# Supplemental materials

# Online Consumers’ Attribute Non-Attendance Behavior: Effects of Information Provision

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### Multinomial logit model with shifts in taste parameters and static ANA

We define two sets of binary latent variables; five ’s for attributes where no extra information was provided and three ’s for those where information was provided.  and  equal 1 if consumer  attends to attributeat all occasions, 0 otherwise. The mathematical notations areand , whereis the Bernoulli probability of attending to attribute. Thus, consumer ’s attendance probability for attributeis . Similarly for attributes where information was provided, . Consumer ’s probability to belong to one of the ANA patterns is then a product of individual attributes’ Bernoulli probabilities due to the assumption of independence between’s and ’s:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

The conditional deterministic components of the utility that consumer  derives from selecting webshop  in set  given a  ANA pattern are:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

Attributecontributes to consumer’s utility if orequals one. Otherwise, the attribute’s contribution is constrained to zero. Consequently, the estimated taste parameters,s and s, are conditional on the consumers attending to the attributes. From Equation A2, the conditional probability of consumer  choosing webshop  in set , denoted by , is given by:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

Combining the probabilities to belong to the latent classes and the conditional choice probabilities, and recognizing that every e-consumer can belong to each of the  attribute attendance latent classes, the unconditional probability of observing a sequence of webshop choices over choice sets is;

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

Where  equals 1 if webshop  in choice set  is chosen by consumer , 0 otherwise.

### Multinomial logit model with changing ANA behavior for attributes where information was provided

We introduce an extra index , , to the latent binary variable , so that  equals 1 if consumer  attends to webshop attributein block , 0 otherwise. The  are as defined before.

*Initial state probability:* In line with the independence assumption amongst the latent variables, the initial ANA pattern probability for e-consumer  is the product of initial attributes’ attendance probabilities:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

*Transition probabilities:* They are denoted as  and are limited to the three attributes where information was provided. Where is a vector of transition attendance probabilities. The  vector contains a pair of conditional attendance probabilities per attribute, depending on whether the attribute was attended to or not attended to in the first block:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

The probability to attend to the three attributes in the second block is:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

*Posterior marginal attendance probability in the second block (**):* The ’s are sums of the conditional probabilities weighted by the attendance probability in the first block.

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

*Utilities and choice probabilities:* Extending Equation A2 to allow for the two blocks of choice sets, the updated webshop utilities are as shown below:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

Similarly, extending Equation A3, the conditional choice probability is:

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

Combining ,  and , and recognizing that choice probabilities are correlated through the underlying Markov formulation, the unconditional probability of observing the sequence of webshop choices is a sum over all possible ANA paths consumers can take;

|  |  |  |
| --- | --- | --- |
|  |  | (A) |

With  possible attendance patterns in the first six choice sets. In the last six choice sets,  patterns exist corresponding to the three attributes where information was provided.

### Including factors influencing changes in attribute attendance behavior:

To include a factor that influences the initial attribute attendance probabilities, we specify  as

|  |  |  |
| --- | --- | --- |
|  |  | (A12) |

Where  and  are consumer ’s characteristics and the parameter to be estimated respectively. For the ANA transition probability from non-attendance to attendance, we define

|  |  |  |
| --- | --- | --- |
|  |  | (A13) |

Where  is a parameter to be estimated.  can be similarly defined:

|  |  |  |
| --- | --- | --- |
|  |  | (A14) |