



Ipsos Marketing

The Market Understanding and Measurement Specialists

Cross Sectional Pilot Studies to Describe the Effects of *iQOS* on the Adult Population's Tobacco and Nicotine-Containing Products Prevalence

Wave 2

Prepared For: Philip Morris International

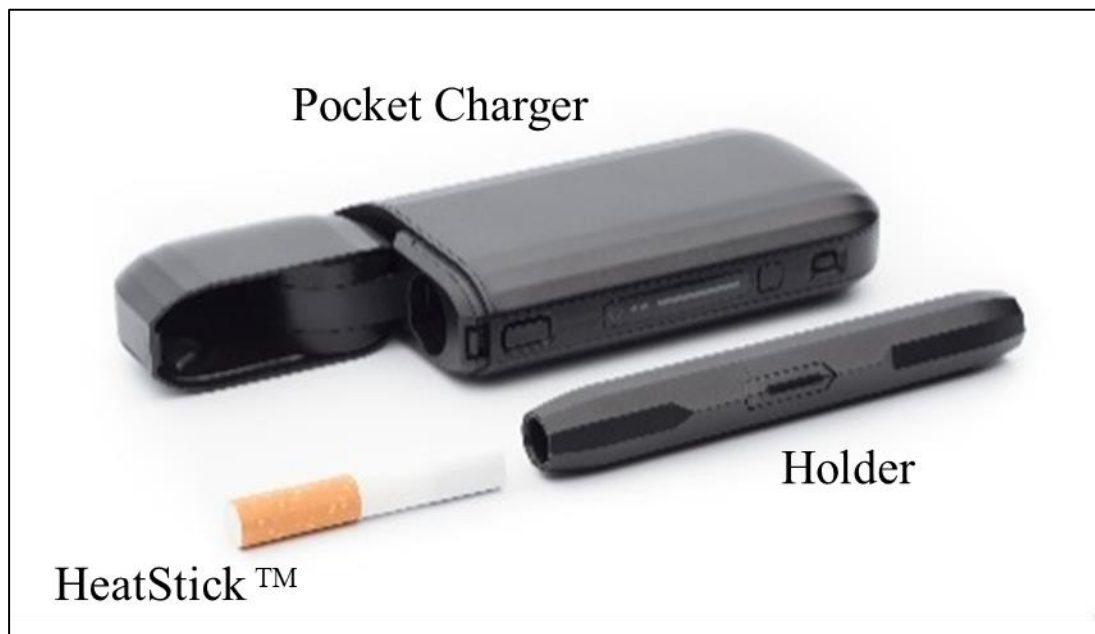
7th August 2015

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1. Background

PMI is currently developing a range of Novel Tobacco Products – or potential “Reduced Risk Products” (RRP)¹ – one of which (the Tobacco Heating System 2.2, known as Platform 1 or P1) is currently undergoing commercialization.



PMI has commercialized this product in Japan and commenced with geographically limited test launches in the Nagoya (Japan) in November 2014. This product is currently commercialized using the brand *iQOS* for the device and *Marlboro HeatSticks*™ for the consumable HeatSticks™.

The product aims to give existing adult smokers an alternative to conventional cigarettes. As a first of its kind product, understandably there will be significant interest over the impact it has on the market and ultimately on the prevalence of the adult population's usage of tobacco and nicotine containing products. Consequently, PMI commissioned this research to pilot a methodology to assess the possible effects of the launch of P1 on broader tobacco and nicotine containing product usage.

¹ Note: Reduced-Risk Products ("RRPs") is the term the company uses to refer to products with the potential to reduce individual risk and population harm in comparison to smoking cigarettes. The descriptions in the chart are for illustrative purposes only.

2. Overall Study Objectives

The main aim of these Cross Sectional Pilot Surveys is to test the survey methodology. This in view of the possible roll-out of similar surveys at a national level when the commercialization of *iQOS* is launched nationwide.

The main objectives of these Cross Sectional Pilot Surveys are to describe among the adult population:

- Prevalence of use of tobacco and nicotine containing products
- Initiation rates
- Re-initiation / relapse rates
- Quit rates
- Patterns of concurrent use

3. Sample and Methodology

Research area: Nagoya city (Japan).

Sample criteria: Male and female adults 20+ years old recruited from online panels. All participants live in the pilot city or travel to them at least once a week.

Sample size: 600 adults.

