

Abstract

The placement of speakers in RW 11, Desa Cipamokolan, has been suboptimal, leaving some areas without adequate sound coverage. To improve the sound intensity coverage, speakers need to be installed across RW 11. Given the numerous possible locations for speaker placement, a decision-support tool is required to determine the most appropriate spots. The selected locations must meet the specific criteria of RW 11, Desa Cipamokolan. The Analytic Network Process (ANP) can be used to plan the speaker placement in this area. This method is suitable because it accounts for the interdependence between different criteria in the calculation of priority factors (Uyan & Dogmus, 2023). The objective of this study is to assess the use of the ANP method in planning speaker placement for RW 11, Desa Cipamokolan. The results show that sound modeling simulations using ANP increased sound intensity coverage by 8% within the 50-75 dB range. The ANP-based sound modeling also reduced the area without sound by 8% without affecting the 35-45 dB sound range. However, random placement yielded better coverage by 2% compared to the ANP-based approach. While ANP can improve sound intensity coverage, it is not the most suitable method for RW 11, Desa Cipamokolan. Based on this study, random placement is more effective, achieving better coverage with fewer speakers than the ANP approach.

Keyword: Analytic Network Process, Sound Modelling, speaker