



CASE STUDY: TRANSITIONING TRACKERS SHOPPER TRENDS

TRANSITION TRACKERS: MINIMIZING DISRUPTION

When transitioning trackers, the goal is to minimize disruptions to the data and the ability to trend back to previous waves. With proper treatment, differences in the data after transitioning can be confidently attributed to population shifts rather than changes in sample sources and/or methodology. Toluna has developed a process to transition trackers via an impact analysis, in which the effect of the transition is accounted for and quantified. This maximizes the ability to continue trending the data without disruptions. In 2017, Toluna transitioned a 'large multi-geography' tracker to its online panel, and this paper details the processes of transitioning the study.

The ideal process for transitioning a tracker from one supplier to another and/or one methodology to another is a parallel test. A parallel test involves collecting data from the original supplier or via the original methodology while simultaneously collecting data from Toluna's panel. The procedures for data collection should be matched as closely as possible during fieldwork, including timing of interviews, quotas, sample size, etc. A parallel test allows Toluna to ensure that any discrepancies present in the two samples are a result of the change in suppliers and/or methodology and not a result of changes waves due to behavioral or attitudinal changes in the population studied. For trackers in multiple markets, it is possible to group markets together by size, demographics, region, and other variables to identify one pilot to test as an alternative to testing every market. A parallel test is strongly recommended when changing methodologies and preferred when changing suppliers. If cost and time considerations prevent a parallel test, data may be exclusively from Toluna's online panel and compared with historical data from other suppliers and/or other methodologies.

LARGE MULTI-GEOGRAPHY PARALLEL TEST

For the 'large multi-geography' project, Toluna and our client chose to utilize historical data from the tracker rather than run a full parallel test. This was determined to be an appropriate solution by all parties due to the high qualifying rate of the study, the topics covered, and previous studies demonstrating the similarity between Toluna's panel and the current provider.

Data Collection

Historical data from 2015-2017 were compared to data collected from Toluna's panel in May 2017. Twelve pilot countries were identified and tested out of 17 total markets. These countries were identified based on criteria including region, population, size of Toluna's panel, and desire of local stakeholders to include their market in the initial test. To collect data from Toluna's panel to compare to historical data, Toluna recommended a sample size of 70% of the sample size collected in a full wave. This still provides a large enough dataset to adequately test any differences while providing substantial cost savings. The time in field in each market varied from 2-3 weeks depending on the market. The average length of interview was 35 minutes, and the incidence rate was between 80-90%.



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Impact Analysis

After data collection, Toluna conducted an impact analysis to determine whether any discrepancies existed between the two samples and, if so, what was needed to correct them. This began with reviewing comparison tables of Toluna's panel compared to historical data with significance testing at the 95% confidence level. Significant differences in demographic variables 'large multi-geography' project, minimal significant differences were detected from the comparison tables between the historical data and the data collected from Toluna's panel. Some of the key demographic variables compared across all markets were education level, number of individuals in the household, and income.

Behavioral variables compared across all markets included stores visited most frequently, average spend per visit across each shopping category, whether or not respondents had visited a new store in the past 6 months and what triggered a visit, and usage and openness to store brands..

Propensity Scores

After reviewing the comparison tables, Toluna conducted propensity scoring on the two samples. Propensity scoring utilizes a logistic regression model to determine which variables, if any, significantly predict whether a respondent belongs to the original supplier or Toluna's panel. The dependent/outcome variable is binary and takes the value of the sample to which a respondent belongs. For example, a respondent from Toluna's panel may have a value of 1 and a respondent from the original supplier may have a value of 0. The independent variables consist of other variables from the dataset, including demographic variables, key metrics from the tracker, and any other variables that significantly predict the outcome.

Once any statistically significant variables have been identified and a final statistical model selected, the distributional overlap of the two samples is plotted and significance testing applied. The distributional overlap measures the commonality and the coherence between the two groups. If the distributional overlap of the samples has no statistically significant differences, then the tracker can be entirely transitioned with no adjustments to quotas, no weighting, and no gradual transition plan needed. If the distributional overlap of the two samples do show statistically significant differences, the impact of these differences on the transition plan is evaluated. Minor differences can often be accounted for with slight adjustments to quotas, an adjustment for weighting in certain demographic variables, or the application of propensity weighting based on the previously conducted propensity scoring. Larger differences may result in a recommendation of a slower transition from the original supplier to Toluna's panel along with recommended weighting. If the differences cannot be controlled with a full transition, a mixed methodology may be recommended to ensure data consistency, in which only a portion of the sample is transitioned to Toluna's panel. This is unlikely when transitioning suppliers, but when transitioning methodologies, particularly in emerging markets, a more gradual plan may be recommended.



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After conducting propensity scoring, Toluna found that only 2 of the 12 markets had statistically significant differences in the distributional overlap. All other markets had no statistically significant differences in the sample overlap and were cleared to transition to Toluna's online panel entirely in the next wave.

When conducting propensity scoring for a specific country, the following variables were included in the propensity model as statistically significant indicators for whether a respondent was from Toluna's panel or historical data:

- Convenience stores visited most often
- Closest store geographically
- Convenience stores visited most often
- Closest store geographically
- Perception of store
- Behavior toward new store (why visited)
- Behavior toward changing brands when purchasing goods
- Supermarkets visited most often
- Perceptions of supermarkets
- Marital status
- Education
- Household income

When conducting propensity scoring for Country 2, the following variables were included in the propensity model as statistically significant indicators for whether a respondent was from Toluna's panel or historical data:

- Effect of promotions on shopping behavior
- Education
- Types of stores visited
- Likelihood of changing brands/grocery items



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- Preference intensity for current store
- Willingness to travel to store
- Grocery shopping behavioral attribute battery
- Familiarity with prices of regularly purchased items
- Marital status
- Income
- Preferred store to shop in

Conclusion

The two markets with significant overlap were able to be corrected with a propensity weighting scheme. Once applied, the distributional overlap between the two samples was no longer significant. The weighting scheme was applied based on the variables in each of the respective propensity models. Each respondent is assigned a single propensity weight based on their responses to each of the variables included in the propensity model. Once applied, the two samples performed similarly. The markets were still able to be transitioned entirely in the next wave. After an additional wave of the project is collected, the propensity weighting should be evaluated as to whether it is still necessary. This is particularly appropriate since the fieldwork for the parallel tests did not overlap with the normal time in which the fieldwork for this project occurs. If the two samples perform similarly after examining the comparison tables and the application of the propensity weighting does not diminish any differences between the samples, it can be discontinued. This can likely occur within 3-4 additional waves of the project.

With measures taken, any tracking study can parse the way for a smooth transition