

Practical Application of Discrete Choice Methodology in Public Opinion Research

December 2012



Outline – Learning Objectives

I. What is Discrete Choice Methodology?

- a. Common Types of Discrete Choice Models
- b. What Each Type is Used For

II. Why should I use Discrete Choice Models?

- a. Scale Effects Reduction
- b. Force discrimination/tradeoff
- c. Mimic Real Life Choices

III. Practical Example

- a. Health Care Insurance Purchase
- b. Examples of What They Look Like

IV. Example of Results

- a. Average Utility and Importance
- b. TURF and Market Simulator

Discrete Choice Methodology

Discrete = Set levels or Packages, Not a Scale

Choice = Let's Them Pick Among the Options

Common Types

- Maximum Difference
- Choice Based Conjoint
- Adaptive Choice Based Conjoint
- Menu Based Conjoint

Maximum Difference


Start
▶
 Finish

Below are several issues or reasons you might have for communicating or interacting with Wal-Mart Pharmacy. Thinking about your pharmacy needs, select the:

- ONE issue that is MOST IMPORTANT for you to resolve
- ONE issue that is LEAST IMPORTANT for you to resolve.

Set 1 of 8

MOST IMPORTANT to resolve	Issues or Reasons You Might Have for Communicating with Wal-Mart Pharmacy	LEAST IMPORTANT to resolve
(q7_1_1:14) <input type="radio"/>	You have general questions about the Wal-Mart Pharmacy (i.e. hours of operation, address, etc.)	(q7_1_2:14) <input type="radio"/>
(q7_1_1:13) <input type="radio"/>	You have questions about insurance or Medicare or Medicaid coverage	(q7_1_2:13) <input type="radio"/>
(q7_1_1:12) <input type="radio"/>	You have general questions about medications	(q7_1_2:12) <input type="radio"/>
(q7_1_1:11) <input type="radio"/>	You want to place an order for a new prescription	(q7_1_2:11) <input type="radio"/>



BACK **NEXT**

DURING THE SURVEY, PLEASE DO NOT USE YOUR BROWSER'S "FORWARD" AND "BACK" BUTTONS. TO MOVE THROUGH THE SURVEY, USE THE "BACK" AND "NEXT" BUTTONS AT THE BOTTOM OF EACH PAGE. AT THE END OF THE SURVEY CLICK THE "DONE" BUTTON TO SUBMIT YOUR SURVEY.

Choice Based Conjoint

Which one of the following Side-by-Side Utility Vehicles would you be most likely to buy if they were your only choices?



Yamaha Rhino 700
686cc Single Cylinder
Cargo Capacity: 400 lbs.
Towing Capacity: 1,212 lbs.
Ground Clearance: 12.1 inches
Length: 113.6 inches
Width: 54.4 inches
2 Passenger Bucket Seats
Tilt Bed
Four Wheel Drive

\$9,499



Polaris Ranger 700 XP
683cc Twin Cylinder
Cargo Capacity: 1,000 lbs.
Towing Capacity: 2,000 lbs.
Ground Clearance: 11.0 inches
Length: 113.0 inches
Width: 60.0 inches
3 Passenger Bench Seat
Tilt Bed
Four Wheel Drive

\$10,999



Honda Big Red
675cc Single Cylinder
Cargo Capacity: 500 lbs.
Towing Capacity: 1,000 lbs.
Ground Clearance: 10.4 inches
Length: 114.2 inches
Width: 64.4 inches
2 Passenger Bucket Seats
Tilt Bed
Four Wheel Drive

\$11,999

I wouldn't buy any of these Side-by-Side Utility Vehicles.

Adaptive Choice Based Conjoint

Please assume you were in the market to buy a home. If these were the available options, what home would you be most likely to buy?

As you select different options, the total price of the home will change. When you have finished choosing the home that suits you best, click the Next button to continue.

Feature	Select Option	Option Price
Size of Home	3000 Square Feet \$506,250	\$ 506,250
Eco-Friendly Features	Standard construction & efficiency	\$ 0
Bedroom/Bathroom Configuration	4 bedrooms, 3.5 baths (+ \$12,500)	\$ 12,500
Master Bath	Medium master bath (separate shower and tub), one walk-in closet	\$ 0
Garage	3-car garage (+ \$12,500)	\$ 12,500
Lot	Select Option	\$
Schools	Select Option Small lot (0.2 acres) (subtract \$25,000) Medium lot (0.35 acres) Large lot (0.5 acres) (+ \$25,000)	\$
Finish	Select Option	\$
Age of Home	Select Option	\$
Total:		\$ 531,250

Here are a few homes you might like. Do any of these look like they are possibilities? It's helpful if you can keep about half of them for further consideration. But, it's up to you.

