

## **ABSTRACT**

*Indonesia is a quite large cosmetics market, where this is supported by the high awareness of the public about beauty making the beauty business a very promising business. Social media that discuss about cosmetics is very much, where in social media offers features that make visitors often visit and make social media as a reference when wanting to buy a product. On this feature there is information on products purchased by visitors and visitor profiles. This data From the data obtained by consumers' needs for beauty products is very diverse, this makes it difficult for us to know the needs of consumers about cosmetics. This study aims to determine the brand that has the potential to cross sell.*

*Cross-selling is a selling technique of changing a single buyer of a product into a multi-product buyer. This study uses data taken from the beauty website comments column with a total of 101 user data with 282 brands. This research uses the market basket analysis method by using the Association rules. The algorithm used is FP-Growth, because it has a shorter time in data processing. The pattern obtained is determined by the value of support, evidence, lift, and the value of conviction. To find accurate association rules, the Rapidminer Studio 9.0 tool is used.*

*In this study found 107 rules that are divided into 3 patterns, namely the pattern of 2 itemset, 3 itemset, and 4 itemset all rules included in the rule that has a level of association because there are no rules that have a confidence level below 80% and all lift values are far from 1 , and has a value of conviction that is far from 1. then 107 this rule can be used as a reference in the formation of cross selling on cosmetics brands.*

**Keywords: Cross-selling, Association Rule, FPGrowth**