Fieldwork period Wave 1:

- 3rd March – 17th March 2015

Fieldwork period Wave 2:

- 22nd April – 30th April 2015

Methodology: Each participant completed a ten-minute online quantitative questionnaire on their current and past tobacco or nicotine containing product usage.

Quotas and Weighting: Interlocking quotas were set on age and gender. The age/gender profile was weighted to ensure it was representative of the target population in the two geographies. The weighting values ranged from between 0.7 and 1.8.

	W1 (Unweighted) %	W1 (Weighted) %
Male, 20-29	10.3	7.3
Male, 30-39	11.8	8.5
Male, 40-49	13.3	9.5
Male 50+	15.5	23.4
Female, 20-29	9.7	7.0
Female, 30-39	11.3	8.1
Female, 40-49	12.8	9.2
Female 50+	15.2	27.0

Source: Population data acquired from the official homepage of Nagoya City²

	W2 (Unweighted %)	W2 (Weighted %)
Male, 20-29	10.3	7.3
Male, 30-39	11.8	8.5
Male, 40-49	13.3	9.5
Male 50+	15.5	23.4
Female, 20-29	9.7	7.0
Female, 30-39	11.3	8.1
Female, 40-49	12.8	9.2
Female 50+	15.2	27.0

Source: Population data acquired from the official homepage of Nagoya City²

Significance testing: All differences highlighted in this report are significant to a significance level of $\alpha=0.05$

² Aug-Oct, 2014 – Official homepage of Nagoya city (<http://www.city.nagoya.jp>)

4. Glossary and Definitions

Tobacco or nicotine containing products (excluding Nicotine Replacement Therapy)

Products including manufactured cigarettes, e-cigarettes; roll-your-own cigarettes, heated tobacco, cigars/pipes/Kiseru; smokeless tobacco pipes and chewing tobacco, snus and snuff. Current or former users of manufactured cigarettes or roll-your-own cigarettes have smoked at least 100 cigarettes in their lifetime. Current or former users of heated tobacco have used at least 100 sticks/ pods

Initiation product

First product used regularly by current users of tobacco or nicotine containing products when they first entered the category

Quitting Attempt

Discontinuing all tobacco or nicotine containing products for 24 hours and 30 days

Quitting

Discontinuing all tobacco or nicotine containing products for more than 30 days

Re-lapse

Starting to use tobacco or nicotine containing products again after quitting tobacco or nicotine products for between 30 days and one year

Re-initiation

Starting to use tobacco or nicotine containing products again after quitting tobacco or nicotine products for more than one year

Occasional usage

The use of tobacco or nicotine containing products on a less than daily (on some occasions) basis

5. Key Findings

Prevalence of use of tobacco or nicotine containing products

22.5% of the survey population in Nagoya use one or more tobacco or nicotine containing product(s) daily. Most daily users smoke manufactured cigarettes (22.3%). All other products are less commonly used, but a small portion (1.5%) currently use heated tobacco daily. When compared to wave 1 there is no significant change in daily prevalence (22.0%).

Initiation product

Most current users (95.2%) first started smoking manufactured cigarettes, with a small minority entering the category via e-cigarettes (2.4%). Less than 1% (0.5%) claim to have entered the category via heated tobacco.

The products first used are consistent with wave 1. In wave 1, 96.0% first started smoking manufactured cigarettes, 2.0% e-cigarettes and 0.5% heated tobacco.

Quit attempt

0% of the survey population has stopped using all tobacco or nicotine continuing products for between 24 hours and 30 days. This is consistent with wave 1 where 0.1% was attempting to quit.

Quit

12.6% of the survey population has stopped using all tobacco or nicotine containing products for over 30 days. This is consistent with wave 1 where 13.3% had quit.

Re-lapse rates

5.4% of the survey population on their last quit attempt re-lapsed after discontinuing tobacco or nicotine containing product usage for between 30 days and one year. This is similar to wave 1 where 4.2% had re-lapsed.

Re-initiation rates

3.4% of the survey population started using tobacco or nicotine containing products again after quitting for more than one year. This is similar to levels in wave 1 (3.6%)

Patterns of Concurrent Use

22.5% use tobacco or nicotine containing product(s) daily, most (20.7%) use only one product.