(1 of 6)

1750 Square Feet	3000 Square Feet	3000 Square Feet	4000 Square Feet
Standard construction & efficiency	Standard construction & efficiency	Built green certification & superior efficiency	Standard construction & efficiency
4 bedrooms, 3.5 baths	4 bedrooms, 3.5 baths	4 bedrooms, 3.5 baths	3 bedrooms, 2.5 baths
Large master bath (separate shower & deep soaking tub), two walk-in closets	Medium master bath (separate shower and tub), one walk-in closet	Medium master bath (separate shower and tub), one walk-in closet	Medium master bath (separate shower and tub), one walk-in closet
2-car garage	3-car garage	3-car garage	3-car garage
Medium lot (0.35 acres)	Large lot (0.5 acres)	Medium lot (0.35 acres)	Medium lot (0.35 acres)
Local schools ranked in middle third of nation	Local schools ranked in bottom third of nation	Local schools ranked in top third of nation	Local schools ranked in middle third of nation
Upgraded finish package (floors, countertops, millwork, fixtures)	Upgraded finish package (floors, countertops, millwork, fixtures)	Standard finish package (floors, countertops, millwork, fixtures)	Standard finish package (floors, countertops, millwork, fixtures)
Home built in 1990	Home built in 2000	Home built in 2000	Home built in 1990
\$380,750	\$472,750	\$636,500	\$623,500
<input type="radio"/> A possibility <input type="radio"/> Won't work for me	<input type="radio"/> A possibility <input type="radio"/> Won't work for me	<input type="radio"/> A possibility <input type="radio"/> Won't work for me	<input type="radio"/> A possibility <input type="radio"/> Won't work for me

Among these three, which is the best option? (We've grayed out any features that are the same, so you can just focus on the differences.)

(4 of 8)

2250 Square Feet	2250 Square Feet	2250 Square Feet
Standard construction & efficiency	Standard construction & efficiency	Standard construction & efficiency
3 bedrooms, 3 baths	5 bedrooms, 3.5 baths	3 bedrooms, 3 baths
Small master bath (integrated shower/tub), small walk-in closet	Large master bath (separate shower & deep soaking tub), two walk-in closets	Medium master bath (separate shower and tub), one walk-in closet
2-car garage	3-car garage	2-car garage
Medium lot (0.35 acres)	Medium lot (0.35 acres)	Medium lot (0.35 acres)
Local schools ranked in middle third of nation	Local schools ranked in middle third of nation	Local schools ranked in bottom third of nation
Upgraded finish package (floors, countertops, millwork, fixtures)	Premium finish package (floors, countertops, millwork, fixtures)	Standard finish package (floors, countertops, millwork, fixtures)
New home	Home built in 1990	Home built in 1990
\$372,000	\$539,000	\$374,000
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

How likely would you be to purchase this laptop?

* This is the original laptop you configured *

Size	15 inch screen, 6 lbs.			
Brand	Dell			
Processor	Intel Core 2 Duo T7400 (2.16GHZ)			
Operating System	Vista Home Premium			
Memory	1 GB			
Hard Drive	100 GB			
Video Card	128 MB Video card, adequate for most use			
Battery	3 hours			
Productivity Software	Microsoft Office Small Business (Basic + PowerPoint, Publisher)			
Price	\$1,550			
Definitely Would Not	Probably Would Not	Might or Might Not	Probably Would	Definitely Would
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Next

Advantages of Discrete Choice

- No Scale Bias
 - Fairly Comparable across Cultures
- Rooted in Choice Theory
 - Utilities follow basic economic principles and work with pricing models
 - Easy to make demand curves
- Forces Trade-off from the Respondents
 - Can't save your cake and eat it too
- Mimics Decisions made in Real Life
 - Easier for Respondents to complete and more enjoyable

Our Example

Starting in 2014 the individual mandate of PPACA kicks in

- How is this going to affect the market?
 - Governmental Ratings
- What percent of people will just pay the tax?
 - How about in 2016 when the penalties increase substantially
- How can we get more people to buy insurance?
 - Messaging of Advantages



Caution

- NOT a representative set of the population
 - Only 400 people
 - Screened for Self-Insurance or No Insurance
- Good Demonstration of the Techniques
- Most Conjoint Exercises Assume
 - Equal Access
 - Equal Information
- Still Useful Information and Hopefully Fun!

Practical Implementation (Realistic)

Thank you. We are looking to see what people like you are going to do when the new health care laws under the Patient Protection and Affordable Care Act (PPACA) are put in place over the next few years. You will see a few options on how much the health insurance might cost in your state exchange and the tax penalty of remaining uninsured. On each screen select the health insurance option that is most appealing. Then assuming these are your only options select if you would actually purchase that health insurance or if you would just pay the federal tax penalty for remaining uninsured. If you do not understand some of the terms please click [here](#) for an explanation of each term.

Governmental Rating	Bronze	Silver	Gold	Platinum
Plan Type	HMO	HMO	PPO	PPO
Deductible	\$1,000	\$2,500	\$5,000	\$500
Coinsurance	0%	25%	15%	10%
Prescription Coverage	None	\$10/\$40	\$10/\$40	\$25/\$75
Original Monthly Premium	\$532.00	\$396.00	\$360.00	\$648.00
Monthly Government Tax Credit	-\$330	-\$330	-\$330	-\$330
Final Monthly Premium	\$202.00	\$66.00	\$30.00	\$318.00
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Given what you know about the market, would you really buy the health insurance you chose above?

