

Appendix 3.2-3: Analyses of ALCS Consumer Behavior Study Data for Section 3.2 – Description of Conditions for Use and Actual Use of the Product

- **Statement of Purpose/ Objective:** To substantiate Consumer Behavior Study analyses in Section 3.2
- **Source and data set up:** Altria Client Services' LLC Consumer Behavior Study, Aug. 2013

Altria Client Services LLC Consumer Behavior Study is an online survey conducted in Aug. 2013 among 1,033 adult tobacco consumers aged 21 to 64 years. The sample includes those who used MST, snus and/or smoked cigarettes in the past 30 days and indicated that they are "currently using" the tobacco product.

Analysis weight (weight) was used to balance the sample with the general tobacco consumer population, based on the Adult Tobacco Consumer Tracking Study (see Appendix 3.2-4), with respect to the distribution of male/female, age, regions, education, and regular brand share within tobacco product usage. Data were set up using the following in Stata 15.0:

```
svyset [pweight=weight]
```

- **Summary of outcomes assessed**
We conducted analysis for five outcomes using the Consumer Behavior Study for Section 3.2. These outcomes are listed in the table below along with the survey questions and the variables used to derive these outcome variables.

Outcome Measure	Corresponding Variables & Questions	
	Variable	Question
1 Length of dipping	q34i	And on days you use dip, how many minutes, on average, do you keep a dip/pinch/pouch in your mouth? (DROPDOWN less than 5 minutes, 5-15 minutes, 15-30 minutes, 30-45 minutes, more than 45 minutes)
2 Average # of days used MST during past 30 days	q34f	On how many of the past 30 days did you use dip? (DROPDOWN 1-30)
3 Number of use occasions on Days used	q34g for weekdays	In the past 30 days, on typical days during the week (that is Monday-Friday) that you used dip, about how many dips/pinches did you use per day? (DROPDOWN 1-20)
	q34h for weekends	In the past 30 days, on typical days during the weekend (that is Saturday and Sunday) that you used dip, about how many dips/pinches did you use per day? (DROPDOWN 1-20)
4 Average # of days smoked cigarettes during past 30 days	q27c	On how many of the past 30 days did you, yourself, smoke one or more cigarettes? (DROPDOWN 1-30)
5 Past 30-day amount of cigarette use on days used	q27d for weekdays	In the past 30 days, on typical days during the week (that is Monday-Friday) that you smoked cigarettes, about how many cigarettes did you smoke per day? (DROPDOWN 1-60)
	q27e for weekends	In the past 30 days, on typical days during the weekend (that is Saturday and Sunday) that you smoked cigarettes, about how many cigarettes did you smoke per day? (DROPDOWN 1-60)

- **User Groups**

This section describes the definition of the three user groups and variables used to identify these groups, as presented in Section 3.2.

User Groups	Definitions	Variables / Syntax
Past 30-day smokeless tobacco users (Total MST)	Respondents who reported use of smokeless tobacco in past 30-days, irrespective of use of any other tobacco product	q14a_5=1 & q14b_2=1
Past 30-day smokeless tobacco users and NOT past 30-day cigarette users (Exclusive MST*)	Respondents who reported use of smokeless* tobacco in past 30-days and NOT reported use of a cigarette in the past 30-days, irrespective of use of any other tobacco product	(q14a_5=1 & q14b_2=1) & (q14a_1=. q14b_1=2)
P30 day cigarette AND P30 days smokeless tobacco users (MST & Cigarettes)	Respondents who reported use of a cigarette in the past 30-days AND also reported use of smokeless tobacco in the past 30-days, irrespective of use of any other tobacco product	q14a_1=1 & q14b_1=1 & q14a_5=1 & q14b_2=1

*MST exclusive of cigarette smoking.

Footnote: n=485 for Total MST group, n=271 for Exclusive MST group, and n=214 for MST & Cigarettes group. Due to survey routing patterns to minimize overall survey length, participants may not have been asked usage questions for every tobacco product they use. Specifically, 3 of the 271 exclusive MST users and 44 of the 214 dual users of MST and cigarettes were not asked questions about their MST use behavior. Thus, the total number of adult MST consumers analyzed on MST use behaviors was 438 (268 exclusive MST users [i.e., 271 minus 3] plus 170 dual users [i.e., 214 minus 44] who were asked the MST use behavior questions), rather than 485 (271 exclusive MST users plus 214 dual users). Similarly, 38 of the 214 dual users were not asked questions about their cigarette use behavior. Thus, the total number of dual users analyzed on cigarette use behaviors was 176 (214 dual users minus 38 who were not asked about their cigarette use).

