ABSTRACT

Indonesia has a climate that varies every year, which is one of the obstacles in the post-harvest processing process, especially at the drying stage. Currently, around 80% of farmers in Indonesia have not yet utilized digital technology and still rely on traditional drying methods using solar heat. Therefore, technological innovation is needed to increase the efficiency of the post-harvest process, reduce losses, and prevent food waste. One solution offered is the use of Smart Dehydrator. However, because this technology is still at Technology Readiness Level (TKT) level 6, a business feasibility analysis is needed to encourage an increase towards TKT 7.

This study aims to evaluate the feasibility of Smart Dehydrator technology from three main aspects: market, technical, and economic. The analysis process is carried out to determine the target market, estimated production costs, and potential profits if this product is mass marketed.

The methods used include a qualitative approach to collecting primary data through interviews, as well as secondary data from journals, books, and websites. The market aspect is analyzed using the Market Sizing method with the TAM (Total Addressable Market), SAM (Serviceable Addressable Market), and SOM (Serviceable Obtainable Market) framework. The technical aspects were analyzed through production components using the Bill of Materials (BOM) and the calculation of Cost of Goods Sold (COGS). While the economic aspects were analyzed using the Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period (PP) methods.

The output of this study was a business proposal, cash flow table, and financial management dashboard compiled using Microsoft Excel. The results of the analysis showed that the amount of production in one year was 1,500 units with a selling price per unit of Rp2,154,522. The NPV value was Rp980,800,135, the IRR reached 67%, and the Payback Period was 3 years. Based on these results, it can be concluded that the Smart Dehydrator technology development project is financially feasible.

Keywords: Technology smart dehydrator, Economic Analysis, Market Aspects, Technical Aspects