- I would purchase the health plan above
 I would not purchase insurance and pay the \$220 tax one time

Practical Implementation (Informative)

Governmental Rating – These are ratings produced by the government which indicate how good of a deal an insurance plan is based solely on how much of the premiums are directly paid to participants health care bills

- **Bronze** – 60% of the premiums directly pay health care bills
- **Silver** – 70% of the premiums directly pay health care bills
- **Gold** – 80% of the premiums directly pay health care bills
- **Platinum** – 90% of the premiums directly pay health care bills

Plan Type – This is the type of insurance plan you would have and can influence your choice of doctors.

- **HMO** – In order to be covered by insurance you must go to an in-network physician. Also to see a specialist you must first get approval from your primary care physician.
- **PPO** – While you can go to an out-of-network physician, you will be covered at a much lower rate than seeing an in-network physician. You can also see a specialist without prior approval from you primary care physician.

Deductible – This is how much you need to pay in health care costs before the insurance starts to pay a portion of your health care bills.

Coinsurance – This is the percent of your health care bills that you have to pay after the deductible is met. For example, if you have a \$500 deductible and a 50% coinsurance and a hospital bill came in for \$2,000 you would pay \$500 for the deductible and then 50% of the remaining \$1,500 (\$750) for a total of \$1,250.

Prescription Coverage – This is the insurance on prescription medication that you would get from a pharmacy.

- **None** – You pay the full price for any prescription medication you need.
- **\$10/\$40** – You pay \$10 for a prescription of a generic brand of medication and \$40 for a prescription of specific brand name. The insurance covers the rest of the costs.
- **\$25/\$75** – You pay \$25 for a prescription of a generic brand of medication and \$75 for a prescription of specific brand name. The insurance covers the rest of the costs.

Original Monthly Premium – This is how much the insurance company would charge per month for providing insurance.

Monthly Government Tax Credit – Based on your family size, age, and income this is how much the government will pay the insurance company for your health care if you choose to purchase health insurance. You will not see this money as it goes directly to the insurance company to pay for your health care premiums. You also do not get any of extra money if the tax credit exceeds the health insurance premiums.

Final Monthly Premium – This would be the cost that you would have to pay every month to have this health insurance for everyone in your household.

Practical Implementation (Benchmark)

In each of the following screen please select the benefit that is most and least appealing to owning insurance. Then select whether the benefits outweigh the costs that you saw in the previous tasks.

Considering only these 4 benefits, which is the Most Appealing and which is the Least Appealing?

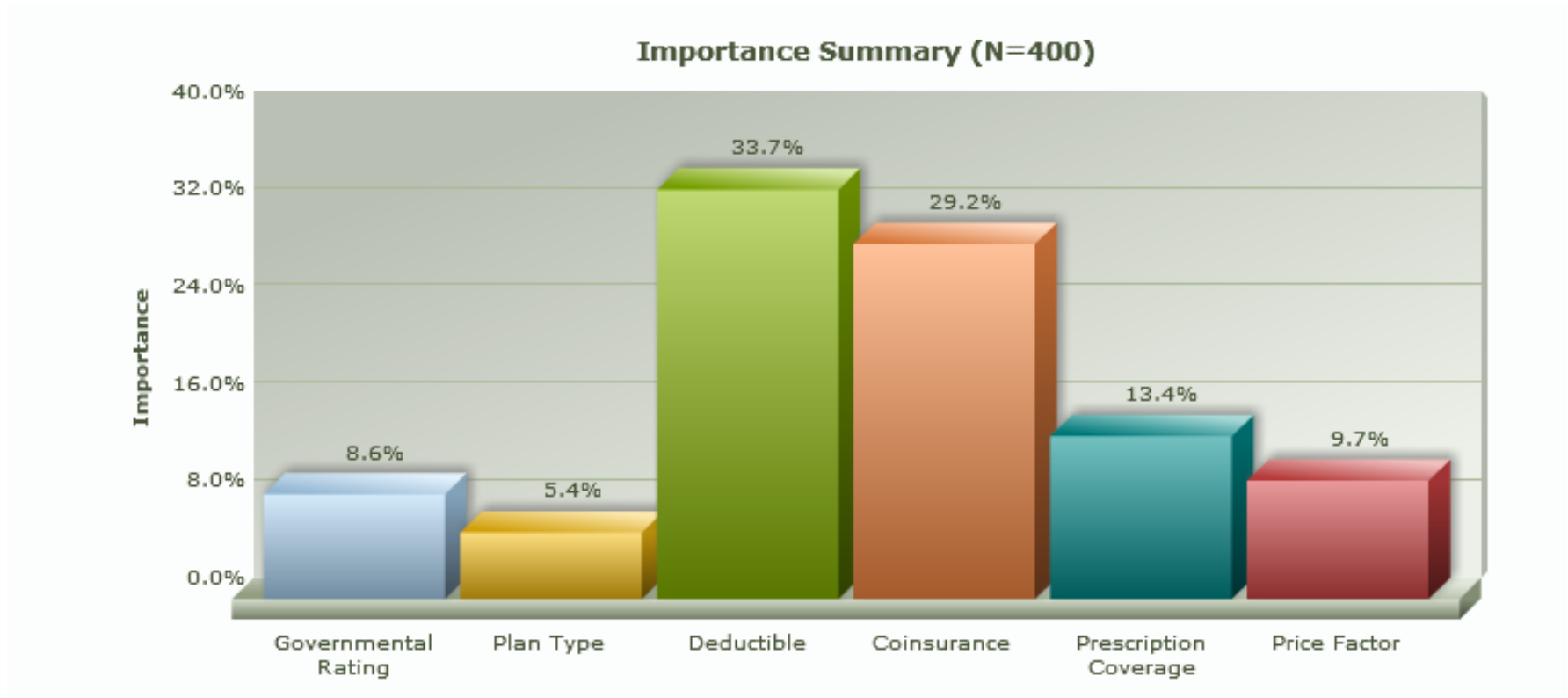
Most Appealing		Least Appealing
<input type="radio"/>	Save me money over the long run	<input type="radio"/>
<input type="radio"/>	I am able to develop a relationship with a doctor I trust and who knows me personally	<input type="radio"/>
<input type="radio"/>	I feel safer in general	<input type="radio"/>
<input type="radio"/>	Allows me to afford needed prescription medication for me or my family	<input type="radio"/>