- **Results: Syntax and Output**

In this section, we present Stata syntax and original output tables to generate results shown in section 3.2.

Outcome 1: Length of dipping

Syntax to recode the groups

```
gen smtcig=1 if q14a_1==1 & q14b_1==1 & q14a_5==1 & q14b_2==1  
replace smtcig=0 if (q14a_5==1 & q14b_2==1) & (q14a_1==. | q14b_1==2)
```

*** Table 1. Syntax and output for the length of dipping among the three users groups**

The first column shows proportions and 95% confidence intervals for the “Exclusive MST” group, the second for the “MST & Cigarettes” group, and the third for “Total MST” group.

The 438 observations include 268 in the Exclusive MST group and 170 in the MST & Cigarettes group.

```
. svy: tab q34i smtcig, col per ci format(%2.0f)
```

(running tabulate on estimation sample)

Number of strata = 1

Number of PSUs = 438

Number of obs = 438

Population size = 435.868

Design df = 437

q34i	smtcig		Total
	Exclusiv	MST & Ci	
<5	0 [0,2]	5 [2,12]	2 [1,5]
5-15 min	14 [10,19]	26 [17,37]	18 [14,24]
15-30 min	34 [28,41]	45 [33,57]	38 [32,45]
30-45 min	21 [16,27]	11 [6,18]	17 [13,22]
45+	31 [25,38]	14 [7,26]	25 [20,30]
Total	100	100	100

Key: column percentage

[95% confidence interval for column percentage]

Pearson:

Uncorrected chi2(4) = 41.0479

Design-based F(3.38, 1477.89) = 5.9503 P = 0.0003

Outcome 2: Average number of days of MST use

* Table 2. Syntax and output for average number of days of MST use during past 30 days among Total MST group

```
. svy: mean q34f, cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

```
Number of strata =      1      Number of obs   =      438
Number of PSUs   =     438      Population size =    435.868
                                   Design df      =      437
```

		Linearized		
		Mean	Std. Err.	[95% Conf. Interval]

q34f		22.0	0.6	20.7 23.2

*** Table 3. Syntax and output for average number of days of MST use during past 30 days among Exclusive MST group and MST & Cigarettes group**

The 438 observations include 268 in the Exclusive MST group and 170 in the MST & Cigarettes group.

```
. svy: mean q34f , over(smtcig) cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

Number of strata = 1 Number of obs = 438
 Number of PSUs = 438 Population size = 435.868
 Design df = 437

_subpop_1: smtcig = Exclusive MST
 _subpop_2: smtcig = MST & Cigarettes

Over	Linearized			
	Mean	Std. Err.	[95% Conf. Interval]	

q34f				
_subpop_1	25.2	0.6	24.1	26.3
_subpop_2	16.8	1.3	14.3	19.3

Footnote: subpop_1 includes past 30-day exclusive MST users, and subpop_2 includes past 30-day MST & Cigarettes users.

Outcome 3-1: Number of use occasions on days used on weekdays

**** Categories of the outcome**

We first ran tabulations for a categorical past 30-day number of use occasions variable.

*Recode of outcome variable

```
recode q34g (1/5=1) (6/10=2) (10/30=3), gen(ndip)
```

*** Table 4. Syntax and output for categorical past 30-day number of use occasions among the three user group**

The first column shows proportions and 95% confidence intervals for the “Exclusive MST” group, the second for the “MST & Cigarettes” group, and the third for “Total MST” group.

The 438 observations include 268 in the Exclusive MST group and 170 in the MST & Cigarettes group.

```
. svy: tab ndip smtcig , col per ci format(%2.0f)
(running tabulate on estimation sample)
```

Number of strata	=	1	Number of obs	=	438
Number of PSUs	=	438	Population size	=	435.868
			Design df	=	437

RECODE of q34g (q34g)	Exclusiv	smtcig MST & Ci	Total
1	58 [51,65]	67 [55,77]	62 [55,68]
2	28 [23,35]	22 [14,33]	26 [21,31]
3	13 [9,19]	11 [5,22]	13 [9,18]
Total	100	100	100

Key: column percentage
 [95% confidence interval for column percentage]

Pearson:

