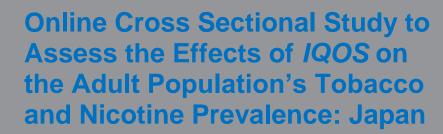


Ipsos Marketing
The Market Understanding and Measurement Specialists



Prepared for: Philip Morris International

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1. Background

PMI is continuing to develop a range of Novel Tobacco Products as "Reduced Risk Products" (RRP)¹. One of these products, the Heated Tobacco Product known as *IQOS*, is currently commercialized in various countries, including Japan.



In Japan, PMI launched *IQOS* with a geographically limited test launch in Nagoya in November 2014. Since April, 2016 *IQOS* is available nationwide.

The product is currently commercialized using the brand *IQOS* for the device and *HeatSticks* for the consumable Tobacco Sticks.

The product aims to give current adult smokers, who would otherwise continue smoking, an alternative to conventional cigarettes.

Since the initial pilot research in 2015, the only other heated tobacco product on the market (known as Ploom) is no longer available in Japan, therefore, *IQOS* is the only heated tobacco product currently available for purchase in Japan.

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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

PMI's R&D function is developing and will deploy studies to monitor the use of *IQOS* and other selected tobacco and nicotine containing products at the population-level in Japan. As the first outcomes from these studies are not yet available, PMI has decided to conduct a second online cross-sectional study to have more recent interim data on the potential effect that *IQOS* could have had on the Japanese adult population.

The main objectives of the study were to describe among the Japanese adult population:

- Prevalence of use of tobacco and nicotine containing products
- Initiation rates and the type of tobacco or nicotine containing product used to initiate
- Quit rates and re-initiation / relapse rates and the type of tobacco or nicotine containing product used to re-initiate / relapse
- Prevalence of concurrent use of tobacco and nicotine containing products.

3. Sample and Methodology

Sample criteria: Male and female adults 20+ (recruited from an online panel). Further information on the online panel can be found in the Appendix.

Sample size: 2000 adults (38,235 contacts were made to reach the sample size)

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

Sample recruitment: The sample was recruited by specific targeting based on the quotas required and randomly sent out within the quotas. If any of the sample quotas had not been met, the total sample size would have been achieved and the data weighted to the set quotas.

Quotas and Weighting: No weighting was applied to the data. Interlocking quotas were set, and met, on age/gender/area.

Area			Male					Female			Total
Alea	20-29	30-39	40-49	50+	Total	20-29	30-39	40-49	50+	Total	Total
Hokkaido / Tohoku	1.0%	1.2%	1.4%	2.1%	5.5%	0.9%	1.2%	1.4%	2.2%	5.6%	11.1%
Koshinetsu	0.9%	1.1%	1.3%	1.7%	4.9%	0.8%	1.0%	1.2%	1.7%	4.6%	9.4%
Shutoken	2.9%	3.6%	4.3%	4.7%	15.5%	2.7%	3.4%	4.0%	4.6%	14.7%	30.1%
Chubu	1.3%	1.6%	1.9%	2.4%	7.2%	1.2%	1.5%	1.8%	2.4%	6.9%	14.0%
Kansai	1.5%	1.7%	2.2%	2.6%	7.9%	1.5%	1.8%	2.2%	2.8%	8.2%	16.1%
Chugoku / Shikoku	0.8%	0.9%	1.1%	1.5%	4.2%	0.7%	0.9%	1.1%	1.6%	4.2%	8.4%
Kyushu	1.0%	1.2%	1.3%	2.0%	5.3%	1.0%	1.2%	1.4%	2.1%	5.7%	11.0%
Total	9.2%	11.2%	13.2%	16.8%	50.4%	8.8%	10.9%	12.9%	17.2%	49.7%	100.0%

Source: Population data acquired from Japan Statistics Bureau²

Areas were defined as:

