ABSTRACT

Land investment in West Java is one sector with high potential returns but also significant risks. The need for accurate and relevant information is crucial for investors to make informed decisions. However, the availability of fragmented data and the lack of effective analytical tools often become obstacles in the decision-making process. The main problem of this research is how to develop a decision support system that can integrate data and provide accurate recommendations for land investment in West Java.

To address this issue, this research proposes the development of a machine learning-based decision support system that utilizes the k-prototype algorithm for land clustering and random forest for land price prediction. This system is designed to process various land-related data, including demographic, economic, and geographical data, which are then visualized in an interactive map. Thus, the system can provide more informative and targeted recommendations for appraisals, KJPP (Public Appraisal Service Office), and the general public.

The research results show that the developed system can improve the accuracy of land price predictions by up to 82,3%, the system also received positive feedback from users for its ease of use and comprehensive information. The conclusion of this research is that the developed decision support system is effective in helping investors make more accurate decisions and reducing investment risks in the land sector.

Keywords: decision support system, land investment, machine learning, k-prototype, random forest