Code-book

Search Process

Meta analyses need three levels of information to be coded: search level, study level and the effect level information. We have done the first two by using the [apsis platform](https://apsis.mcc-berlin.net/scoping/) which automatically records our search strategy and study level information from the documents that have been tagged as relevant. This document mostly relates to the manual coding at the effect level, also done on the apsis platform.

Ineligible documents

After going through the abstract and reading through the document, if you find it unacceptable to be included in the study because 1) it does not contain relevant effect sizes 2) effect size information is incomplete or irretrievable 3) document is not relevant or any other reason, please add the reason for excluding the document in the Notes box.

Acceptable documents

* For acceptable documents we collect effect level information in two forms, “Effects” and “Interventions”.
* Each study may report multiple estimates of the effect. This can be due to multiple iterations, multiple treatments/interventions, different populations, etc. You can add the multiple effects and corresponding information for each study. As such, please collect information on all the effect sizes estimated in the study along with the corresponding control variables.
* Once you have filled out and submitted the effect form once, you can also copy an effect form (some of the information will be similar across effects) by clicking on the yellow box next to “copy this”. This will create a copy of the completed form. Modify the form as required and click “submit” to save it as a different effect.

Effect Fields

In this section we will capture one estimation (e.g. one coefficient, one difference of means) and the characteristics of the model used in order to accurately calculate effect sizes comparable to others included in our meta-analysis.

After the statistical information is captured it will be linked to an intervention in the next section. An effect size can be estimated for joint interventions (e.g. a TOU pricing scheme might be introduced alongside an in-home display device). The capture of the intervention section should describe the intervention linked to the estimate as accurately as possible.

**Note: All boxes are set by default to -999 or information not available by default.**

| **Field Name** | **Explanation** | **Choices or Examples** |
| --- | --- | --- |
| Page | Capture page # for the specific effect – preferably page number that presents table of results.  If you do not have access to the published paper please check the dropbox first. If you only have a version of the paper without page numbers use a normal page count to fill in the relevant page number. |  |
| Statistical technique | Studies may employ different techniques to estimate effects.  Note: Remove Difference in Difference from effect statistical\_technique. Here we really just capture the type of regression and let Difference in Difference be the study type | Probit  Logit  Difference of means  ANOVA  one-step GMM  Time/ Household or both Household Fixed effects  Time Fixed effects  Household and time fixed effects  Random effects regression  OLS regression, etc. |
| Dependent variable | Studies will utilize various measures to capture energy consumption. What variable/operationalization are they using here. We are ultimately interested in percentage change in energy consumption of the household given the intervention.  Note: If a paper does the analysis using the dependent variable as “absolute energy consumption” and “change in energy consumption”, the figures for “change in energy consumption” should be recorded. | Household electricity consumption  Household gas consumption  HH energy consumption per square foot  Log HH energy consumption per square foot  Others |
| Study design | Whether the study calculates a pre-test/ post-test effect size or a control-treatment effect size | Pre-test/ post-test -  No control used, same group measured twice  Control-treatment- no baseline, two groups with starting observation started at the same time  Difference in Difference -baseline for both control and treatment groups followed by treatment and measure of effect |
| Effect size - statistical estimate | Capture both the value of the relevant regression coefficient and the direction of the effect of the intervention (decrease/increase). |  |
|  | The variance is captured by the standard error of the coefficient (coefficient sd). Also capture the type of uncertainty measure provided (see right).  If a standard error is not provided use code -999 and use ‘not provided’ as the type | (standard error, standard deviation, robust standard errors, pooled standard errors)  -999; not provided |
|  | Also capture the t-statistic and the degrees of freedom (n-k-1) of the t-statistic.  If a study provides the coefficient and standard error, calculate the specific t-statistic (β/se) and use that to calculate a corresponding P-value.  If a study only provides the level of significance (no standard error, no t-statistic, no specific p-value) then capture the level of significance in the p-value field and calculate the t-statistic using the level of significance and mark it as a lower bound (if significant) or higher bound (if not significant) |  |
| Effect size - difference of means | Capture both the control and treatment group means where possible. Otherwise capture the difference along with the value of the relevant test statistic (t, Chi or F).  Calculate pooled standard deviation using the formula in Ringquist if required. |  |
| Sample Size | Capture as much detail as possible (i.e. if all three options are given, record all). Given that a specification can include multiple treatments, the sum of treatment and control sample sizes will not necessarily add to the total.  Studies may run analysis comparing treatment groups only to the control, or also to each other, capture elements    **Total** – Control and all treatments, full sample size (for pre-and post- treatment set-ups)  **Treatment** – Capture sample size for specific effect being captured (this should correspond to one treatment or combination of treatments)  **Control** – There is possibly only one control group for multiple treatments |  |
| Control Definition | List the controls are being used to better isolate the effect of the intervention. Besides the variable of interest (intervention) which elements that affect energy consumption are included.    Fixed effects and random effects for households or time effects should NOT be captured here. These should be captured in the statistical technique. Only include explicit weather or seasonal controls in the analysis. | **Weather controls** (heating degree days or cooling degree days, etc.)  **Seasonal controls** (monthly dummies or quarterly/seasonal dummies, etc)  **Energy prices**  **Residence controls** (physical nature of the house, size of house, appliance stock, etc.)  **Household controls** – demographic info (income, age, number of residents, education, etc.)  **Base energy consumption** |
| Geography and Aggregation Level | **Geographic scope** captures the area across which the intervention was carried out  Note: Try and stick to the options mentioned  **Geographic location** should mention the country where the intervention took place. Use commas to separate levels of detail if given.  Note: Try and stick to the format city, state, country  **Aggregation** level at which the data is being analyzed or recorded. Most should be household. | municipality, state, town, county  city, state, country |
| Baseline consumption | Enter the average consumption per annum of the households in the total sample if provided or if can be calculated  Rules for recording the baseline consumption:  **Which consumption?** If baseline data was collected and average consumption during that time is reported, record that. If baseline is not available, record the average consumption during the experiment.  **Whose consumption?** If average consumption of all households is mentioned, record that. If not, then the weighted average consumption of treatment and control group should be reported. If both the options are not possible, report the average consumption of the control group.  Preference order:   1. Average consumption of all households (T+C) during baseline period 2. Weighted average consumption of T and C during baseline period 3. Average consumption of all households (T+C) during the treatment period 4. Weighted average consumption of T and C during treatment period 5. Consumption of the control group |  |
| Randomization Method | Capture the level at which randomization was done - not done | Household level, block level, district level |
| Opt-in vs. Opt-outs | Were households first selected and then allowed to opt out of the intervention or were the households required to opt-in to the intervention or neither  Note: Choose Opt out (2) only when households are given an option to drop out of the experiment explicitly. If they move away or discontinue without being given an option go for (0). Write (1) when households have the option of choosing to not be a part of the experiment anymore. |  |