Considering the 4 benefits above and the 2014 costs I have seen recently

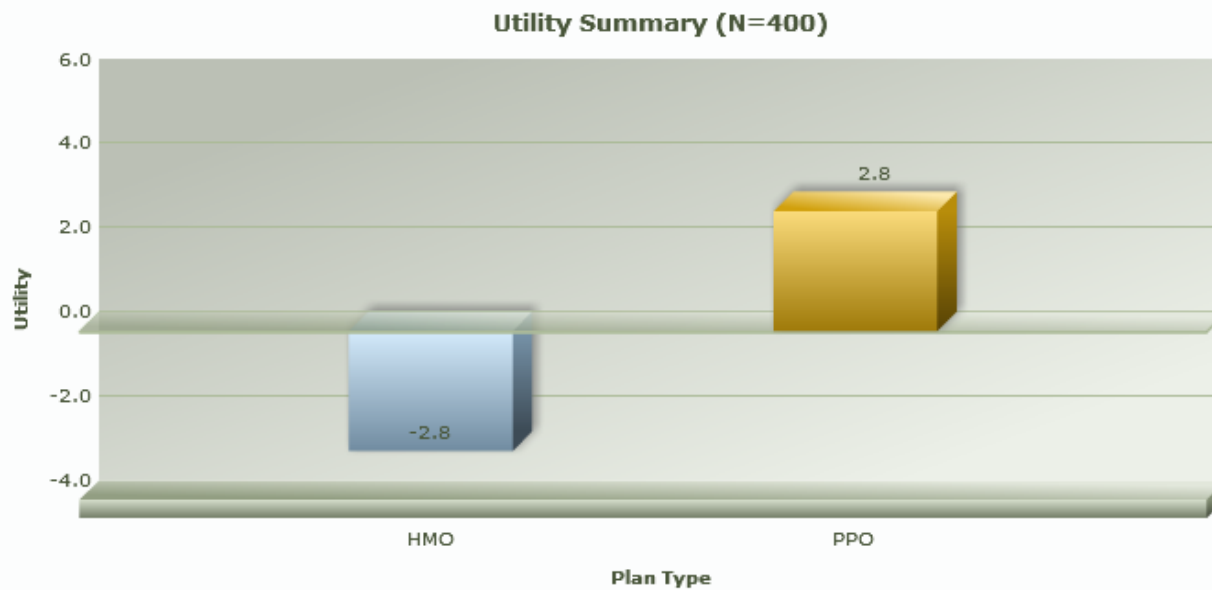
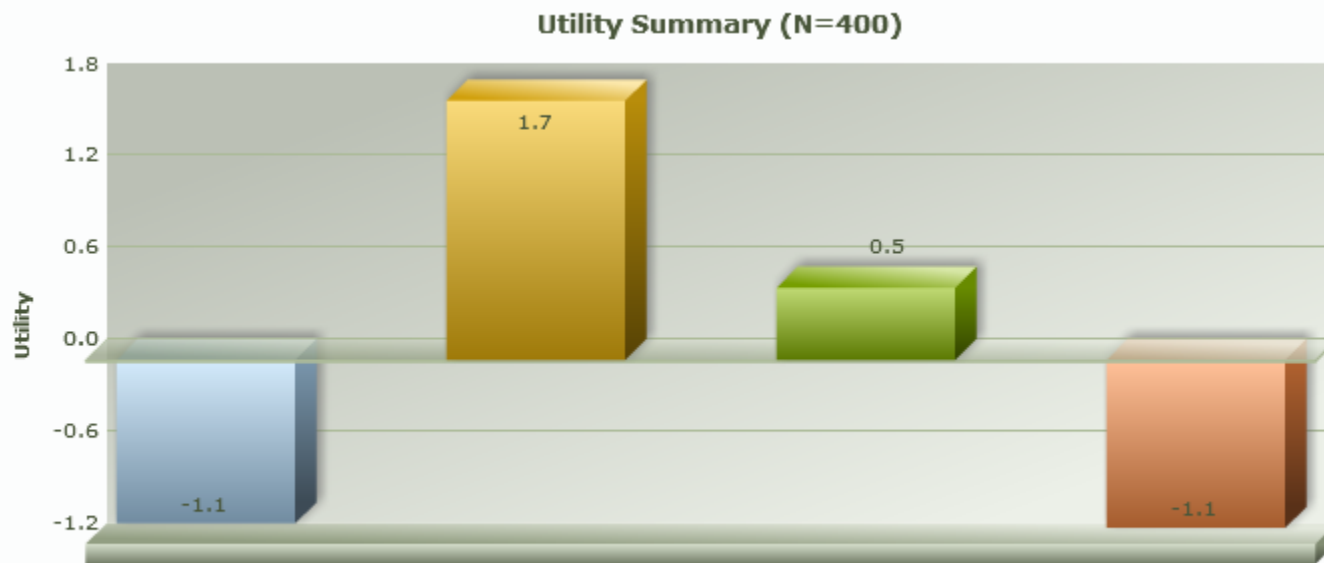
- Any of them would convince me to get health insurance
- Some but not all of them would convince me to get health insurance
- None of them would convince me to get health insurance