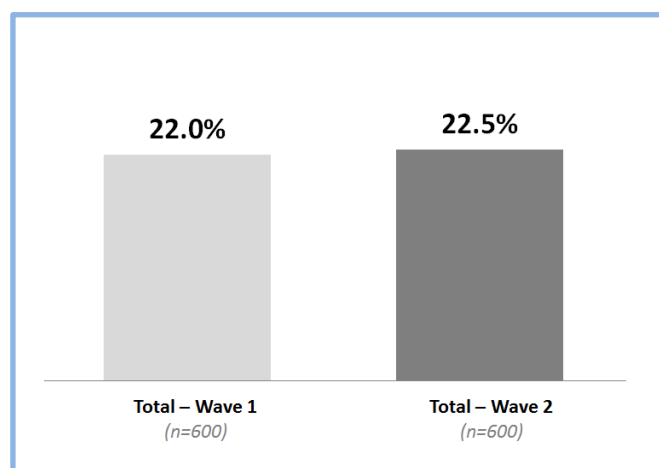
The patterns of concurrent usage are the in line with wave 1, where 20.8% used only one product.

6. Prevalence of Use of Tobacco or Nicotine Containing Products

6.1 Daily Usage

Overall, around a fifth (22.5%) of the survey population in Nagoya use one or more tobacco or nicotine containing product(s) daily. This has remained constant since wave 1 (22.0%). [Figure 6.1a](#)

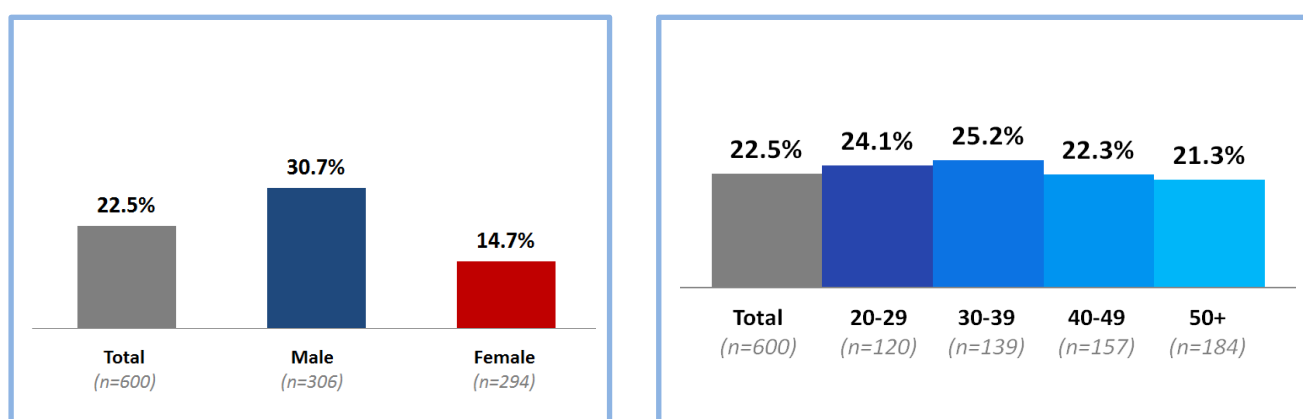
Figure 6.1a – Prevalence of tobacco or nicotine containing product usage (daily) among total survey population



Males participating to the survey (30.7%) are significantly³ using tobacco or nicotine containing products more than females (14.7%)

Across age groups there is no significant difference in the prevalence of usage of tobacco or nicotine products. [Figure 6.1b](#)

Figure 6.1b – Prevalence of tobacco or nicotine containing product usage (daily) among adults in Nagoya, by gender and age (wave 2)










*Q1: Which, if any, of the following products are you currently using? For each product we would like to know if you currently:
Use daily (I use it every day), Use less than daily (I use it only on some occasions), Do not use (I don't currently use)
Base; n =600*

³ When testing for significant differences, the testing was done with a significance difference level $\alpha=0.05$

The majority (22.3%) of daily users smoke manufactured cigarettes, whereas other tobacco or nicotine containing products are much less commonly used, with 1.5% of the survey population currently using heated tobacco and 1.3% using e-cigarettes.

Compared with wave 1, there are no significant differences in the products used daily. [Figure 6.2](#)

[Figure 6.2](#) – Daily usage of tobacco or nicotine containing products in Nagoya

	PRODUCT	DAILY USAGE	
		Wave 1	Wave 2
	Manufactured cigarettes	21.3%	22.3%
	Heated tobacco	0.7%	1.5%
	E-cigarettes ⁴	0.8%	1.3%
	Smokeless tobacco pipes	0.5%	0.7%
	Roll-your-own cigarettes	0.1%	0.2%
	Cigars / pipes / Kiseru	0.5%	0.1%
	Chewing tobacco, snus and snuff	0.1%	0.1%

On average, daily users of manufactured cigarettes, smoke 17 cigarettes per day. The same average number of cigarettes smoked per day as in wave 1.

