Table 1: Comparison of estimation strategy assumptions for identifying causal effects

Ordinary Least Squares	Matching
SUTVA	SUTVA
Linear	Non-parametric
$\mathbb{E}[X'\epsilon] = 0$ (No endogeneity)	$(Y_0, Y_1) \perp T \vert X$ (Selection on observables)
ATE is estimated	$0 < \Pr(T_i = 1) < 1 \quad \forall\, i$ (Common support) in sample gives ATE
Consistent	Consistent
Unbiased	Biased
Estimated for whole population	Known subpopulation

Instrumental Variables	Regression Discontinuity
SUTVA	SUTVA
Linear outcome stage	Non-parametric
$\mathbb{E}[Z'\nu \vert X] = 0$ (Ignorable treatment assignment)	The distribution $f_i(z_i)$ is continuous at z_0 or $(\beta_i, T_i) \perp z_i$ for z_i near z_0
$\mathbb{E}[Z'\epsilon \vert X] = 0$ (Exclusion restriction)	$z_i \perp Z_0$, where Z_0 is the set of possible z_0
$\mathbb{E}[D_i(Z_i) - D_i(Z_i')] \neq 0$ or $\mathrm{Cov}(Z, X) \neq 0$ (Inclusion restriction)	$\lim\limits_{z \to z_0^+} \mathbb{E}[D_i(z_i) \vert z_i = z] \neq \lim\limits_{z \to z_0^-} \mathbb{E}[D_i(z_i) \vert z_i = z]$
$D_i(Z) \geq D_i(Z')$ or $D_i(Z) \leq D_i(Z')$ $\forall\, i \quad \forall\, Z, Z'$ (Monotonicity)	$\mathbb{E}[Y_1 \vert z_i = z]$ is continuous at $z = z_0$ $\mathbb{E}[Y_1 \vert z_i = z]$ is continuous at $z = z_0$
$\exists\, i : D_i(Z) \neq D_i(Z')$ gives the LATE Homogeneous treatment effect gives the ATE	LATE Homogeneous treatment effect gives the ATE
Consistent	Consistent
Biased	Biased
Unknown subpopulation	Known subpopulation