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# The Profiling Game in Border Crossings

Yael Deutsch<sup>1</sup> and Arieh Gavious<sup>2</sup>

## Abstract

Developing effective screening processes in border crossings, in order to identify violators within large groups of mostly innocent people, is an important and difficult task, as it is not possible nor effective to screen every passenger with the same intensity required to detect a violator. Profiling has been applied for several decades as a tool to deal with this task, but there is still no proof of its effectiveness. Our main motivation is to study whether profiling is indeed helpful, and if so, how it should be used. As such, we consider an interaction that takes place in some crowded border crossing, where passengers can be affiliated into different groups. We offer a sequential game-model with three players: a defender, who acts firstly and decides on a screening process, an attacker, who acts secondly and may recruit a passenger as a violator, and the recruited violator, who acts last and may choose not to violate, as it has its own private violating motivation. We will study different variants of the base game, which differ by the choice of screening policy (an announced profiling, an unannounced profiling, no-profiling), the attacker's knowledge of the screening policy, the defender's and the attacker's received signals regarding the violators' private motivations, the recruiting costs of passengers of different groups, and how to manage the tradeoff between security and congestion. These variants will help us to understand the extremely challenging social and strategic questions regarding the controversy over the need of profiling.

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<sup>1</sup>Department of Management, Bar-Ilan University, Israel.

<sup>2</sup>Faculty of Business Administration, Ono Academic College, Israel and Department of Industrial Engineering and Management, Ben Gurion University, Israel