ABSTRACT

In urban areas, waste is a concern for many people, because it affects the cleanliness, health and beauty of a city. Waste produced by the community in urban areas increases each year while the capacity of the landfills is limited, and waste processing is also not yet optimal. Therefore, in order to manage waste effectively and efficiently, waste management technology is needed. One of the technologies of waste processing is waste sorting technology. Conventional waste sorting technology and belt conveyor (automatic) is a sorting technology that is currently developing in Indonesia. One of these technologies is found in Pusat Daur Ulang (PDU) Surabaya, which uses belt conveyor technology and Sekelimus Garbage Bank that uses conventional technology. The analysis is needed to compare the two waste management sites. This analysis is used to find out the sorting technology that has greater benefits. The comparison is seen from aspects of business processes, productivity, and benefit-cost analysis (BCA). The results of calculations from business process aspect using efficiency are PDU Jambangan 43% and Sekelimus Garbage Bank 62%. The results of productivity calculation are PDU Jambangan with total productivity of 0.61, process productivity of 6 tons per day, and productivity per 1,000 m2 of 2,061 tons per 1,000 m2, while Sekelimus Garbage Bank has a total productivity of 0.714, process productivity of 7,947 tons per day, and productivity per 1,000 m^2 of 4,787 tons per 1,000 m^2. Then the results of benefit-cost analysis calculations are PDU Jambangan NPV Rp 456,383,020, IRR 6.9%, and BCR 1,046, while the Sekelimus Garbage Bank NPV Rp 6,892,717,279, IRR 20.7%, and BCR 1,133. Then the results of the assessment of the two technologies are PDU Jambangan with 0 in 7 assessment points and Sekelimus Garbage Bank with a rating of 7 out of 7 assessment points. Based on this assessment, Sekelimus Garbage Banks that use conventional waste sorting technology are better if judged based on criteria for aspects of business processes, productivity, and benefit cost ratio.

Keywords: business process, productivity, benefit cost analysis, benefit cost ratio, belt conveyor