Area definition Hokkaido / Hokkaido, Aomori, Iwate, Akita, Miyagi, Yamagata, Fukushima Tohoku Koshinetsu Nagano, Yamanashi, Niigata, Gunma, Tochigi, Ibaraki Shutoken Tokyo, Saitama, Chiba, Kanagawa Chubu Gifu, Shizuoka, Aichi, Mie, Fukui, Ishikawa, Toyama Kansai Kyoto, Osaka, Hyogo, Shiga, Nara, Wakayama Chugoku / Tottori, Shimane, Hiroshima, Okayama, Yamaguchi, Tokushima, Shikoku Kagawa, Ehime, Kochi Fukuoka, Saga, Nagasaki, Kumamoto, Miyazaki, Kagoshima, Oita, Kyushu Okinawa

² Population in Japan by age, gender and area based on the National census survey conducted from Sep 2015 to Oct 2015 http://www.stat.go.jp/english/index.htm

Research area: Nationwide

Fieldwork period: 26th September – 3rd October 2016

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

4. 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 products, 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 products 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 **products**, 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 **products** 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 proportion of the survey population who are current users of at least one tobacco or nicotine-containing product, divided according to the tobacco or nicotine containing product that they 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.

Initial quitters: Discontinuing all tobacco or nicotine containing products for between 24 hours and 30 days

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

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

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

Re-lapsed / Re-initiation Rates

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?

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

Pattern of Concurrent Use

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)

5. Key Findings

Prevalence of daily use of tobacco or nicotine containing products	22.8% of the survey population in Japan use one or more tobacco or nicotine containing product(s) daily. The vast majority of daily users smoke manufactured cigarettes (21.8%). A smaller proportion currently use heated tobacco products (2.3%) daily, namely <i>IQOS</i> (100%).
Initiation product	94.6% of current tobacco or nicotine containing products users initiated using manufactured cigarettes. A minority initiated using other products such as e-cigarettes (2.2%) or heated tobacco products (1.2%, 6 participants). Of those, 5 of the 6 initiated using <i>IQOS</i> , and 1 initiated using Ploom.
Initial Quitters	0.1% of the survey population has stopped using all tobacco or nicotine containing products between 24 hours and 30 days.
Quitters	11.8% of the survey population has stopped using all tobacco or nicotine containing products for over 30 days.
Re-lapse rates	4.4% of the survey population re-lapsed after discontinuing tobacco or nicotine containing product usage for between 30 days and one year.
Re-initiation rates	3.1% of the survey population re-initiated tobacco or nicotine containing products after quitting for more than one year.
Patterns of Concurrent Use	20.1% of the survey population use just one tobacco or nicotine containing product on a daily basis, while 1.7% use two products and 1.1% use three products.

6. Prevalence of Use of Tobacco or Nicotine Containing Products

6.1.1 Daily Usage

Overall, more than a fifth (22.8%) of the survey population use one or more tobacco or nicotine containing product(s) daily. Figure 1

The proportion of males participating in the survey (31.6%), who are using tobacco or nicotine containing products on a daily basis, is significantly³ higher than the proportion of females (13.8%). Figure 1

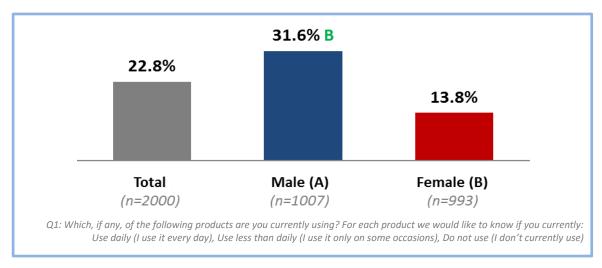


Figure 1 – Prevalence of use of tobacco or nicotine containing product usage (daily) among adults, by gender

There are significant differences in the prevalence of daily usage of tobacco or nicotine products across age groups. Prevalence among 30-39 year olds (26.6%) is higher than 40-49 year olds (24.7%) and significantly higher than 20-29 year olds (18.4%) and those aged 50-64 year olds (21.1%). Figure 2

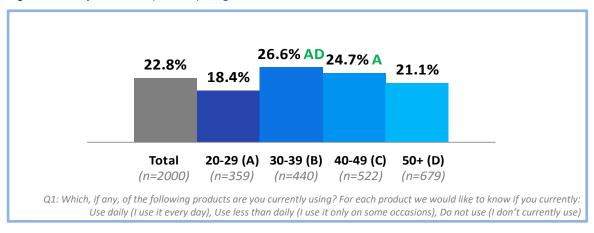


Figure 2 – Prevalence of use of tobacco or nicotine containing product usage (daily) among adults, by age

