

Universiti Teknologi MARA

**A Single Objective Fuzzy Linear
Programming in Optimizing Hand Socks
Production**

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STUDENT'S DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

There are a lot of production companies in this world. Each production company has their own product that they produce. However, there are two or more companies that produce the same product such as hand sock production company. Each company has its own hand socks design that they produce and sell according to customer preference. Then again, to satisfy all the demands from the customer sometimes can be confusing. The problem is the production company always have the difficulty in identifying or estimating the optimal demand for their product to fulfil the demand from customer and get the maximum profit at the same time. Thus, this study is performed to optimize the production of hand socks by using a single objective fuzzy linear programming to determine the maximum profit. The data for this study is a secondary data from Q Nisa Journey Enterprise. Then, this research will apply a fuzzy linear programming method to implement the objective of this study. To get the optimal solution for fuzzy linear programming this study will use Excel Solver. The results obtained are varies depending on the value of the auxiliary variable. It also shown, when the value of Basic, 3 Ruffles and Alhambra hand socks were 20372, 188032 and 1536 the highest profit that can be obtained by Q Nisa Journey Enterprise is RM 1,836,863.68 at auxiliary variable 0.0. Finally, the result shows that fuzzy linear programming is the best method when decision making is involved because it can deal with data haziness and sometimes fuzzy number can represent the situation in the method.

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