**Regression Discontinuity Design Standards**

**Taken from WWC Standards Handbook**

The forcing variable is ordinal and includes a minimum of four or more unique values below the cutoff and four or more unique values above the cutoff.

The cutoff value of the forcing variable must not be used to assign member of the study sample to other interventions other than the one being studied, i.e. only one intervention going on.

The forcing variable used to calculate the impact must be the same as the forcing variable used to assign treatment status.

**Standard 1: Integrity of the Forcing Variable**

(at least two of the three criteria below must be satisfied)

1. There must be no systematic manipulation of the treatment status that would allow specific individuals access to the treatment and changing their ‘true’ forcing variable score.
2. The statistical test must show that there is continuity in the density of the forcing variable, that is, we must fail to reject the null hypothesis of continuity of density of forcing variable at 5 percent level. If there is unusual mass of units near the cutoff, then the integrity of the forcing variable might be compromised.
3. The graphical integrity of the forcing variable must be demonstrated by using graphical analysis such as a histogram or other types of density plot.

**Standard 2: Attrition**

The overall and differential attrition must be considered (generally, the same criteria as with other study designs).

**Standard 3: Continuity of the Relationship Between the Outcome and Forcing Variable**

In absence of the intervention, there should be a smooth relationship between the outcome and the forcing variable at the cut-off score. However, this condition cannot be checked directly

(at least I and either II or III must be satisfied)

1. Baseline equivalence on key covariates must be demonstrated at the cutoff value of the forcing variable. The baseline equivalent standards for other study designs apply here as well.
2. With graphical analyses, there must be no evidence of a discontinuity in the outcome-forcing variable relationship at values of the forcing variable other than the cutoff value unless there can be a satisfactory explanation.
3. Same for statistical analysis. In addition, statistical analyses must be conducted for 4 values above the cutoff and 4 values below. At least 95 percent of the estimated impacts on the outcome at other values of the forcing variable must be statistically insignificant at the 5 percent level, for example, if impacts are estimated for 20 values of the forcing variable, at least 19 of them must not be significant.

**Standard 4a: The functional form of specification of the relationship between the outcome variable and the forcing variable**

**Standard 4b: The appropriate range of the forcing variable values used to select the analysis sample**

(at least I, II, V must be satisfied)

1. The local average treatment effect for an outcome MUST be estimated using a statistical model that controls for the forcing variable.
2. Ideally, the study should have a justified bandwidth.
3. If the study does not use a local regression or related nonparametric approach or uses such an approach but not within a justified bandwidth, then it may estimate impact using a best fit regression where any measure of goodness of fit from the methodological literature can be used, such as the Akaike Information Criteria (AIC) or adjusted R-squared.
4. The study needs to provide evidence that the findings are robust to varying bandwidth or functional form choices.
5. There must be a graphical analysis displaying the relationship between the outcome and forcing variable, including a scatter plot and a fitted curve. If the study uses a particular functional form for the outcome-forcing variable relationship, then the study must show graphically that this functional form fits the scatter plot reasonably well, and if the study uses a local linear regression, then the scatter plot must show that the outcome-forcing variable relationship is indeed reasonably linear within the chosen bandwidth.
6. The relationship between the forcing variable and the outcome must not be constrained to be the same on both sides of the cutoff [see Imbens & Lemieux (2008) on an implementation of cross-validation for RDD analysis].