ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are one of the industrial sectors that are the pillars of the economic buffer in Indonesia. The number of MSMEs in Indonesia has increased from year to year, making competition between businesses even more intense. This makes business actors try to improve their company's performance in order to maintain its existence in the market. UMKM XYZ is one of the MSMEs that produces tofu in Kudus regency. The problem that occurs in XYZ MSMEs is that it is not known exactly what performance indicators need to be improved. This happens because the company does not yet have key performance indicators (KPIs) and a performance measurement system that can be used to measure company performance. So far, performance measurement is carried out based on the owner's perspective on the financial aspect only. Based on the results of interviews with owners, it is known that the company's focus is on the production process by considering sustainability aspects. This is in line with the theory of sustainable supply chain management (SSCM).

In the theory of Sustainable supply chain management (SSCM), it is explained that SSCM is a strategic strategy to integrate social, environmental and economic aspects in the company's supply chain processes. One of the applications of SSCM that is carried out is in the production process or known as sustainable production. Therefore, this study aims to determine sustainable production KPIs and design a sustainable production performance measurement system for XYZ MSMEs. However, this research will only discuss environmental and economic aspects. Supply chain operation reference (SCOR) is a supply chain operation reference model that can be used to evaluate, compare supply chain activities and company performance. The business process of MSME XYZ is mapped into the SCOR model version 12.0 from levels 1-3. Furthermore, KPIs are determined based on SCOR metrics and also based on previous research references. The selected KPIs are then verified by the company to ensure that the KPIs designed are in accordance with the company's goals and strategy. Then a pairwise comparison questionnaire is created to obtain the priority data of each criterion. The selected respondents were 4 people consisting of owners and 3 production

employees. Furthermore, weighting is carried out using the analytic hierarchy process (AHP). After obtaining weights for each attribute and KPI the next step is to calculate the actual performance value and normalize its performance value using snorm de boer normalization. This normalization is carried out because each indicator has a different size scale, after normalization of feeding will be obtained values with the same size scale.

Furthermore, the sustainable production performance measurement system is designed starting from making usecase diagrams, usecase scenarios and defining system inputs and outputs. The performance measurement system is made in the form of a dashboard using Microsoft Excel software. After this system is finished, it is necessary to test the system by the owner to test whether the system created can be used and run according to its function. Based on the data processing that has been carried out, 16 KPIs were obtained consisting of 9 reliability sub-criteria, 2 responsiveness sub-criteria, 1 cost sub-criteria, 1 agility sub-criteria, and 3 asset management sub-criteria. The design of a performance measurement system produces a dashboard in Microsoft Excel software that can be used as a tool to measure sustainable production performance in the company. This dashboard can display both overall production performance values as well as performance values for each criterion.

The performance value is equipped with a description and color indicator that helps the company to find out which performance indicators are good and which are not. With the sustainable production performance measurement system, companies can measure performance in the production process so that it can be known on the criteria for which performance indicators are good and which still need to be improved.

Keywords — KPI, Sustainable Production, Performance Measurement System, SCOR, AHP.