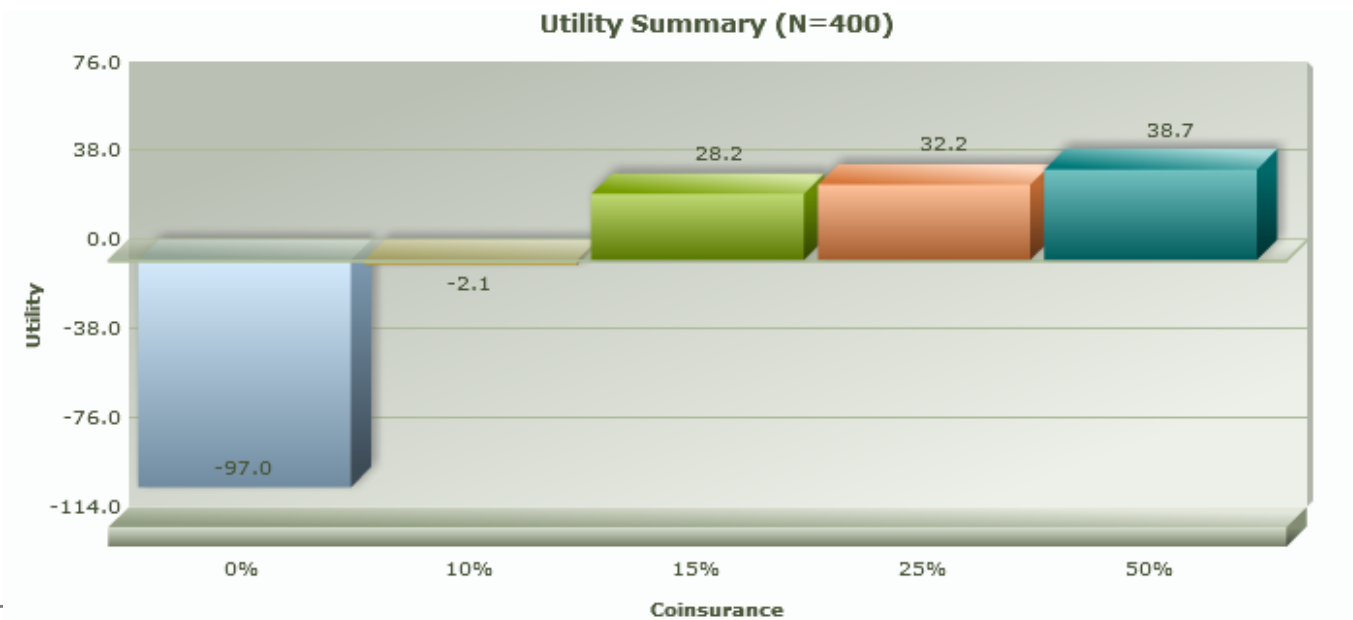
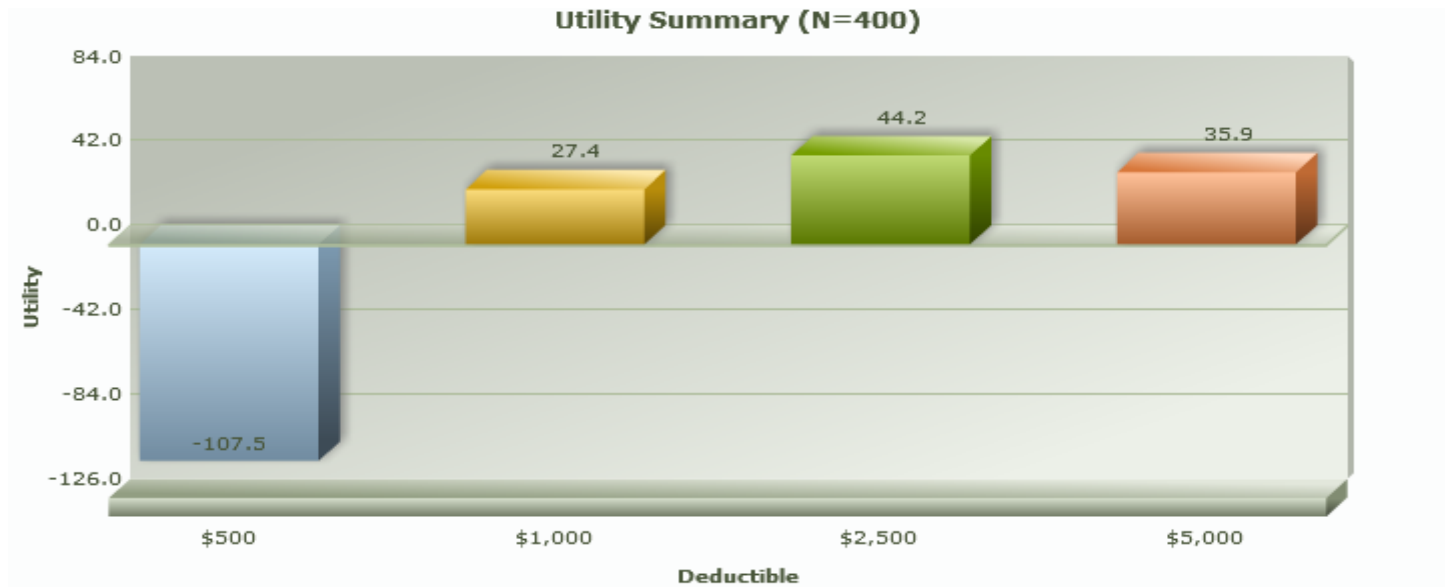
Results (Importance)



