

Accepted Manuscript

Asymptotic representation of presmoothed Kaplan-Meier integrals with covariates in a semiparametric censorship model

Gerhard Dikta, René Külheim, Jorge Mendonça,
Jacobo de Uña-Álvarez

PII: S0378-3758(15)00212-8

DOI: <http://dx.doi.org/10.1016/j.jspi.2015.12.001>

Reference: JSPI 5444

To appear in: *Journal of Statistical Planning and Inference*

Received date: 6 May 2015

Revised date: 2 December 2015

Accepted date: 2 December 2015

Please cite this article as: Dikta, G., Külheim, R., Mendonca, J., de Uña-Álvarez, J., Asymptotic representation of presmoothed Kaplan-Meier integrals with covariates in a semiparametric censorship model. *J. Statist. Plann. Inference* (2015), <http://dx.doi.org/10.1016/j.jspi.2015.12.001>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



Asymptotic representation of presmoothed Kaplan-Meier integrals with covariates in a semiparametric censorship model

Gerhard Dikta¹, René Külheim², Jorge Mendonça³ and Jacobo de Uña-Álvarez^{4,*}

¹ Fachhochschule Aachen, Abt. Jülich, Germany and Department of Mathematical Sciences, University of Wisconsin, Milwaukee, USA. E-Mail: dikta@fh-aachen.de

² Department of Mathematical Sciences, University of Wisconsin, Milwaukee, USA and Fachhochschule Aachen, Abt. Jülich, Germany. E-Mail: re.kuelheim@gmx.de

³ Polytechnic Institute of Oporto, School of Engineering, Portugal. E-mail: jpm@isep.ipp.pt

⁴ Department of Statistics and Operations Research, University of Vigo, Spain. E-mail: jacobu@uvigo.es

*Corresponding author. Address: Departamento de Estadística e Investigación Operativa, Facultad de Ciencias Económicas y Empresariales, Universidad de Vigo, Campus Universitario Lagoas-Marcosende 36310 Vigo, Spain. Phone: (+34) 986812492 Fax: (+34) 986812401 E-mail: jacobu@uvigo.es

Vigo, December 2nd 2015

Abstract

Presmoothed Kaplan-Meier integrals have been proposed as suitable estimators in semiparametric censorship models. They are based on a modification of Kaplan-Meier weights which replaces the censoring indicators by some smooth (parametric) fit to the conditional probability of uncensoring, leading to estimators with smaller variance. In this paper an asymptotic representation of these estimators as a sum of i.i.d. random variables is established. The situation in which covariates are present is considered; therefore, the present paper extends previous results in Dikta et al. (2005) to the setting with covariates. As a consequence, a CLT for presmoothed Kaplan-Meier integrals with covariates is obtained. Application to censored regression is given. The finite sample performance of the estimator is investigated through simulations.

1 Introduction

In Survival Analysis and other fields, the variable of interest Y is a lifetime which is observed under right-censoring. Therefore, rather than Y one observes (Z, δ) ,

Download English Version:

<https://daneshyari.com/en/article/7547454>

Download Persian Version:

<https://daneshyari.com/article/7547454>

[Daneshyari.com](https://daneshyari.com)