2%), Economic (34.4%)) rating systems. Thus, there is a sustainable subset heterogeneity that is dominated by environmental sustainability. As achieving the exact 33.3% point distribution among three sustainability pillars is difficult, new point distribution percentages were proposed as 40% for the environment and 30% each for both social and economic sustainability pillars. Finally, a new three-pillar score system was proposed that can be used together with the GREENSL overall score for the buildings to reduce this subset heterogeneity by adopting the proposed point distribution percentages above. This study suggested that the building needs to fulfill both the total category score and the proposed three-pillar score to qualify for the respective GREENSL award (Platinum, Gold, Silver, and Green certified) to reduce the sustainable subset heterogeneity within this rating system.

***Keywords**:* GREENSL for the built environment, Sustainability subsets, Sustainable subset heterogeneity, Three-pillar score system