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

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

The majority (21.8%) of daily users smoke manufactured cigarettes, while the other tobacco or nicotine containing products are much less commonly used, with 2.3% of the survey population currently using heated tobacco products and 1.8% using e-cigarettes. Table 1

Table 1 – Daily usage of tobacco or nicotine containing products

	PRODUCT	DAILY USAGE (%) (n=2000)
	Manufactured cigarettes	21.8%
	Heated tobacco products	2.3%
	E-cigarettes ⁴ ⁵	1.8%
	Smokeless tobacco pipes	0.7%
11/	Cigars / pipes / Kiseru	0.4%
	Roll-your-own cigarettes	0.3%
	Chewing tobacco, snus and snuff	0.2%

Among the adult survey population, there is a significantly larger proportion of males (30.2%) smoking manufactured cigarettes on a daily basis compared with females (13.3%). In addition, although only a small proportion of the survey population use these products, males are significantly more likely than females to use heated tobacco products, ecigarettes, smokeless tobacco pipes and chew tobacco, snus and snuff. Table 2

⁴ Includes e-cigarettes with and without nicotine

⁵ Includes Ploom Tech: a device, composed of a battery and cartridge, which generates vapor from the liquid in the cartridge and that passes through a tobacco capsule (filled with granulated tobacco leaves)

Table 2 – Daily usage of tobacco or nicotine containing products, by gender

	Male (A) (n=1007)	Female (B) (n=993)
Manufactured cigarettes	30.2% (B)	13.3%
Heated tobacco products	3.6% (B)	1.0%
E-cigarette	3.2% (B)	0.4%
Smokeless tobacco pipes	1.1% (B)	0.3%
Cigars / pipes / Kiseru	0.6%	0.1%
Roll-your-own cigarettes	0.4%	0.1%
Chewing tobacco, snus and snuff	0.4% (B)	0.0%

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

The proportion of 20-29 year olds (16.7%) smoking manufactured cigarettes is significantly lower than 30-39 year olds (22.5%) and 40-49 year olds (23.9%).

The younger age group (20-39 years old) are using heated tobacco products (4.0%), ecigarettes (3.6%) and smokeless tobacco pipes (1.6%) significantly more than the older age group (40+) (1.2% heated tobacco products, 0.6% e-cigarettes and 0.1% smokeless tobacco pipes). Table 3.

Table 3 – Daily usage of tobacco or nicotine containing products, by age

	20-29 (A) (n=359)	30-39 (B) (n=440)	40-49(C) (n=552)	50+ (D) (n=679)
Manufactured cigarettes	16.7%	22.5% (A)	23.9%(A)	20.5%
Heated tobacco products	4.2% (CD)	3.9% (CD)	1.5%	0.9%
E-cigarettes	4.2% (CD)	3.2% (CD)	1.1% (D)	0.1%
Smokeless tobacco pipes	1.9% (CD)	1.4% (CD)	0.2%	0.0%
Cigars / pipes / Kiseru	0.8% (D)	0.5%	0.4%	0.0%
Roll-your-own cigarettes	0.6%	0.2%	0.2%	0.1%
Chewing tobacco, snus and snuff	0.8% (CD)	0.2%	0.0%	0.0%

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

6.1.2 Occasional Usage

A small proportion (5.3%) of the survey population use tobacco or nicotine containing products occasionally. Manufactured cigarettes were the most occasionally used tobacco or nicotine containing products (2.0%), followed by e-cigarettes (1.8%), heated tobacco products (1.4%), smokeless tobacco pipes (1.4%) and cigars/pipes/Kiseru (1.4%). Table 4

Table 4 – Occasional usage of tobacco or nicotine containing products

	PRODUCT	OCCASIONAL USAGE (%) (n=2000)
	Manufactured cigarettes	2.0%
<u> </u>	E-cigarettes ^{6 7}	1.8%
	Heated tobacco products	1.4%
	Smokeless tobacco pipes	1.4%
11/	Cigars / pipes / Kiseru	1.4%
	Chewing tobacco, snus and snuff	1.2%
	Roll-your-own cigarettes	1.1%

