Imitating the Typography From Classic Hindawi Journals (i.e., from ‘Fixed Points as Nash Equilibria’ (Torres-Martínez, 2006))

Pachá (`https://pacha.dev`)

July 12, 2023

This uses Lucida and Minion Pro.

Let $Y \subset \mathbb{R}^n$ be a convex set. A function $v : Y \to \mathbb{R}$ is *quasiconcave* if, for each $\lambda \in (0,1)$, we have $v(\lambda y_1 + (1 - \lambda y_2)) \geq \min\{v(y_1),\ v(y_2)\}$, for all $(y_1, y_2) \in Y \times Y$.

[Nash-2.] Given $\mathcal{G} = \{I, S_i, V^i\}$, suppose each set $S_i \in \mathcal{H}$ and that objective functions are continuous in its domain and *quasiconcave* in its own strategy. Then there is a Nash equilibrium for $\mathcal{G}$.

[Kakutani.] Given $X \in \mathcal{H}$, every closed-graph correspondence $\Phi : X \twoheadrightarrow X$, with $\Phi(x) \in \mathcal{H}$ for all $x \in X$, has a fixed point, provided that $\Phi(x) = \prod_{j=1}^{m} \pi_j^m(\Phi(x))$ for each $x \in X \subset \mathbb{R}^m$.

The article proves that *[Nash-2]* $\to$ *[Kakutani]*.

Ok, sufficient display of math symbols.

See `https://github.com/pachadotdev/varsityblues` for a set of complete LaTeX templates to be used with R Markdown or Quarto.