NONPARAMETRIC ESTIMATION UNDER LENGTH-BIASED SAMPLING AND TYPE I CENSORING: A MOMENT BASED APPROACH*

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Abstract.   Observation of lifetimes by means of cross-sectional surveys typically results in left-truncated, right-censored data. In some applications, it may be assumed that the truncation variable is uniformly distributed on some time interval, leading to the so-called length-biased sampling. This information is relevant, since it allows for more efficient estimation of survival and related parameters. In this work we introduce and analyze new empirical methods in the referred scenario, when the sampled lifetimes are at risk of Type I censoring from the right. We illustrate the method with real economic data.

Key words and phrases: Censoring, cross-sectional, length-biased sampling, stationarity, truncation.