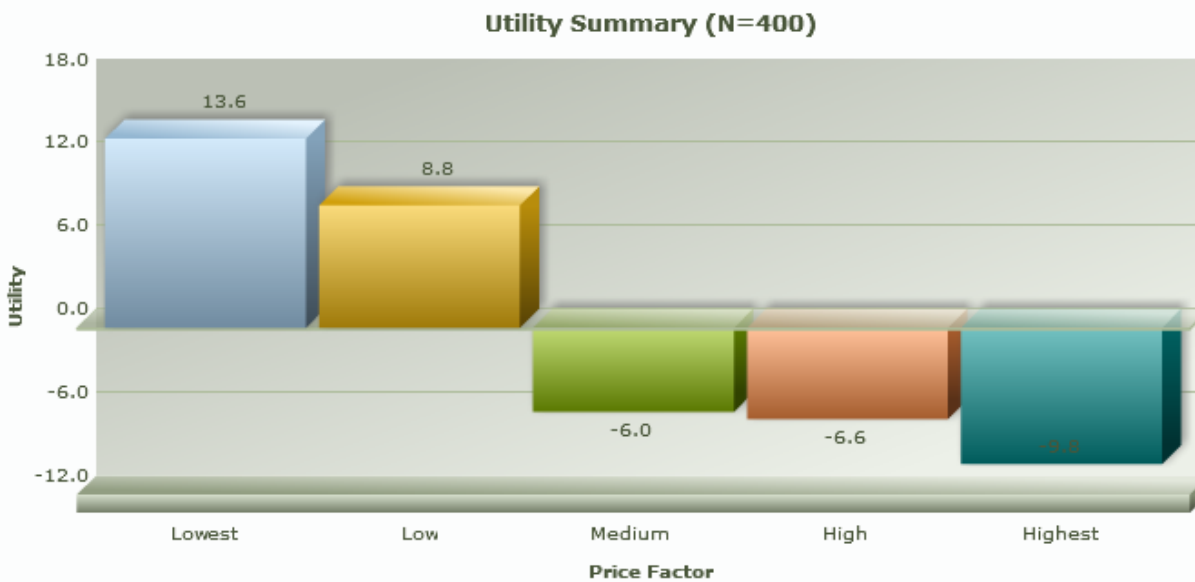
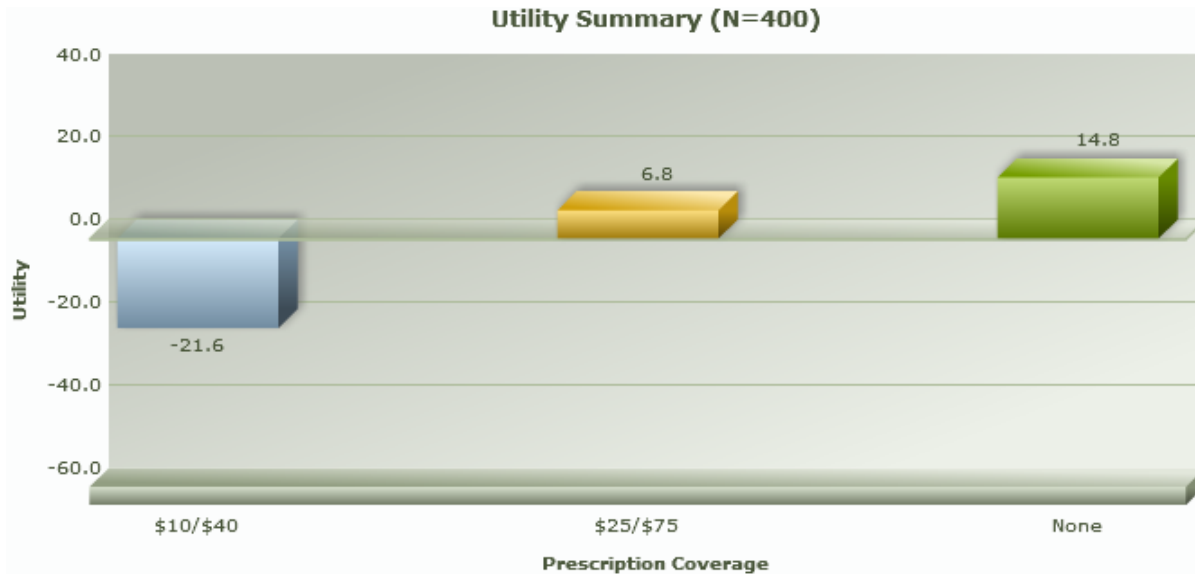
Results (Utility Comparison)



