MODELING FACTORS AFFECTING STUDENT DROP OUT AT SEPULUH NOPEMBER INSTITUTE OF TECHNOLOGY SURABAYA BY USING BAYESIAN MIXTURE SURVIVAL ANALYSIS

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Abstract
The high success rate and low failure rate of students can reflect the quality of teaching and learning process in a university. The needs of analysis and information about the factors that affect students drop out at Sepuluh Nopember Institute of Technology (ITS) are the reason for doing research on the length of study of students. Survival analysis is conducted on the students who stop study (drop out) in ITS. The distribution of length of study showed mixture pattern, so Bayesian mixture survival approach, through mixture weibull proportional hazards model is used. The Results showed that on 434 students, the majority of students drop out in the second and fourth semester, with an average GPA and TPB score respectively are 1,7908 and 1,3635. Percentage of students who drop out came from government schools are 77% and most of students who drop out are FTSP (Faculty of Civil Engineering and Planning) students (28,8%). The factors which significantly influence student drop out are age, region of origin came from of students, parents income, faculty, and selection way to enter university as well as GPA and TPB score. The Result of the first mixture model showed that students of FMIPA (Faculty of Mathematics and Natural Science) tend to be slower to drop out of 10,7296 compared Faculty of Industrial Technology (FTI) students. In the second mixture model showed that students from regular PMDK tend to drop out faster by 1,7308 than students from SPMB/ SNMPTN. The proportion of components in the first mixture model is 0,4772 and the proportion of components in the second mixture model is 0,5228.

Key Words: students drop out, Bayesian mixture survival, mixture weibull proportional hazards