Among the survey population, a larger proportion of males (30.5%) is smoking manufactured cigarettes on a daily basis compared to females (14.5%). [Table 6.3a](#) This is the same pattern as with overall prevalence and is a result of manufactured cigarettes overwhelmingly being the most commonly used product. Those aged 20-39 are significantly using heated tobacco products (3.6%) and e-cigarettes (2.8%) more than those aged over 40 (0.6% for both e-cigarettes and heated tobacco products). [Table 6.3b](#)

⁴ Includes e-cigarettes containing nicotine and no nicotine

Table 6.3a – Daily usage of tobacco or nicotine containing products in Nagoya, by gender

	Wave 2	
	Male (A) (n=306)	Female (D) (n=294)
Manufactured cigarettes	30.5% (B)	14.5%
Heated tobacco products	1.2%	1.7%
E-cigarettes	1.2%	1.3%
Smokeless tobacco pipes	1.0%	0.5%
Roll-your-own cigarettes	0.5%	-
Cigars / pipes / Kiseru	-	0.2%
Chewing tobacco, snus and snuff	-	0.2%

N.B. A letter next to a percentage denotes that the percentage is significantly higher (significance level $\alpha=0.05$) than the corresponding percentage that is in the column of that letter

Table 6.3b – Daily usage of tobacco or nicotine containing products in Nagoya, by age

	Wave 2	
	20-39 (A) (n=259)	40+ (B) (n=341)
Manufactured cigarettes	23.9%	21.6%
Heated tobacco products	3.5% (B)	0.6%
E-cigarettes	2.7% (B)	0.6%
Smokeless tobacco pipes	2.3% (B)	-
Roll-your-own cigarettes	0.8%	-
Cigars / pipes / Kiseru	0.4%	-
Chewing tobacco, snus and snuff	-	0.2%

N.B. A letter next to a percentage denotes that the percentage is significantly higher (significance level $\alpha=0.05$) than the corresponding percentage that is in the column of that letter

6.2 Occasional Usage

Overall, 6.5% of the survey population use tobacco or nicotine containing products less than daily. This is similar to the level of occasional usage seen in wave 1 (4.4%).

Manufactured cigarettes (2.4%), smokeless tobacco pipes (2.2%), e-cigarettes (2.2%), cigars/pipes/Kiseru (1.6%) and heated tobacco products (1.5%) are used on an occasional basis by a small portion of people in Nagoya. [Figure 6.4a](#). When compared to wave 1 there is no significant change in the less daily usage of each tobacco or nicotine containing product. [Figure 6.4b](#)