Intervention

| **Field Name** | **Explanation** | **Choices or Examples** |
| --- | --- | --- |
| Framing Unit | When participants are given information or feedback on their energy consumption, in what units/terms is this information given | Energy (kwh)  savings ($)  Co2  other efficiency (R-value)  other ecological |
| Timing/Frequency | What is the frequency at which the households are contacted to provide feedback/ information? Normally not applicable for pricing interventions. | Continuous (on-demand)  Monthly  Bi-weekly  One time only  Monthly or quarterly |
| Medium | How was the household contacted? Could be relevant for all types of interventions. |  |
| Duration | For how long did the intervention take place.  If intervention happens only once (e.g. one-time energy audits, or one-time mail brochures on energy saving, enter duration as zero).  Note: Data for duration should be in weeks where 1 month = 4 weeks and 1 year = 52 weeks |  |
| Follow-up | If study explores boomerang or fading effects with a measure of the effect after some time, capture how many weeks after intervention discontinuation this measure is taken.  If intervention is continued throughout the post study period and no variable captures a fading of the effect then follow-up is 0. |  |
| Intervention types and sub-types\* | We look at five broad intervention types: Information, Feedback, Monetary Incentives, Social Comparison and Motivation | Information: home audits, tips,  Feedback:historical, enhanced billing, in-home display  Social comparison: peer comparison, HER  Monetary Incentives: Rewards, ToU, Real-time Pricing, Dynamic Pricing, Peak Load Pricing  Motivation: Gamification, commitments, goal setting |

\* When describing the intervention associated with a treatment effect record the elements that are different from the control group. E.g. if the entire population has smart meters with an in-home display, and the treatment group is receiving an additional health framing feedback via sms, then capture only the health framing feedback, exclude the in-home display.