

Linking the Offender's age to the Criminal Event: A Statistical Study on Sex-related Homicides

Helmut Tausendteufel¹, Stephan Stahlschmidt^{1,2,*}, Wolfgang Härdle²

1. Fachhochschule für Verwaltung und Rechtspflege Berlin, Faculty 3, Alt-Friedrichsfelde 60, D-10315 Berlin, Germany

2. Humboldt-Universität zu Berlin, School of Business and Economics, Institute of Statistics and Econometrics, Spandauer Straße 1, D-10718 Berlin, Germany

* Contact author: stahlschmidt@wiwi.hu-berlin.de

Keywords: Bayesian Network, Classification, Criminal Event Perspective

Offender profiling has gained much popularity over the last years. But although important progress has been made, little is known about the implications of the offender's age on the crime. The project at hand investigates this issue by means of an exploratory statistical study focusing on sex-related homicides. The project is thereby based on a dataset of 350 sex-related homicides in Germany since 1991, in which the offender was found guilty and was convicted.

The forensic theoretical background is provided by the Criminal Event Perspective stressing the interaction of the offender's behaviour, the victim's behaviour and the underlying situation. These three components together determine the sequences of the crime and therefore any observable variable.

In order to support police profilers with a tool applicable in their investigation, a Bayesian network will be presented mirroring the causalities found in the dataset. To this end Qualitative Comparative Analysis, visualization techniques and different exploratory techniques are applied in the R environment.

References

- Böttcher, S. G. and Dethlefsen, C. (2003). deal: A Package for Learning Bayesian Networks. *Journal of Statistical Software*, 8(20).
- Dusa, A. (2008). QCA: Qualitative Comparative Analysis. R package version 0.5-2.
- Scutari, M. (2009). bnlearn: Bayesian network structure learning. R package version 1.1.
- Swayne, D. F., Buja, A. and Temple Lang, D. (2003). Exploratory Visual Analysis of Graphs in GGobi. *Proceedings of DSC 2003* (Vienna, Austria), March 2003, 20-22.