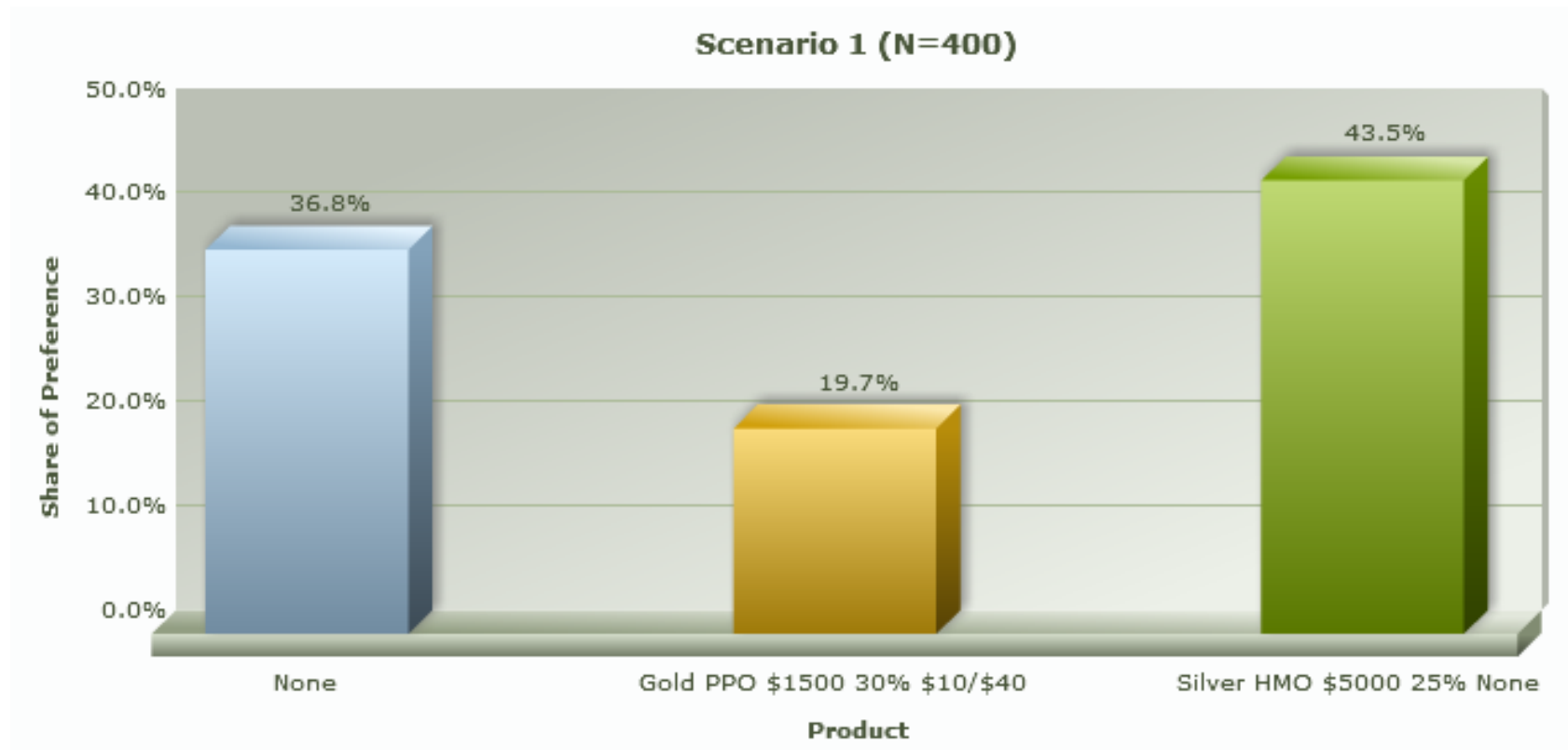
Results (Utility Comparison)



Results (Utility Comparison)



Results (Simulator)



