# Dummy Outcome Refuter

The dummy outcome refuter tests: What happens to the estimated causal effect when we replace the true outcome variable with an independent random variable? (Hint: The effect should go to zero) In addition, an extension of the test can also check for any simulated outcome where the causal effect need not be zero: What happens to the estimated causal effect when we replace the outcome with a simulated outcome based on a known data-generating process closest to the given dataset? (Hint: It should match the effect parameter from the data-generating process)

## Testing for zero causal effect

```
>>> ref = model.refute_estimate(identified_estimand,
>>>                             causal_estimate,
>>>                             method_name="dummy_outcome_refuter"
>>>                             )
>>> print(ref[0])
```

## Testing for non-zero causal effect

```
>>> coefficients = np.array([1,2])
>>> bias = 3
>>> def linear_gen(df):
>>>     y_new = np.dot(df[['W0','W1']].values,coefficients) + 3
>>>     return y_new
```

```
>>> ref = model.refute_estimate(identified_estimand,
>>>                             causal_estimate,
>>>                             method_name="dummy_outcome_refuter",
>>>                             outcome_function=linear_gen
>>>                             )
>>> print(ref[0])
```

Skip to main content

For a complete example on using the dummy outcome refuter, you can check out the notebook, A Simple Example on Creating a Custom Refutation Using User-Defined Outcome Functions.

Previous
Placebo Treatment Refuter

Next
Random Common Cause Refuter