**Empirical Examination of Patent Prosecution in Israel**

**Abstract - English**

Because a patent is a license for a monopoly affecting the public good, the process of patent prosecution deserves close scrutiny. However, significant aspects of this process remain unexplored. In particular, the two central thresholds for patent eligibility, “novelty” and “non-obviousness,” regarded as the bedrock of patent law worldwide, have received little empirical examination. Identifying how these requirements are invoked during the patent prosecution process is critical to understanding how the application of these central tenets of patent law affects the quantity and quality of the resulting patents and, ultimately, the public interest.

In this empirical study, we examine a representative sample of utility patent applications filed with the Israeli Patent Office (ILPO) between 2012 and 2019, and quantify the occurrence of various grounds the examiner asserted for rejecting the applicants’ claims. We further investigate the ILPO’s reliance on “non-novelty” and “obviousness” as grounds for restricting or rejecting patent claims, followed by an examination of the progression of patent applications subject to such determinations.

Our results raise two interrelated and thought-provoking phenomena. First, we found that obviousness—a mixed question of law and fact—was by far the most common basis for ILPO action rejections, as consistently observed when controlling for different variables, such as the field of invention, the applicant’s characteristics, and the application’s final disposition. Second, we found that while ILPO action rejections often lead to narrowing or abandonment of claims in ensuing exchanges between the applicant and the examiner, most applicants ultimately overcome the rejections and are granted a patent, even if narrowed. These findings reveal that the interaction between the applicant and the patent office is akin to a negotiation, one that generally culminates in at least some measure of success for the applicant.

These observations have important implications for patent policy and practice. The prevalence of obviousness as a ground for ILPO action rejections together with the subsequent negotiations between the examiner and the applicant underscore that patent prosecutions entail significant legal analysis in addition to technological expertise. The frequency with which disputes over the element of obviousness arise in the course of patent prosecutions suggests that the standard requires greater clarification. While judicial review is needed for further developing and defining the doctrine, patent office’s decisions rarely reach the courts. Therefore, it is critical to encourage greater judicial oversight of patent office decisions. The need for doctrinal clarity is particularly acute in view of efforts to integrate advanced computational technologies, such as artificial intelligence systems, into the patent prosecution process. It is debatable whether these technologies can be used to support patent examiners’ legal analysis, especially considering the ambiguity of the issue.

Moreover, our study suggests that patent examiners—whose role is to grant or reject patent applications in an objective manner reflecting judicial interpretations of the law—may find it difficult to exercise their function consistently due to the individualized exchanges that arise in negotiations with applicants. Accordingly, policymakers may wish to consider imposing limits on such negotiations to ensure that decisions by the patent office are free from the influence of applicant “bargaining,” and thereby produce predictable results that maximize the public good.