Figure 6.4a – Usage of tobacco or nicotine containing products in Nagoya

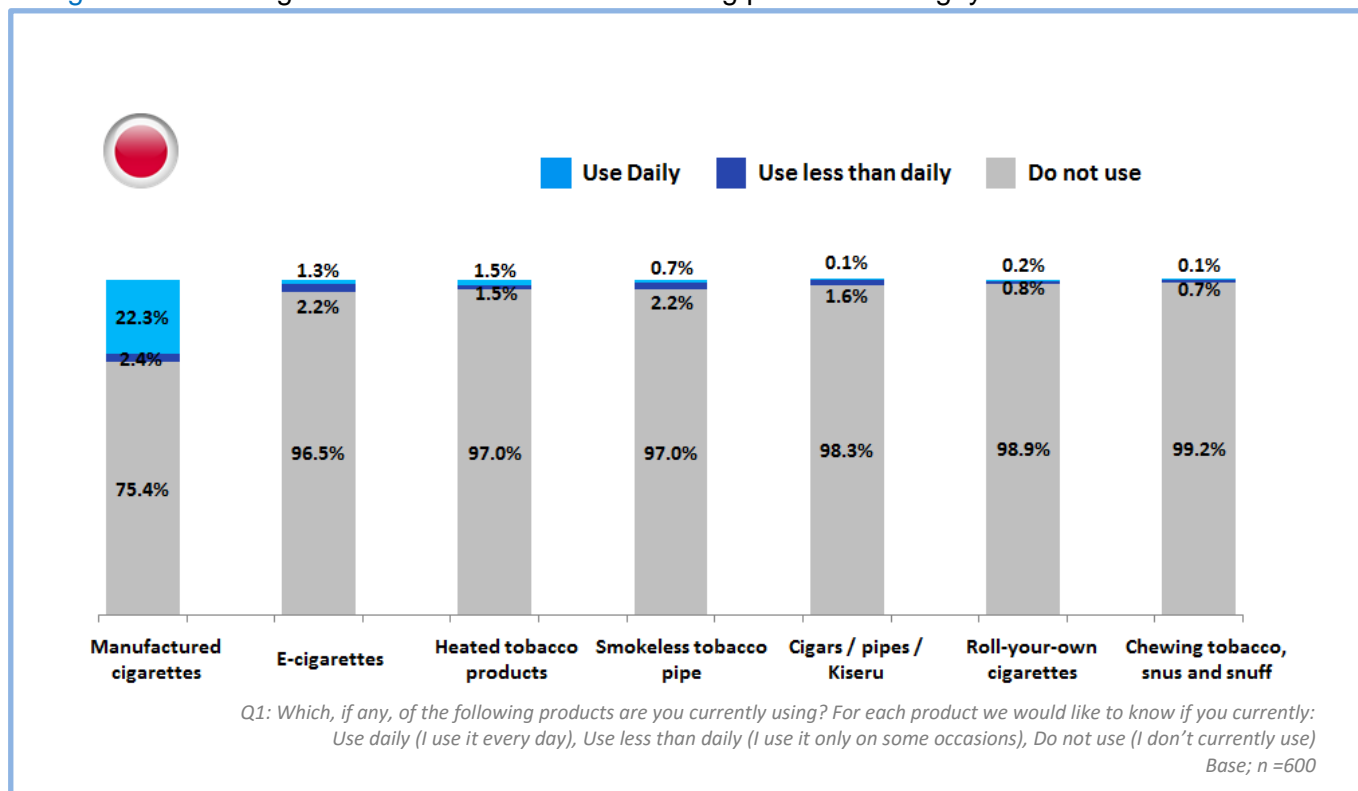









Figure 6.4b – Less than daily usage of tobacco or nicotine containing products in Nagoya

PRODUCT		LESS THAN DAILY USAGE	
		Wave 1	Wave 2
	Manufactured cigarettes	2.6%	2.4%
	E-cigarettes ⁵	1.2%	2.2%
	Smokeless tobacco pipes	1.2%	2.2%
	Cigars / pipes / Kiseru	1.0%	1.6%
	Heated tobacco	0.4%	1.5%
	Roll-your-own cigarettes	0.5%	0.8%
	Chewing tobacco, snus and snuff	0.5%	0.7%

