31 May - 03 June 2016
at
ISEG- Lisbon School of Economics and Management

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SUBMISSION FORM

Name:	**Katrien Antonio**	**Company:**	**KU Leuven & University of Amsterdam**
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Title of Paper / Presentation / Session to appear in program: **Telematics insurance: impact on tarification**

Author/s:

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3.	**Gerda Claeskens**	**4.**	

What will your final submission be? Presentation and Paper ☐ Presentation Only ☐

If selected, what level of knowledge will delegates attending your session require? (please select only) one

☐ No prior knowledge ☐ General industry knowledge assumed ☐ Technical/specific industry knowledge assumed

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ABSTRACT

Telematics insurance: impact on tarification

Roel Verbelen, Katrien Antonio and Gerda Claeskens

Key words: Generalized Linear Models, telematics data, tarification, car insurance

Purpose of your paper: statistical analysis of a telematics data set, comparison between traditional rating methodology and rating based on telematics information

Abstract:

Telematics technology - the integrated use of telecommunication and informatics – may fundamentally change the car insurance industry by allowing insurers to base their prices on the real driving behavior instead of on traditional policyholder characteristics and historical claims information. Telematics insurance or usage-based insurance (UBI) can drive down the cost for low-mileage clients and good drivers.

Car insurance is traditionally priced based on self-reported information from the policyholder, most importantly: age, license age, postal code, engine power, use of the vehicle, and claims history. Over time, insurers try to refine this a priori risk classification and restore fairness using no-claim discounts and claim penalties in the form of the bonus-malus system. It is expected that these traditional methods of risk assessment will become obsolete. Your car usage and your driver abilities can be better assessed based on telematics data collected, such as: the distance driven, the time of day, how long you have been driving, the location, the speed, harsh or smooth breaking, aggressive acceleration or deceleration, your cornering and parking skills... This high dimensional data, collected on the fly, will force pricing actuaries to change their current practice. New statistical models will have to be developed to adequately set premiums based on individual policyholder's motoring habits instead of the risk associated to their peer group.

In this work, we take a first step in this direction. We analyze a telematics data set from a European insurer, collected in between 2010 and 2014, in which information is collected on the amount of meters insureds drive. Besides the number of meters driven, we also registered how this distance is divided over the different kind of road types and time slots. This data allows car insurers the use of real driving exposure to price the contract. We build claims frequency models combining traditional and telematics information and discover the relevance and impact of adding the new telematics insights.

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