

# US Pharma Leader Uses AI-Powered Conjoint to Forecast Vaccine Preferences

Four-country survey finds preferences and forecasts demands for vital drugs

As we've seen in the COVID-19 crisis, preparedness is key when dealing with serious medical outbreaks. Our client, a U.S.-based vaccine manufacturer, wanted to examine vaccine usage at leading medical institutions in Brazil, India, Indonesia, and Thailand. The goal was to understand the preference for one of the two vaccines in different situations and forecast the likelihood of purchase with different attributes and levels.



## A Detailed Look into Prescription Preferences

After surveying doctors, government medical institutions, and other relevant decision-makers, our client wanted to use this knowledge to:



Estimate the demand for the product alone and paired with another vaccine



Find the overall preference for the drug and its attributes



Measure the preference given to each of the two products, assuming both are available



Establish links between product attributes and preference



Find the probability of each of two products being purchased with different attributes and levels

To accomplish this, we used survey data and an ACA (Adaptive Conjoint Analysis) conjoint model to capture preference.

## Can Conjoint Predict Vaccine Usage?

Using an online survey, we posed questions about each attribute of the vaccine and used this information to set attributes' relative importance. Respondents were asked to trade off bundled attributes (e.g. less efficacy and shorter duration for a cheaper per-dose price vs. higher efficacy and longer duration for a considerably higher cost per dose). They were also given a choice set to determine which vaccines they would use in various scenarios.



Multiple regression models were used to quantify the impact of each attribute. We also calculated the preference and probabilities for each attribute and product level. The result?

## Simulator Forecasts Vaccine Preferences and Probabilities

The above inputs were used to develop an Excel-based simulator that the client can use to generate the probability and preference for each product – vital information for producing and preparing these essential medications.