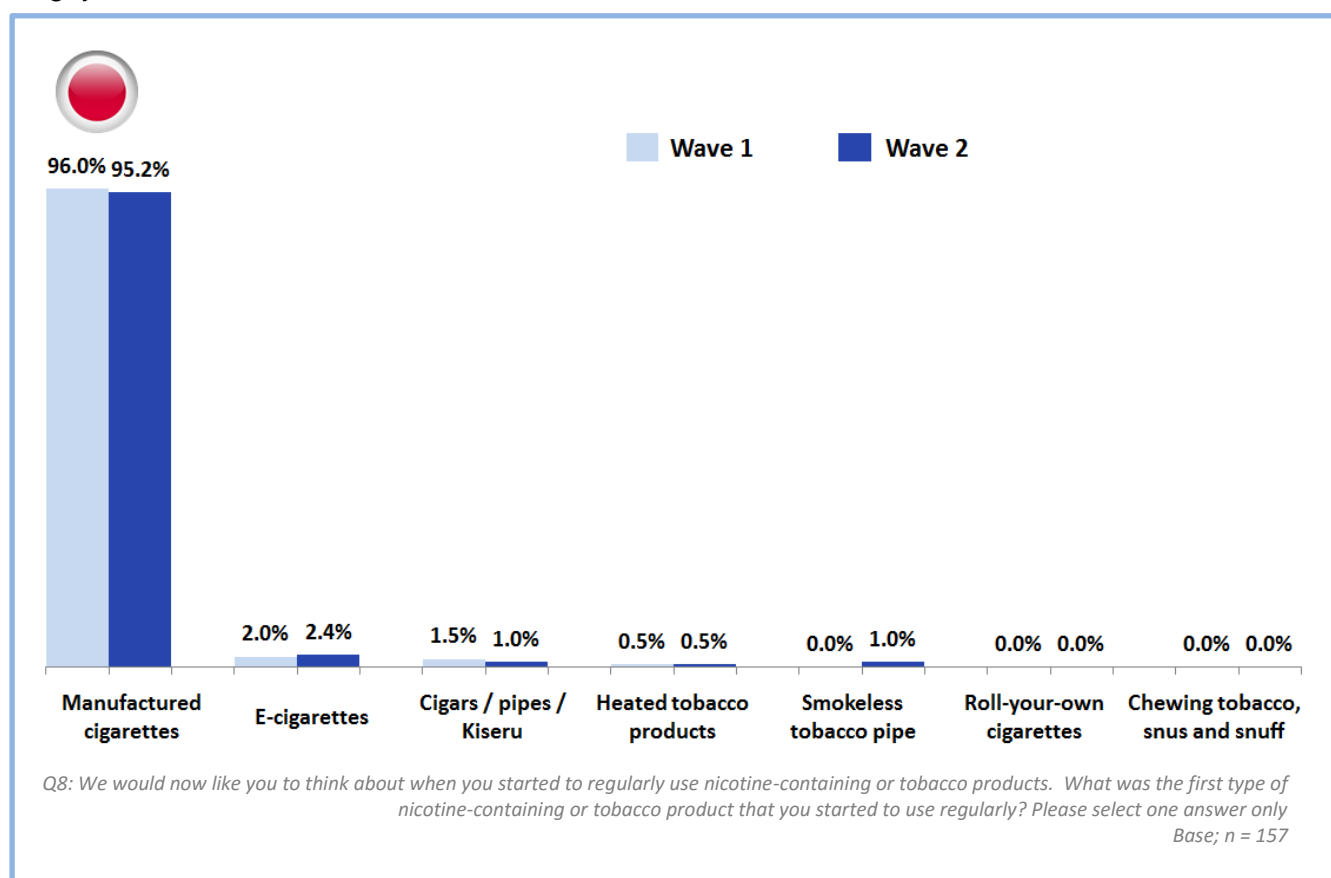
⁵ Includes e-cigarettes with and without nicotine

7. Initiation Rates

In Nagoya, manufactured cigarettes are the most common route of entry into the category with the vast majority (95.2%) listing them as the first tobacco or nicotine containing product that they started using regularly. Similarly in wave 1, manufactured cigarettes were the main route of initiation (96.0%). [Figure 7.1](#)

E-cigarettes (2.4%) and cigars/pipes/Kiseru (1.0%) were also indicated as first tobacco or nicotine containing product – although among a very small minority. 0.5% claim that heated tobacco is the first product that they started using on a regular basis. [Figure 7.1](#)

Figure 7.1 – Routes of initiation into tobacco or nicotine containing products usage in Nagoya



8. Quit Rates

0% of the survey population in Nagoya are currently attempting to quit tobacco or nicotine containing products (i.e. have stopped using all tobacco or nicotine containing products for between 24 hours and 30 days. This is consistent with wave 1 where 0.1% was attempting to quit.

12.6% of the survey population have quit all tobacco or nicotine containing products for over 30 days. This is also consistent with wave 1 where 13.3% had quit.

The majority of those who have quit for more than 30 days were previously using manufactured cigarettes (97.1%), although a small majority had used cigars/ pipes/ Kiseru (6.0%) and roll-your own cigarettes (0.9%). None of those who had quit had previously been using a heated tobacco product. There are no significant changes in the products used prior to quitting.

9. Re-lapse/ Re-initiation Rates

In Nagoya, 5.4% of the survey population on their last quit attempt re-lapsed after discontinuing tobacco or nicotine containing product usage for between 30 days and one year. This is similar to wave 1 where 4.2% had re-lapsed. 3.4% of the survey population on their last quit attempt re-initiated after quitting tobacco or nicotine product usage for more than one year. This is similar to wave 1 where 3.6% had re-initiated. [Table 9.1](#)

Table 9.1 – Length of most recent quit attempt, in Nagoya








	Length of most recent quit attempt (Wave 1)	Length of most recent quit attempt (Wave 2)
Between 1 day and 30 days Initial quitters	6.0%	6.7%
Between 1 month and 12 months Short term quitters	4.2%	5.4%
Longer than 1 year Long term quitters	3.6%	3.4%

Prior to their quit attempt, most users smoke manufactured cigarettes (95.8%), although a minority stop after using e-cigarettes (4.0%) and even fewer after use of heated tobacco (1.3%).

