ABSTRACT

UMKM XYZ is an artisan bakery business engaged in snacks originating from Bandung City. In 2024, the company experienced a decline in supply chain performance due to problems in the procurement and production process of premixes, which caused 11% of the demand for premixes from outlets to be unfulfilled, especially for premixes for Ichigo Daifuku products, which are snacks in the form of mochi with fresh strawberry fillings as Japanese signature. This study aims to identify the root of the problem and design an improvement project on the responsiveness attribute using the supply chain operations reference (SCOR) method racetrack version 12.0 which consists of five stages, namely pre-SCOR program, set the scope, configure the supply chain, optimize project, and ready for implementation. In addition, the analytical hierarchy process (AHP) method was used to determine project priorities. Based on colecting detailed data and benchmarking on level 3 metrics, it was found that there are three metrics that have not reached the target, namely RS.3.107 receive product cycle time, RS.3.49 issue material cycle time, and RS.3.101 produce and test cycle time. The root cause of the problem was identified through fishbone diagram and according to the problem, four improvement projects were proposed. Based on the calculation results on the prioritization matrix, it was found that the project with the highest priority weight was the redesign of the production layout (50%). Therefore, a readiness check was conducted using the Knoster Model approach to ensure the readiness of the project. The project was designed to improve the efficiency of the production layout with a PTKTK approach detailed in the form of WBS with a total implementation time of 75 days and an estimated cost of Rp9,854,000, including worker incentives and trolley purchases. Thus, this project is ready to be implemented as an effort to improve supply chain performance at XYZ MSMEs. The simulation results of the implementation of the proposed layout show a decrease in production cycle time from 187.5 seconds to 120.06 seconds per unit so that it can contribute to improving the supply chain performance of XYZ MSMEs in a sustainable manner.

Keywords: Analytic Hierarchy Process (AHP), Supply Chain Performance, Project Proposal, SCOR Racetrack, Food MSMEs.