

ABSTRACT

Need for productivity optimization. Agriculture in Padaherang Subdistrict has great potential but has not reached optimal productivity due to labor shortages, inadequate irrigation, and dependence on weather conditions. Additionally, farmer problems and potential data remain narrative, making it difficult to develop measurable strategies.

Data-driven regional potential optimization. Traditional agriculture, which is the backbone of the regional economy, needs to be developed with data-based strategies because decisions currently rely only on experience, causing a gap between the region's large potential and low production results.

Data-based strategic solution. Integration of text mining is used to structure the narrative interview data. The main tokens with TF-IDF weights were selected based on the suitability of the narrative with the original interview data to form categories and SWOT matrix scores.. Strategies SO, WO, ST, and WT are formulated from the matrix, then the highest scoring strategies are selected through IFAS and EFAS analysis. The priority strategies are evaluated using QSPM by three agricultural experts. The result is five priority strategies covering seeds, fertilizer, land, labor, and harvesting/post-harvest aspects.

Results and contribution. The formulated strategies are based on SWOT and QSPM analyses derived from interview text data. The priority strategies address seeds, fertilizer, land, labor, and harvesting with implications for improved crop resilience, financing access, land management, labor quality, and harvesting efficiency.

Keywords: traditional agriculture, strategy formulation, SWOT, text mining, QSPM