When these users resume tobacco or nicotine containing product use, 93.1% return to manufactured cigarettes, although a small minority return to the category through e-cigarettes (2.7%) or heated tobacco products (1.3%). [Figure 9.2](#)

All of the above have been consistent wave on wave. [Figure 9.2](#)

Figure 9.2 – Routes of re-lapse/re-initiation into tobacco or nicotine containing product usage after quitting for more than 30 days, in Nagoya

PRODUCT		RE-LAPSE / RE-INITIATION	
		Wave 1	Wave 2
	Manufactured cigarettes	98.5%	93.1%
	Cigars / pipes / Kiseru	-	2.8%
	E-cigarettes ⁶	-	2.7%
	Heated tobacco	1.5%	1.3%
	Roll-your-own cigarettes	-	-
	Chewing tobacco, snus and snuff	-	-
	Smokeless tobacco pipes	-	-

⁶ Includes e-cigarettes containing nicotine and no nicotine

10. Patterns of Concurrent Use

Among the 22.5% of the survey population who use tobacco or nicotine containing products daily – most use only one product (20.7%), with a small proportion using two (0.5%) or three or more (1.4%) products daily.

These figures have been stable since wave 1, where among the 22.0% of the survey population who used tobacco or nicotine containing products daily - most used only one product (20.8%), with a small proportion using two (0.9%) or three or more (0.4%) products daily.

Appendix

A. Table of Key Figures

		Wave 1	Wave 2
Prevalence of use of tobacco or nicotine containing products (Q1)		(n=600)	(n=600)
Base: Total survey population	Prevalence of daily use	22.0%	22.5%
	Prevalence of less than daily use	4.4%	6.5%
		(n=600)	(n=600)
	Daily CC	21.3%	22.3%
	Daily e-cigarette	0.8%	1.3%
	Daily heated tobacco	0.7%	1.5%
	Daily cigars/pipes/Kiseru*	0.5%	0.1%
	Daily smokeless tobacco*	0.5%	0.7%
	Daily roll-your-own	0.1%	0.2%
	Daily chewing tobacco, snus, snuff	0.1%	0.1%
Initiation rates (Q8)		(n=143)	(n=151)
Base: Current users	Initiated via CC	96.0%	95.2%
	Initiated via e-cigarette	2.0%	2.4%
	Initiated via cigars/pipes/Kiseru*	1.5%	1.0%
	Initiated via heated tobacco	0.5%	0.5%
	Initiated via roll-your-own	0%	0%
	Initiated via smokeless tobacco*	0%	1.0%
	Initiated via chewing tobacco, snus, snuff	0%	0%
Re-initiation rates (Q11) (Q12) (Q14)		(n=600)	(n=600)
Base: Total survey population	Re-lapsed (on last quit attempt started using again after between 30 days and one year)	4.2%	5.4%
	Re-initiated (after last quit attempt started using again after more than one year)	3.6%	3.4%
		(n=46)	n=53
Base: Previously quit for more than 30 days	Prior to quit attempt, used CC	90.5%	95.8%
	Prior to quit attempt, used e-cigarette	13.2%	4.0%
	Prior to quit attempt, used heated tobacco	1.5%	1.3%
	Prior to quit attempt, used roll-your-own	0%	0%
	Prior to quit attempt, used cigars/pipes/Kiseru*	0%	2.8%
	Prior to quit attempt, used chewing tobacco, snus, snuff	0%	0%
	Prior to quit attempt, used smokeless tobacco*	0%	1.3%
		(n=46)	n=53
Base: Previously quit for more than 30 days	Re-initiated/re-lapsed after quit attempt via CC	98.5%	93.1%
	Re-initiated/re-lapsed after quit attempt via e-cigarette	0%	2.7%
	Re-initiated/re-lapsed after quit attempt via heated tobacco	1.5%	1.3%