Uncorrected	chi2(2)	=	3.3393	
Design-based	F(1.98, 864.64)	=	0.7536	P = 0.4697

**** Means of the outcome**

We then ran analysis for the average number of use occasions

*** Table 5. Syntax and output for # of use occasions on days used during the past 30-days among Total MST group**

```
. svy: mean q34g , cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

```
Number of strata =      1      Number of obs   =      438
Number of PSUs   =     438      Population size =    435.868
                                   Design df      =      437
```

		Linearized		
		Mean	Std. Err.	[95% Conf. Interval]

q34g		6.1	0.3	5.5 6.6

*** Table 6. Syntax and output for number of use occasions on days used during the past 30-days among Exclusive MST and MST & Cigarettes groups**

The 438 observations include 268 in the Exclusive MST group and 170 in the MST & Cigarettes group.

```
. svy: mean q34g , over(smtcig) cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

```
Number of strata =      1      Number of obs   =      438
Number of PSUs   =     438      Population size =    435.868
                                   Design df      =      437
```

```
_subpop_1: smtcig = Exclusive MST
_subpop_2: smtcig = MST & Cigarettes
```

Over	Linearized			
	Mean	Std. Err.	[95% Conf. Interval]	

q34g				
_subpop_1	6.4	0.4	5.6	7.1
_subpop_2	5.6	0.5	4.7	6.5

Outcome 3-2: Number of use occasions on days used on weekends

**** Means of the outcome**

*** Table 7. Syntax and output for number of use occasions on days used during the past 30-days among Total MST group**

```
. svy: mean q34h , cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

```
Number of strata =      1      Number of obs   =      438
Number of PSUs   =     438      Population size =    435.868
                                   Design df      =      437
```

		Linearized		
		Mean	Std. Err.	[95% Conf. Interval]

q34h		6.3	0.3	5.7 6.9

*** Table 8. Syntax and output for number of use occasions on days used during the past 30-days among Exclusive MST and MST & Cigarettes groups**

```
. svy: mean q34h , over(smtcig) cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

```
Number of strata =      1      Number of obs   =      438
Number of PSUs   =     438      Population size =    435.868
                                   Design df      =      437
```

```
_subpop_1: smtcig = Exclusive MST
_subpop_2: smtcig = MST & Cigarettes
```

Over	Linearized			
	Mean	Std. Err.	[95% Conf. Interval]	
q34h				
_subpop_1	6.6	0.4	5.9	7.3
_subpop_2	5.8	0.5	4.8	6.7

Outcome 4: Average number of days smoked cigarettes during past 30-days among MST & Cigarettes group

* Table 9. Syntax and output for average number of days smoked cigarettes during past 30-days among MST & Cigarettes group

```
. svy, subpop(if smtcig==1): mean q27c , cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

Number of strata =	1	Number of obs =	995
Number of PSUs =	995	Population size =	1,001.68
		Subpop. no. obs =	176
		Subpop. size =	182.208
		Design df =	994

		Linearized		
		Mean	Std. Err.	[95% Conf. Interval]

q27c		22.9	1.3	20.3 25.5

Outcome 5-1: Past 30-day amount of cigarette use on days used on weekdays among MST & Cigarettes group

*** Table 10. Syntax and output for past 30-day amount of cigarette use on days used on weekdays among MST & Cigarettes group**

```
. svy, subpop(if smtcig==1): mean q27d , cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

Number of strata =	1	Number of obs =	995
Number of PSUs =	995	Population size =	1,001.68
		Subpop. no. obs =	176
		Subpop. size =	182.208
		Design df =	994

	Linearized			
	Mean	Std. Err.	[95% Conf. Interval]	
q27d	13.5	1.1	11.2	15.7

Outcome 5-2: Past 30-day amount of cigarette use on days used on weekends among MST & Cigarettes group

*** Table 11. Syntax and output for past 30-day amount of cigarette use on days used on weekends among MST & Cigarettes group**

```
. svy, subpop(if smtcig==1): mean q27e , cformat(%2.1f)
(running mean on estimation sample)
```

Survey: Mean estimation

Number of strata =	1	Number of obs =	995
Number of PSUs =	995	Population size =	1,001.68
		Subpop. no. obs =	176
		Subpop. size =	182.208
		Design df =	994

		Linearized		
		Mean	Std. Err.	[95% Conf. Interval]

q27e		13.9	1.1	11.8 15.9
