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## **7.4.2-4. ANALYSIS OF INPUT DATA FROM THE CLAIM COMPREHENSION AND INTENTIONS (CCI) STUDY FOR MODIFIED CASE IN THE ALCS COHORT MODEL**

### **7.4.2-4.1. Analysis**

The ALCS Cohort model requires inputs to simulate a modified case scenario where the candidate product has a modified risk claim associated with it. Specifically, the model utilizes select data from the ALCS Claim Comprehension and Intentions (CCI) Study raw data file ([Appendix 7.3.2-8](#)) to estimate transition probabilities from both user and non-user groups to the MRTP. We modeled a male-only cohort over time utilizing 41.7% of never users, 51.9% of adult smokers (87% adult smokers not planning to quit, 13% adult planning to quit) exclusive of moist smokeless tobacco (MST), 96.3% of MST users exclusive of cigarette use, 96.5% of adult dual users of cigarettes and MST, 87.9% of former MST users which was derived from the former tobacco user group. By design, the ALCS CCI Study non-users who were former tobacco users. In order to identify the subpopulation of former tobacco users who were former MST users, respondents had to have reached 20+ dips of smokeless tobacco in their lifetime in order to be assigned to the user group.

With the appropriate subpopulation identified, the analysis focuses primarily on the number of weighted male respondents who met the transition behavior criteria rather than evaluating average intention scores based on the user or non-user group they are associated with. The transition behavior criteria (discussed in detail in [Section 7.4.2.2](#)) requires the weighted male respondents to have a composite score of 3.5 or higher (6-point intention scale) on intention to use/switch and positive intent to purchase the candidate product. For transitions to dual use, the respondents must have a 4 or higher on intention to dual use and positive intent to purchase the candidate product. The SAS code used to generate the data file utilized for population modeling is listed below.

Once the respondent meets the transition behavior criteria (shown in [Table 1](#)), the proportion of those who met the criteria to the total male user and non-user group is calculated. This calculation is done for the control group without the ad exposure, control group with the ad exposure, test group without the ad exposure, and the test group with the ad exposure (Columns A, B, C, D, respectively in [Table 1](#) below). Once the data table was generated, Columns A-D was used to compute the relative percentage change for each intended behavior (Column E). Column E is equivalent to the percentage change of post-ad respondents who met the transition behavior criteria from the control group to the test group relative to pre-ad respondents who met the transition behavior criteria from the control group to the test group.

In Table 1, the transition probabilities in Column E are computed with the following formula:

$$\frac{\frac{Column_D}{Column_C} - \frac{Column_B}{Column_A}}{\frac{Column_B}{Column_A}}$$

**Table 1: Weighted Respondents that met Transition Criteria**

			Column A	Column B	Column C	Column D	Column E <sup>1</sup>
Section	User and Non-user Groups	Intended Behavior	Control Group without Ad Exposure	Control Group with Ad Exposure	Test Group without Claim Exposure	Test Group with Claim Exposure	Relative Percentage Change
Nonusers Who Initiate Tobacco Use with the Proposed Product, Never-Users, and Former Users “MRTP Initiation”							
7.4.2.2.4.1	Never-user of tobacco (ever-past trier/never-trier)	Initiate Candidate Product	0.031	0.024	0.048	0.036	-4.8% <sup>2</sup>
	Former MST user		0.031	0.000	0.073	0.035	0.0%
	Would-be smoker		NA				+1.0%
Tobacco Users and Nonusers Who, after Adopting the Proposed Product, Switch ... “MRTP to Smoking”							
7.4.2.2.4.2	Current exclusive MST user	Switch to Cigarette	Not measured in the study				
Tobacco Users Who Switch from Other Commercially Marketed Tobacco Products to the Proposed Product “Smoking to MRTP”							
7.4.2.2.4.3	Current cigarette smokers (planning to quit/not	Switch To Candidate Product	0.177	0.159	0.140	0.151	20.8%

			Column A	Column B	Column C	Column D	Column E <sup>1</sup>
Section	User and Non-user Groups	Intended Behavior	Control Group without Ad Exposure	Control Group with Ad Exposure	Test Group without Claim Exposure	Test Group with Claim Exposure	Relative Percentage Change
	planning to quit)						
	Would-be Smoker quitters		NA				+5.0%
Tobacco Users Who Opt to Use the Proposed Product Rather than Cease Tobacco Use Altogether “Smoking to Dual Use”							
7.4.2.2.4.4	Current cigarette smokers (planning to quit/not planning to quit)	Switch to Dual (Candidate Product & cigarettes)	0.240	0.199	0.179	0.183	24.0%
Tobacco Users Who Use the Product in Conjunction with Other Tobacco Products “Dual to Exclusive”							
7.4.2.2.4.5	Dual users (MST and cigarette)	Switch to Candidate Product	0.341	0.324	0.355	0.356	5.7%
	Dual users (MST and cigarette)	Switch to Cigarette	Not measured in the study				

ALCS = Altria Client Services, LLC; MRTP = Modified Risk Tobacco Product; MST = Moist Smokeless Tobacco

NA = Not Available

\*Recreating Column E from the values in the table above may not equate to the probabilities reported due to rounding.

## 7.4.2-4.2.SAS Code

```
libname libname "library location";
run;
PROC IMPORT OUT= libname.ccis
            DATAFILE= "CCIS (Claim Comprehension and Intentions Study) File
Location"
            DBMS=SPSS REPLACE;

RUN;
*****;

proc contents data=libname.ccis;
run;

/*Create main sample and change variable names to avoid commands*/
data ccis (rename=(group=user type) rename=(weight=wt));
    set libname.ccis;
    where sample=1;
run;

*Never Tobacco to Candidate Product Pre Ad for Test and Control Groups*;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Use_Pre;
    where gender=1;
    weight wt;
run;

*Never Tobacco to MRTP Post Ad for Test and Control Groups;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Use_Post;
    where gender=1;
    weight wt;
run;

*Former MST to Candidate Product Pre Ad for Test and Control Groups;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Use_Pre;
    where gender=1 and q57=1 ;
    weight wt;
run;

*Former MST to MRTP Post Ad for Test and Control Groups;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Use_Post;
    where gender=1 and q57=1 ;
    weight wt;
run;

*ASPQ/ASNPQ/Dual Users Switch to Candidate Product Pre Ad for Test and
Control Groups;
```

```
proc freq data=ccis;
table usertype*cond*Pos_Aff_Switch_Pre;
  where gender=1;
  weight wgt;
run;

* ASPQ/ASNPQ/Dual Users Switch to MRTP Post Ad for Test and Control Groups;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Switch_Post;
  where gender=1;
  weight wgt;
run;

* ASPQ/ASNPQ Switch to Dual Use Pre Ad for Test and Control Groups;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Dualuse_Pre;
  where gender=1;
  weight wgt;
run;

* ASPQ/ASNPQ Switch to Dual Use Post Ad for Test and Control Groups;
proc freq data=ccis;
table usertype*cond*Pos_Aff_Dualuse_Post;
  where gender=1;
  weight wgt;
run;
```