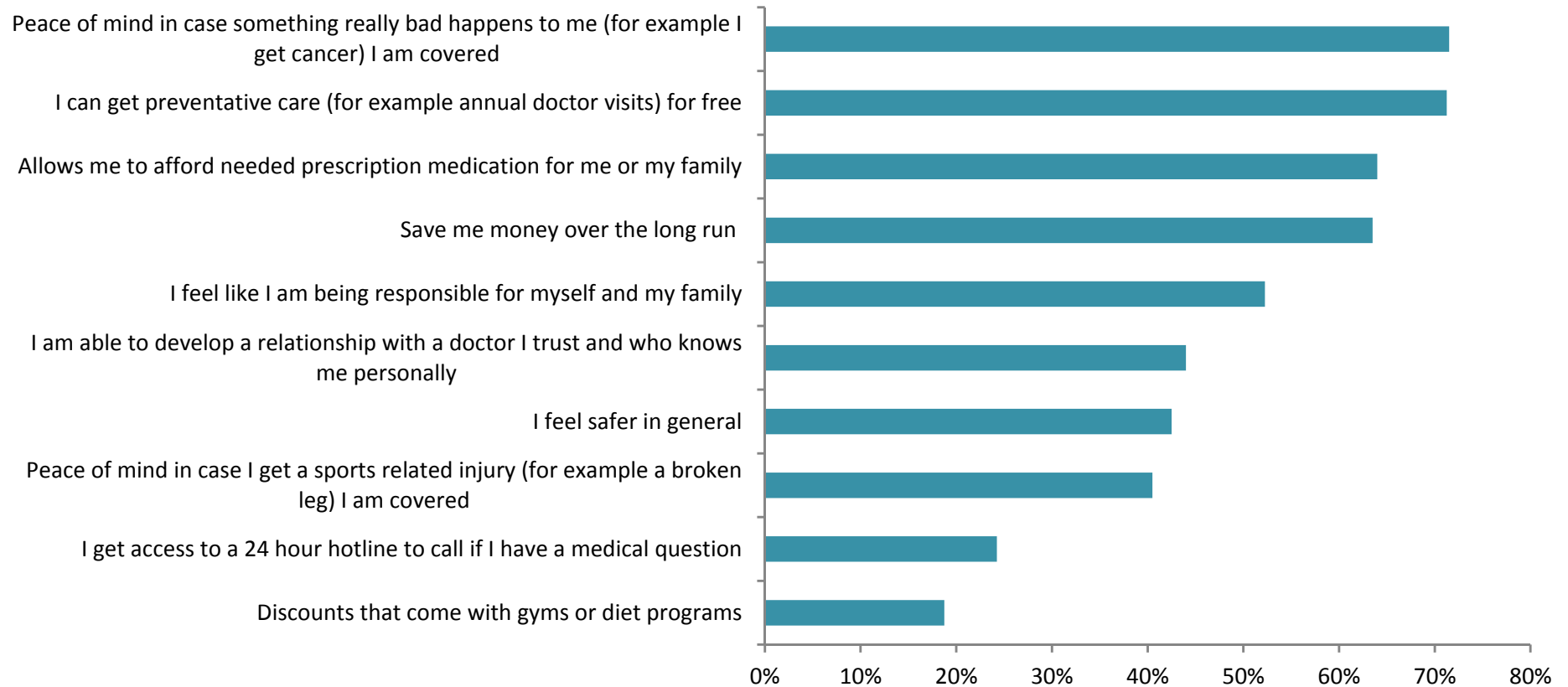
Results (Relative Motivators)

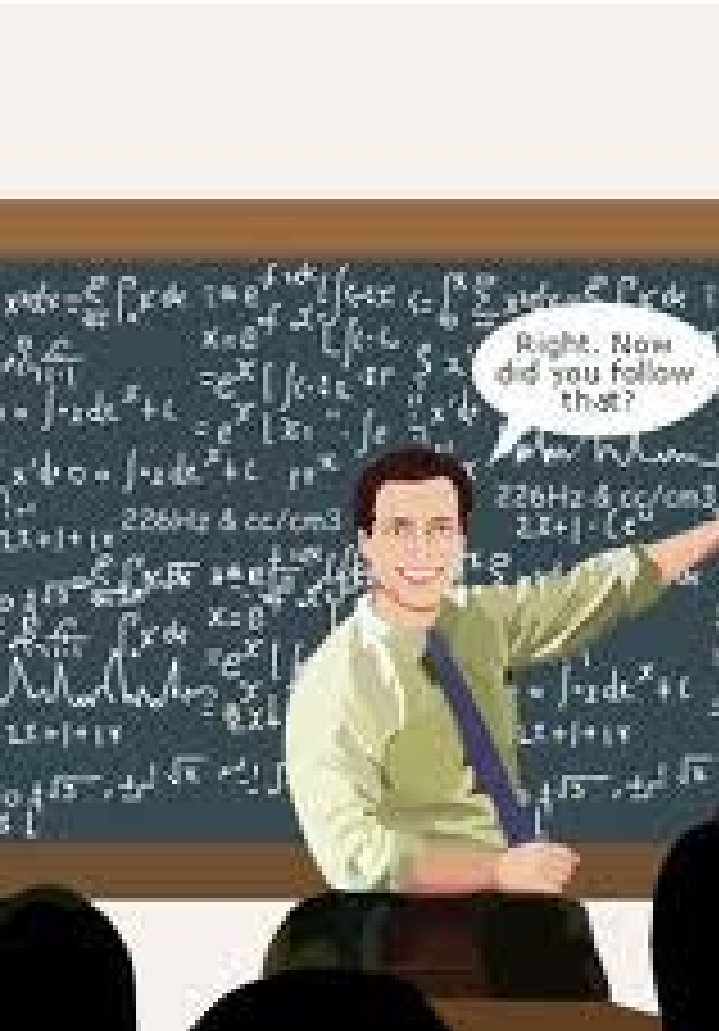
Relative Strength of Each Reason



Results (Compared to Benchmark)

Percent of Sample Persuaded to Buy Insurance





Questions?

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