Consider the simple example of electric car ownership. The associated contingency table is the following for questions 1 to 3:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Age | | |  |
|  | 20-39 | 40-64 | 65+ | Total |
| Electric | 65 | 55 | 5 | 125 |
| Not electric | 835 | 1045 | 495 | 2375 |
| Total | 900 | 1100 | 500 | 2500 |

The model that is considered acceptable from a behavioral perspective involves two variables:

* i, defined as the electric car ownership status (yes or no)
* k, defined as the age category (20-39, 40-64, 65+)

The model is defined as

We know that the model probability follows a binomial distribution, so the sample standard errors are given by

Where N is the number of observations used for the estimation.

1. The standard error for is most closely given by
   1. 0.00066
   2. **0.0086**
   3. 0.00044
   4. 0.0000740
2. Completeness is mathematically described as follows:
3. A mixed integer optimality problem is most closely defined as follows:
   1. A problem containing only integer variables.
   2. A problem containing only continuous variables.
   3. **A problem containing both continuous and integer variables.**
   4. A problem containing a mixture of integer variables.