

Mitigating Sample Selection Bias Through Customer Relationship Management

Saumitra N Bhaduri, Anuradha V
GE-MSE Decision Sciences and Financial Research Lab
saumitra@mse.ac.in and anuradha@mse.ac.in

and

David J Fogarty
Vice-President
GE Money Global CRM/Decision Sciences
David.Fogarty@ge.com

Mitigating Sample Selection Bias Through Customer Relationship Management

Saumitra N Bhaduri, Anuradha V and David J Fogarty

Abstract

In direct marketing campaign, response model are often developed only based on the data of selected population. Since the propensity to respond depends on selection, this introduces a possibility of bias in the estimates of the response model. This paper tries to apply a bivariate probit model with partial observability suggested by Meng and Schmidt (1985) to correct the bias arising due to the sample selection. Though the primary focus of this paper is to address the sample selection bias, the application of this paper can also be extended to develop a CRM solution to the twin problems of adverse selection and costly screening.

Keywords: *Sample Selection Bias; Bivariate Probit; Reject Inference*

The customers you want to attract don't respond, and the ones you don't want to attract do.

*—Richard E. Mirman, Chief Marketing Officer,
Harrah's Entertainment, quoted in Levey (2002, p. 1)*

WORKING PAPER 30/2008

March 2008

Price : Rs. 35

**MADRAS SCHOOL OF ECONOMICS
Gandhi Mandapam Road
Chennai 600 025
India**

**Phone: 2230 0304/ 2230 0307/2235 2157
Fax : 2235 4847 /2235 2155
Email : info@mse.ac.in
Website: www.mse.ac.in**