

# Informational Content in Static and Dynamic Discrete Response Panel Data Models

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## Abstract

We study the informational content of widely used identifying assumptions in discrete panel data models. To do so, we begin by exploring the information in the static binary choice panel data introduced in Manski (1987), who showed that point identification was achievable under a *stationarity* assumption. Our first result is that while these conditions suffice for point identification, they do not to achieve *regular identification*, thereby ruling out the ability to conduct standard inference. This motivates exploring the informational content of stronger identifying conditions, such as *exchangeability*, e.g. Honoré (1992), and *exclusion*, e.g. Honoré and Lewbel (2002). Here we find that while exchangeability adds no informational content, exclusion does in the sense that the identification is now *regular*. Based on this identification result we propose an estimation procedure that has conventional asymptotic properties, such as root- $n$  consistency and asymptotic normality. We then extend our analysis to dynamic discrete choice panel data models, e.g. Honore and Kyriazidou (2000), Arellano and Carrasco (2003), and censored panel duration models, e.g. Khan and Tamer (2010), finding analogous results to the base model, in that exclusion restrictions add much informational content.

**Keywords:** Panel Data, Dynamic Discrete Choice, Duration Models.