⁶ Includes e-cigarettes with and without nicotine

⁷ Includes Ploom Tech: a device, composed of a battery and cartridge, which generates vapor from the liquid in the cartridge and that passes through a tobacco capsule (filled with granulated tobacco leaves)

7. Initiation Rates

Manufactured cigarettes are by far the most commonly used product to initiate the use of tobacco or nicotine containing product among current tobacco or nicotine containing products users (94.6%). All the other products are comparatively much smaller, with 2.2% of the survey population who stated they initiated using e-cigarettes and 1.2% who stated they initiated using heated tobacco products. Figure 3

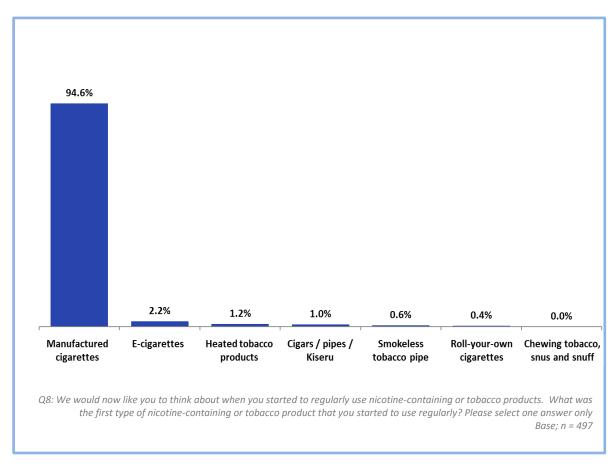


Figure 3 – First product used to initiate tobacco or nicotine containing products usage

8. Quit Rates

At the time of the survey, an extremely low percentage (0.1%) of the survey population were 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).

Comparatively, a larger proportion (11.8%) of the survey population have quit all tobacco or nicotine containing products for more than 30 days at the time of the survey.

The vast majority of those who have quit for more than 30 days were previously using manufactured cigarettes (97.4%). The remaining were using e-cigarettes (1.7%), cigars/pipes/Kiseru (1.3%) and only 0.4% were using heated tobacco products.

9. Re-lapse / Re-initiation Rates

At the time of the survey, a low percentage (4.4%) of the survey population re-lapsed after discontinuing tobacco or nicotine containing product usage for between 30 days and one year. At the same time, 3.1% of the survey population re-initiated after quitting tobacco or nicotine product usage for more than one year. Table 5

Table 5 – Proportion of short-term and long-term quitters who re-lapsed and re-initiated respectively

	% of Quitters (n=2000)
Between 1 month and 12 months Short term quitters	4.4%
Longer than 1 year Long term quitters	3.1%

Prior to their quit attempt (30 days+), of the 148 participants who have attempted to quit for longer than 30 days, the vast majority smoked manufactured cigarettes (93.2%). The remaining stopped after using e-cigarettes (6.1%) followed by heated tobacco products (4.7%) and smokeless tobacco (4.1%).

When these users resumed tobacco or nicotine containing product use, the vast majority (90.5%) re-initiated tobacco or nicotine containing tobacco usage through manufactured cigarettes, while a small minority re-initiated through e-cigarettes (4.1%), cigars/pipes/Kiseru (2.0%) and only 0.7% re-initiated through heated tobacco products. Figure 4

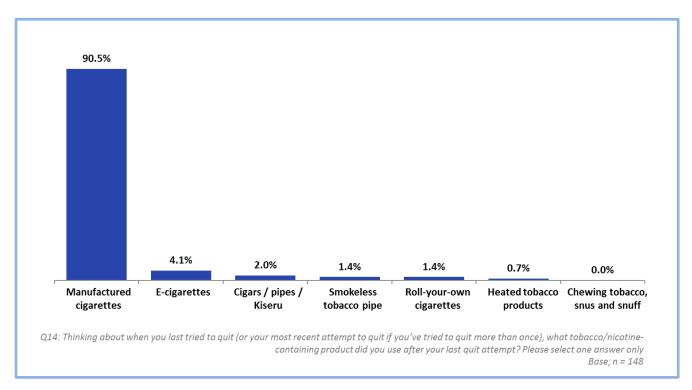


Figure 4 – Product used to re-initiate tobacco or nicotine containing product usage after quitting for more than 30 days

10. Patterns of Concurrent Use

20.1% the survey population use just one tobacco or nicotine containing product on a daily basis, while 1.7% use two products and 1.1% use three products.

