

ABSTRACT

Warranty could be seen as a contract between supplier and consumer refer to the transaction to it. The contract is a form of obligation and patronage by the producer to the consumer. Warranty is an after sales service protecting consumer needs in case of the product bought by consumer is out of order, or damaged by one condition before the time written in the contract. The application of warranty to a product directly cause additional cost. The additional cost caused by the services given to response the claim given by the consumer. The additional cost itself effecting the price of the product, and effected by the damage of the product. Two dimensional approach used to determine the age of the product usage based on the damage of the product. Based on mentioned above, determining warranty cost become important caused its connectivity with the product selling price, the benefits, with the result that programming a warranty would be needed.

Problem solving start with collecting data the quantity, the price, consumer claim data, and time to failure data. Next step would be processing the data. By plotting, those distribution parameters such η , β , and γ will be found and then determining reliability characteristic of every critical component such as failure rate (λ) and Mean Time To Failure (MTTF). Considering the value of MTTF and λ , we will get the optimal warranty duration. Then warranty cost counted based on the rule Free Replacement Warranty, Pro-Rata Warranty, and Combination Warranty. Warranty cost would be agree with warranty time decided before. Finally, selling price of NF-100 motorbike determined based on warranty cost that had been put.

The product that been observe had 13 critical component. The failure rate graph of the critical component shows probability of the damage occur raise by time. From the calculation warranty cost would be known that Pro-Rata Warranty < Combination Warranty < Free Replacement Warranty. The selling price per unit determined based on the warranty cost that been given + production cost + benefit from the warranty (10%) + benefit from the production (10%).

By this research we could conclude that warranty that should be applied is Pro-Rata Warranty with 0.50 year duration (6 months) or equal with 6000 km usage. By stipulation and the duration, warranty cost determined as Rp 1,703,246.71 and the selling price NF-100 motorbike as Rp 11,900,845.18.

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