

Analyzing Criminal Recidivism in Brazil Using a Semiparametric Weibull Cure Rate Model

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Abstract

Criminal recidivism remains a persistent issue in many countries and may be shaped by several factors. In Brazil, prison resocialization policies, including temporary release on special dates, have generated debate because some individuals fail to return to custody and others commit new offenses. This study investigates factors associated with criminal recidivism using a semiparametric Weibull cure rate model within the Generalized Additive Models for Location, Scale and Shape framework. The analysis used data from 1,092 individuals released from the State Penitentiary of Maringá, Paraná, Brazil, and followed from May 1996 to December 2002. Individuals who did not reoffend during the study period were treated as right-censored, similarly to cured observations. The results indicate that jail time affects the average time until recidivism, with longer incarceration associated with longer recurrence times. The estimated probability of non-recidivism was highest for parole, followed by definitive freedom and semi-open freedom. Age also showed a nonlinear effect, with the probability of non-recidivism increasing until approximately 45 years and decreasing thereafter.

Index Terms

Criminal Recidivism; Weibull Cure Rate Model; GAMLSS; Parole; Brazil