

## ABSTRACT

Hospitals are the forefront in providing healthcare services to the community. With a high population mobility and continuous population growth in Indonesia, the demand for healthcare facilities continues to increase. Currently, healthcare facilities are unable to meet the demand, especially in cancer treatment. Cancer is a major health challenge both globally and in Indonesia. Radiotherapy is one of the primary methods for treating cancer, with approximately 17.3% of cancer patients in Indonesia requiring radiotherapy. However, there are only 10 Regional Cancer Referral Hospitals with radiotherapy facilities. XYZ Hospital, located in DKI Jakarta, is one of the government hospitals that has a radiotherapy facility. Currently, they have only one radiotherapy machine, the Linear Accelerator (LINAC). The usage of this machine has exceeded its maximum capacity, which has the potential to damage the machine and lead to longer patient queues. An effort to address this issue is to expand the Radiotherapy Facility. Before proceeding with the expansion, a feasibility study is needed to determine whether the expansion is viable. The purpose of this study is to consider market, technical, and financial aspects. The feasibility study indicates that from a market perspective, the number of patient visits for radiotherapy, using the Winter's Additive forecasting method, is expected to continue increasing until 2028. From a technical aspect, the expansion will require a total area of 1528 m<sup>2</sup> and will consist of two floors, with the first floor serving as the entrance lobby and public facilities, and the basement floor providing medical support and utilities. The workforce required will be 13 individuals, including 3 Specialist Oncologists, 6 Medical Physicists, 1 Technician, 1 Nurse, 1 Security personnel, and 1 Cleaning Service, with working hours from Monday to Friday, 08:00 - 16:00. Regarding the financial aspect, the hospital will need funding amounting to Rp89.297.627.910 for the Radiotherapy Facility expansion. The financial analysis results in a Net Present Value (NPV) of -Rp31.539.067.503, an Internal Rate of Return (IRR) of -13,93%, and a Payback Period (PBP) of 6,7 years. Based on the feasibility study conducted, the development of the Radiotherapy Facility at XYZ Hospital is not recommended due to financial reasons.

***Keywords: Feasibility, NPV, IRR, PBP, Radiotherapy***