



Creating a Simple Choice Simulator

Tutorial

Time: 15 minutes
Skill level: High
Editions: Reader, Basic,
Professional


Learning objective(s)

- ⇒ Understanding conjoint outputs
- ⇒ Creating a simple simulator for the MNL model

Illustrative problem

A choice-based conjoint study (discrete choice experiment) has been conducted. There is a need to simulate scenarios of interest.

Activities

1. Open `C:\Program Files\Q\Examples\Eggs.Q`
2. Select **Choices** in the blue drop-down menu
3. Press  to place the contents of the table in the clipboard
4. Create a new workbook in Excel
5. Select cell `A1` of `Sheet 1` and Paste (**Ctrl-V**)
6. In cells `G4:I4` enter `Alternative A`, `Alternative B` and `Alternative C`
7. In cells `F5:F11` enter `Weight`, `Organic`, `Charity`, `Quality`, `Uniformity`, `Feed` and `Price`
8. Create a drop-down for *Weight* in cell `G5` as follows:
 - a. Select the cell.
 - b. From the **Data** menu (or ribbon) select **Data Validation**.
 - c. In the **Allow** drop-down select **List**.
 - d. In the **Source** drop-down select the range of cells `A6:A9` (i.e., the different weights).
 - e. Press **OK**.
 - f. The cell should now contain its own drop-down menu; select the first thing in the menu.
9. Create drop-downs for all the remaining attributes, bar price, in cells `G6:G10`, repeating the steps followed to construct the *weight* drop-down menu.
10. In cell `G11` type: `$3.00`
11. Copy and paste the contents of cells `F5:F11` to `F17:F23`

12. Enter Share in cell F12

13. Enter Total in cell F24

14. In each of the following cells, enter the following formulas:

- a. G17: =INDEX (\$B\$6:\$B\$9, MATCH (G5, \$A\$6:\$A\$9, 0))
- b. G18: =INDEX (\$B\$10:\$B\$11, MATCH (G6, \$A\$10:\$A\$11, 0))
- c. G19: =INDEX (\$B\$12:\$B\$13, MATCH (G7, \$A\$12:\$A\$13, 0))
- d. G20: =INDEX (\$B\$14:\$B\$16, MATCH (G8, \$A\$14:\$A\$16, 0))
- e. G21: =INDEX (\$B\$17:\$B\$18, MATCH (G9, \$A\$17:\$A\$18, 0))
- f. G22: =INDEX (\$B\$19:\$B\$21, MATCH (G10, \$A\$19:\$A\$21, 0))
- g. G23: =G11*\$B\$22
- h. G24: =SUM (G17:G23)
- i. G25: =exp (G24)
- j. G12: =G25/\$F\$25

15. Format cell G12 as a percentage

16. Copy and paste the contents of cells G5:G25 to G5:I25

17. In cell F25 enter =SUM (G25:I25)

18. Check that your screen is as below:

	A	B	C	D	E	F	G	H	I	J	K
1	Choices										
2		Coefficient									
3	A	0									
4	B	0.072131					Alternative A	Alternative B	Alternative C		
5	C	-0.00888				Weight	55g	55g	55g		
6	55g	0				Organic	BLANK	BLANK	BLANK		
7	60g	0.43085				Charity	BLANK	BLANK	BLANK		
8	65g	0.552569				Quality	Fresh Eggs	Fresh Eggs	Fresh Eggs (Caged)		
9	70g	0.762718				Uniformity	All eggs appear the same	All eggs appear the same	All eggs appear the same		
10	BLANK	0				Feed	BLANK	BLANK	BLANK		
11	Antibiotic and hormone free	0.235252				Price	\$3.00	\$3.00	\$3.00		
12	BLANK	0				Share	33%	33%	33%		
13	10% of Revenue donated to RSPCA	0.319099									
14	Fresh Eggs (Caged)	0									
15	Barn Raised	0.741337									
16	Free Range	1.440094									
17	All eggs appear the same	0				Weight	0	0	0		
18	Some eggs appear different (e.g. Shell Colour)	0.027284				Organic	0	0	0		
19	BLANK	0				Charity	0	0	0		
20	Fed on grain and fish (high in Omega)	0.161681				Quality	0	0	0		
21	Fed only on vegetables	-0.01519				Uniformity	0	0	0		
22	Price	-0.80294				Feed	0	0	0		
23	Total sample; Unweighted; base n = 380					Price	-2.40882	-2.40882	-2.40882		
24						Total	-2.40882	-2.40882	-2.40882		
25							0.2697652	0.089922	0.089922	0.089922	

19. Cells F4 : I12 contain your simulator. Currently, it shows that three identical packs of eggs each get the same market share (33%). Change the price (by entering new prices in the cells) and attribute levels (using the drop-down menus you have created) to understand the impact on preference share.