

RINGKASAN

Pengambilan keputusan pada situasi darurat sering melibatkan banyak pemangku kepentingan, berbagai kriteria keputusan, tekanan waktu, serta informasi yang tidak lengkap dan dinamis. Penelitian ini berfokus pada konteks *Emergency Decision-Making* (EDM) yang sekaligus memiliki karakteristik *Large Group Decision-Making* (LGDM) dan *Multi-Criteria Decision-Making* (MCDM), sehingga memerlukan pendekatan *Multi-Criteria Large Group Emergency Decision-Making* (MC-LGEDM). Penelitian bertujuan mengidentifikasi karakteristik dan kebutuhan pengambilan keputusan darurat di Indonesia serta mengembangkan model MC-LGEDM yang mampu mengakomodasi karakteristik tersebut. Model dasar dikembangkan berdasarkan integrasi EDM, LGDM, dan MCDM, kemudian disempurnakan berdasarkan temuan empiris dari dua konteks wilayah bencana di Indonesia. Responden utama merupakan praktisi yang memiliki pengalaman atau keterlibatan langsung dalam pengambilan keputusan darurat, yang berasal dari BPBD dan berbagai instansi terkait penanggulangan bencana. Data empiris diperoleh melalui wawancara, *focus group discussion*, observasi, dokumen pendukung, serta pengumpulan preferensi responden. Hasil identifikasi menunjukkan bahwa pengambilan keputusan darurat di Indonesia dicirikan oleh heterogenitas preferensi, perbedaan interpretasi informasi, hubungan dan tingkat kepercayaan antar pengambil keputusan, serta dinamika pencapaian konsensus dalam kondisi keterbatasan waktu. Karakteristik tersebut belum sepenuhnya diakomodasi oleh model dasar, sehingga dikembangkan model adaptif MC-LGEDM yang mengintegrasikan preferensi linguistik berbasis *Personalized Individual Semantics*, *hybrid clustering*, pembobotan berdasarkan *similarity* dan *trust level*, serta *adaptive Consensus Reaching Process*. Pengujian model pada dua kelompok praktisi menunjukkan bahwa model adaptif secara konsisten menghasilkan tingkat konsensus kelompok yang lebih tinggi dibandingkan model dasar pada berbagai konfigurasi subkelompok, dengan solusi akhir yang relatif stabil. Validasi dilakukan melalui pengujian pada dua kelompok dengan karakteristik preferensi yang berbeda, evaluasi peningkatan konsensus dan konsistensi solusi akhir, serta konfirmasi kesesuaian urutan alternatif melalui diskusi dengan ahli dan praktisi. Meskipun demikian, validasi masih terbatas pada lingkungan penelitian yang terstruktur, jumlah responden dan konteks kasus yang terbatas, serta belum mencakup implementasi pada operasi darurat nyata, dan analisis sensitivitas parameter secara menyeluruh. Secara konseptual, model yang diusulkan bersifat umum dan berpotensi diterapkan pada berbagai situasi darurat yang memenuhi karakteristik EDM, LGDM, dan MCDM, dengan penyesuaian pada pemangku kepentingan, alternatif, kriteria, dan bobot kriteria sesuai konteks penerapan.

Kata kunci: *large group decision-making*, *emergency decision-making*, *multi-criteria decision-making*, konsensus, penanggulangan bencana.

ABSTRACT

Decision-making in emergencies often involves many stakeholders, multiple decision criteria, time pressure, and incomplete, dynamic information. This study focuses on Emergency Decision-Making (EDM), which simultaneously exhibits characteristics of Large Group Decision-Making (LGDM) and Multi-Criteria Decision-Making (MCDM), thereby requiring a Multi-Criteria Large Group Emergency Decision-Making (MC-LGEDM) approach. The study aims to identify the characteristics and needs of emergency decision-making in Indonesia and to develop an MC-LGEDM model that accommodates these characteristics. A baseline model was developed by integrating EDM, LGDM, and MCDM, and was subsequently refined based on empirical findings from two disaster-affected regions in Indonesia. The primary respondents were practitioners with experience or direct involvement in emergency decision-making, drawn from the Regional Disaster Management Agency (BPBD) and various other agencies involved in disaster management. Empirical data were obtained through interviews, focus group discussions, observations, supporting documents, and the collection of respondents' preferences. The findings indicate that emergency decision-making in Indonesia is characterized by heterogeneous preferences, differing interpretations of information, relationships, and levels of trust among decision-makers, and the dynamics of reaching consensus under time constraints. The baseline model has not fully accommodated these characteristics; therefore, an adaptive MC-LGEDM model was developed that integrates linguistic preferences based on Personalized Individual Semantics, hybrid clustering, similarity- and trust-based weighting, and an adaptive Consensus Reaching Process. Testing the model on two groups of practitioners showed that the adaptive model consistently produced higher group consensus than the baseline model across various subgroup configurations, with relatively stable final solutions. Validation was conducted through testing on two groups with different preference characteristics, evaluation of improvements in consensus and consistency of the final solution, and confirmation of the suitability of alternative sequences through discussions with experts and practitioners. However, validation remains limited to a structured research environment, a limited number of respondents, and case contexts. It does not yet include implementation in real emergency operations or a comprehensive analysis of parameter sensitivity. Conceptually, the proposed model is general and can be applied to various emergencies that exhibit the characteristics of EDM, LGDM, and MCDM, with adjustments to stakeholders, alternatives, criteria, and criterion weights based on the application context.

Keywords: *large group decision-making, emergency decision-making, multi-criteria decision-making, consensus, disaster management.*