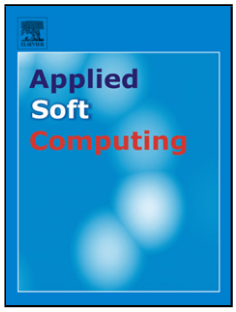

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Author: G. Hesamian M.G. Akbari

PII: S1568-4946(17)30249-1
DOI: http://dx.doi.org/doi:10.1016/j.asoc.2017.04.067
Reference: ASOC 4200

To appear in: *Applied Soft Computing*

Received date: 1-12-2016
Revised date: 8-4-2017
Accepted date: 27-4-2017

Please cite this article as: G. Hesamian, M.G. Akbari, Semi-Parametric Partially Logistic Regression Model with Exact Inputs and Intuitionistic Fuzzy Outputs, *<![CDATA[Applied Soft Computing Journal]]>* (2017), http://dx.doi.org/10.1016/j.asoc.2017.04.067

Semi-Parametric Partially Logistic Regression Model with Exact Inputs and Intuitionistic Fuzzy Outputs

G. Hesamian[a,*], M.G. Akbari[b]

[a]*Department of Statistics, Payame Noor University, Tehran 19395-3697, Iran,*
[b]*Department of Statistics, University of Birjand, Birjand 615-97175, Iran.*

Abstract

Some accounting studies have focused on logistic regression relationships between exact/fuzzy inputs/outputs. However, intuitionistic fuzzy sets find application in many real studies instead of fuzzy sets. On the other hand, semi-parametric partially linear model also has attracted attentions in recent years. This study is an investigation of intuitionistic fuzzy semi-parametric partially logistic model for such cases with exact inputs, intuitionistic fuzzy outputs, intuitionistic fuzzy smooth function and intuitionistic fuzzy coefficients. For this purpose, a hybrid procedure is suggested based on curve fitting methods and least absolutes deviations to estimate the intuitionistic fuzzy smooth function and intuitionistic fuzzy coefficients. The proposed method is also compared with a common fuzzy logistic regression model as a real fuzzy data set. It is shown that the proposed intuitionistic fuzzy logistic regression model performs better and efficient results in regard to some goodness-of-fit criteria suggest that the proposed model could be successfully applied in many practical studies of intuitionistic fuzzy logistic regression model in expert systems.

Keywords: Intuitionistic fuzzy number, semi-parametric partially linear, curve fitting method, least square deviation, optimal bandwidth, goodness-of-fit measure.

*Corresponding author
Email addresses: gh.hesamian@pnu.ac.ir (G. Hesamian), g_z_akbari@birjand.ac.ir (M.G. Akbari)