Distribusi generalized inverse lindley = Generalized inverse lindley distribution

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Abstrak

Fungsi hazard dapat dikategorikan menjadi dua, yaitu monoton (naik atau turun) dan non monoton (bathtub shape dan upside down bathtub shape). Untuk memodelkan data
dengan fungsi hazard monoton, naik atau turun, dan non monoton bathtub shape umumnya digunakan distribusi Gamma atau Weibull. Pada skripsi ini, akan diperkenalkan sebuah distribusi yang dapat memodelkan data dengan fungsi hazard berbentuk upside down bathtub shape. Distribusi ini diturunkan dari distribusi Lindley dengan melakukan transformasi yang disebut distribusi generalized inverse Lindley. Distribusi ini lebih fleksibel dalam memodelkan data dengan fungsi hazard non-monoton upside down bathtub. Hal ini dikarenakan parameter shape pada distribusi tersebut menyebabkan fungsi hazard memiliki banyak variasi bentuk namun tetap mempertahankan bentuk upside down bathtub. Beberapa karakteristik dari distribusi seperti fungsi kepadatan peluang, fungsi distribusi, fungsi survival, fungsi hazard,dan momen ke-r akan dicari. Untuk mengestimasi parameter distribusinya akan digunakan metode maximum likelihood. Di akhir skripsi ini, akan dibangun data untuk mengestimasi parameter dari distribusi yang bersangkutan
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Hazard rate are categorized by their shape, either its monotone (decreasing or increasing) or non-monotone (upside down bathtub shaped and bathtub shaped). Modelling data from monotone hazard rate, either decreasing or increasing, and bathtub shaped hazard rate are possible with common distribution such as Gamma distribution or Weibull distribution. For data which has upside down bathtub shaped hazard rate is usually done by using inverse transformation of exponential distribution such as inverse Gamma, inverse Weibull, and inverse Lindley. In this paper, a distribution that can model a data with upside down bathtub shaped hazard rate is introduced. The distribution is derived from Lindley distribution with transformation and is called generalized inverse Lindley distribution. The distribution is more flexible because shape parameter which make wide variety of shape without changing its hazard rate from upside down bathtub shaped. Some
statistic properties of the distribution such as density function, cumulative function, survival function, hazard function, and moment will be discussed. For estimating
parameter of the distribution, maximum likelihood method will be used. In the end, simulation data will be generated to see the estimation of the distributions parameter.