

## **ABSTRACT**

*Food loss usually occurs in the supply chain, especially in the upstream or early supply chain. Food loss often occurs in the milking section, the storage section, and the time of distribution. The selection of an effective partnership in the milk supply chain is because the farmer determines the quality of fresh milk products to cooperatives. The aim is to assess the level of food loss in the supply chain of cow's milk in Banyumas at the upstream level and the relationship of each process that causes food loss. The method used is Chi-Square and multiple linear regression. This study involved 40 respondents who came from cattle farmers in the Banyumas area. Efforts made in this study were to analyze every supply chain activity to find out which part of the food loss occurred, then used as attributes in this study such as Production, Harvesting, Inventory, Transportation, and Communication processes. The results of the Chi-Square method obtained Harvesting and Communication attributes related to food loss and the activities of cattle farmers. In the Harvesting attribute, the number of cows affects the use of sophisticated tools in the milking process. In the Communication attribute, it is found that the area of the cage is related to the coordination between actors to prevent food loss. In the linear regression test, it can be concluded that the variables of Communication and Transportation affect food loss (Y) in the fresh milk supply chain. The impact of the variables of Production, Harvesting, Inventory, Communication, Transportation, number of production cows, total capacity, and cage area on food loss in the fresh milk supply chain (Y) is 51.63%. Meanwhile, the remaining level of food loss in the new milk supply chain in Banyumas is influenced by other factors outside the model studied.*

**Keywords:** *Chi-Square, Effective partnership, Food loss, Multiple Linear, Supply chain Regression.*