## 7. Results

The table 5 shows the defuzzification at different spreads and table 6 shows the trends corresponding to each parameter. The crisp value is also denoted to draw out the comparison. The defuzzification method is carried out by centre of gravity method which is computed accordingly for each of the parameter. It is observed that for unavailability, reliability and MTBF, the trend increase. This means, as the spread increases, the values of these parameters increase. The other parameters have the trend decreasing. A series of graph is shown in Fig 7 which shows the patterns obtained by various parameters with the degree of freedom interval of 0.2 to have a pictorial view of the evaluated parameters. Thus, based on these results and observation, the maintenance analyst will select or study upon a defuzzified value which will be suitable to achieve the maximum productivity and efficiency.

## 8. Conclusion

The in-depth reliability analysis of the components of centrifugal production pump gave us an insight as to where the problems lie and the areas which are under the working scope for better productivity. The usage of model clearly depicts the systems and their interrelation among each other. From the result obtained, the availability is decreasing which is not desirable for increasing the productivity of a production unit and hence it should be focused upon. Also, MTBF is increasing which leads to low productivity. Hence, this analysis provides a pathway for further work in order to minimize the under performance of the whole production unit.

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