	Re-initiated/re-lapsed after quit attempt via roll-your-own	0%	0%
	Re-initiated/re-lapsed after quit attempt via cigars/pipes/Kiseru*	0%	2.8%
	Re-initiated/re-lapsed after quit attempt via smokeless tobacco*	0%	0%
	Re-initiated/re-lapsed after quit attempt via chewing tobacco, snus, snuff	0%	0%
Quit rates (Q16) (Q17)		(n=600)	(n=600)
Base: Total survey population Base: Successful quitters (more than 30 days)	Quit tobacco or nicotine containing product use for more than 30 days	13.3%	12.6%
		(n=77)	(n=68)
	Prior to quitting used CC	97.3%	97.1%
	Prior to quitting, used e-cigarette	1.8%	0.9%
	Prior to quitting, used cigars/pipes/Kiseru*	0.9%	6.0%
	Prior to quitting, used chewing tobacco, snus, snuff	0%	0%
	Prior to quitting, used roll-your-own	0%	0%
	Prior to quitting, used heated tobacco	0%	0%
	Prior to quitting, used smokeless tobacco*	0%	0%
Patterns of concurrent use (Q1)		(n=600)	(n=600)
Base: Total survey population	Overall prevalence	22.0%	22.5%
	Use one tobacco or nicotine containing product daily	20.8%	20.7%
	Use two tobacco or nicotine containing products daily	0.9%	0.5%
	Use three tobacco or nicotine containing products daily	0.4%	1.4%

B. Key Measures

Prevalence of daily use of tobacco or nicotine containing products

The proportion of the survey population who are currently using at least one of manufactured cigarettes; e-cigarettes; roll-your-own cigarettes; cigars/pipes/Kiseru; smokeless tobacco; heated tobacco or chewing tobacco, snus and snuff **daily**. All manufactured and roll-you-own cigarette daily users have smoked 100 or more cigarettes in their lifetime. Similarly all daily heated tobacco users have used 100 or more *HeatSticks* or pods

QUESTION: Which, if any, of the following products are you currently using? For each product we would like to know if you currently: **[a] Use daily (I use it every day)**; **[b] Use less than daily (I use it only on some occasions)**; **[c] Do not use (I don't currently use)**

Prevalence of less than daily/ occasional use of tobacco or nicotine containing products

The proportion of the survey population who are currently using at least one of manufactured cigarettes; e-cigarettes; roll-your-own cigarettes; cigars/pipes/Kiseru; smokeless tobacco; heated tobacco or chewing tobacco, snus and snuff but **not** on a daily basis. All manufactured and roll-you-own cigarette less daily users have smoked 100 or more cigarettes in their lifetime. Similarly all daily heated tobacco users have used 100 or more *HeatSticks* or pods

QUESTION: Which, if any, of the following products are you currently using? For each product we would like to know if you currently: **[a] Use daily (I use it every day)**; **[b] Use less than daily (I use it only on some occasions)**; **[c] Do not use (I don't currently use)**

Initiation Rates

The tobacco or nicotine containing product that current users first started using regularly.

QUESTION: We would now like you to think about when you started to regularly use nicotine-containing or tobacco products. What was the first nicotine-containing or tobacco product that you started to use regularly?

Quit Rates

The proportion of the survey population who have previously used a tobacco or nicotine containing product but have since quit.

Attempting to quit: Discontinuing all tobacco or nicotine containing products for 24 hours and 30 days
Quit: Discontinuing all tobacco or nicotine containing products for more than 30 days

QUESTION: For how long have you stopped using tobacco/nicotine-containing products?

**Re-lapsed/ Re-initiation
Rates**

The proportion of survey population who have previously quit using tobacco or nicotine containing products, but have now starting using again.

Re-lapsed: Starting to use tobacco or nicotine containing products again after quitting tobacco or nicotine products for between 30 days and one year

Re-initiation: Starting to use tobacco or nicotine containing products again after quitting tobacco or nicotine products for more than one year

QUESTION: *Thinking about when you quit tobacco/nicotine-containing products (or your most recent attempt to quit if you've tried to quit more than once), for how long did you manage to stop using these products?*

Pattern of Concurrent Use

The number of tobacco or nicotine containing products used daily by current users.

QUESTION: *Which, if any, of the following products are you currently using? For each product we would like to know if you currently: [a] Use daily (I use it every day); [b] Use less than daily (I use it only on some occasions); [c] Do not use (I don't currently use)*

C. Confidence Intervals

Based on a sample size of 600 the below table gives the confidence intervals at a 95% confidence level.

Sample size	95% Confidence Interval					
	50%	40% or 60%	30% or 70%	20% or 80%	10% or 90%	5% or 95%
600	± 4.0%	± 3.9%	± 3.7%	± 3.2%	± 2.4%	±1.7%