

ASYMPTOTIC NORMALITY OF PARAMETRIC PART IN  
PARTIALLY LINEAR MODELS IN THE PRESENCE OF  
MEASUREMENT ERROR

Secil Yalaz Toprak<sup>1</sup>, Mujgan Tez<sup>2</sup>, H.Ilhan Tutarlar<sup>3</sup>

<sup>1,3</sup>*Dicle University, Diyarbakir, Turkey*

<sup>2</sup>*Marmara University, Istanbul, Turkey*

## Abstract

The interest in study measurement error model is growing with the publication of series of papers on various topics. In literature semiparametric partially linear model relating a response  $Y$  to predictors  $(X, X^*)$  with function  $X^T\beta + g(X^*)$  when the  $X^*$ s are unobserved and with additive error is mainly considered with the assumption that the measurement error has a known distribution. Our study gives more detailed answer to the question of "in situation of if independent variable has an unknown distribution in a semiparametric regression model how regression functions and densities predictions could be obtained?". We derived an estimator of  $\beta$  and demonstrated the resulting estimator  $\hat{\beta}$  is asymptotically normal. In the application, the performances of  $\hat{\beta}$  and  $\hat{g}_n(x^*)$  are investigated through Monte Carlo experiments.

**Keywords:** Errors in Variables, Measurement Error, Partially Linear Model, Semiparametric Regression, Unknown Error Density

## References

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<sup>1</sup>syalaz@dicle.edu.tr

<sup>2</sup>mtez@marmara.edu.tr

<sup>3</sup>tutalarhi@dicle.edu.tr