11. Appendix

A. Table 6 - Key Figures

Prevalence of use of tol	oacco or nicotine containing products (Q1)	(n=2000)
	Prevalence of use (use tobacco or nicotine product(s))	24.9%
Base: Total survey	Prevalence of daily use	22.8%
population	Prevalence of occasional (less than daily) use	5.3%
	Do not use tobacco or nicotine products	75.2%
		(n=2000)
	Daily manufactured cigarettes	21.8%
	Daily heated tobacco products	2.3%
	Daily e-cigarette	1.8%
	Daily smokeless tobacco	0.7%
	Daily cigars/pipes/Kiseru	0.4%
	Daily roll-your-own	0.3%
	Daily chewing tobacco, snus, snuff	0.2%
Initiation rates (Q8)		(n=497)
Base: Current users	Initiated via manufactured cigarettes	94.6%
	Initiated via e-cigarette	2.2%
	Initiated via heated tobacco products	1.2%
	Initiated via cigars/pipes/Kiseru	1.0%
	Initiated via smokeless tobacco	0.6%
	Initiated via roll-your-own	0.4%
	Initiated via chewing tobacco, snus, snuff	0.0%

Re-initiation rates (Q11)	(Q12) (Q14)	(n=2000)
Base: Total survey population	Re-lapsed (after last quit attempt started using again after 30 days to one year)	4.4%
	Re-initiated (after last quit attempt started using again after more than one year)	3.1%
		(n=148)
Dagas Duasias also assist fam	Prior to quit attempt, used manufactured cigarettes	93.2%
Base: Previously quit for more than 30 days	Prior to quit attempt, used e-cigarette	6.1%
more than so days	Prior to quit attempt, used heated tobacco products	4.7%
	Prior to quit attempt, used smokeless tobacco	4.1%
	Prior to quit attempt, used cigars/pipes/Kiseru	2.7%
	Prior to quit attempt, used roll-your-own	2.0%
	Prior to quit attempt, used chewing tobacco, snus, snuff	1.4%
		(n=148)
Base: Previously quit for more than 30 days	Re-initiated/re-lapsed after quit attempt via manufactured cigarettes	90.5%
,	Re-initiated/re-lapsed after quit attempt via e- cigarette	4.1%
	Re-initiated/re-lapsed after quit attempt via cigars/pipes/Kiseru	2.0%
	Re-initiated/re-lapsed after quit attempt via smokeless tobacco	1.4%
	Re-initiated/re-lapsed after quit attempt via roll-your- own	1.4%
	Re-initiated/re-lapsed after quit attempt via heated tobacco products	0.7%
	Re-initiated/re-lapsed after quit attempt via chewing tobacco, snus, snuff	0.0%
Quit rates (Q16) (Q17)		(n=2000)
Base: Total survey population	Quit tobacco or nicotine containing product use for more than 30 days	11.8%
		(n=234)
Base: Successful quitters (more than 30	Prior to quitting used manufactured cigarettes	97.4%
days)	Prior to quitting, used e-cigarette	1.7%
<i>uajo</i> ,	Prior to quitting, used cigars/pipes/Kiseru	1.3%
	Prior to quitting, used smokeless tobacco	0.9%
	Prior to quitting, used heated tobacco products	0.4%
	Prior to quitting, used roll-your-own	0.4%
	Prior to quitting, used chewing tobacco, snus, snuff	0.0%
Patterns of concurrent u	ise (Q1)	(n=2000)
Base: Total survey	Overall prevalence	22.8%
population	Use one tobacco or nicotine containing product daily	20.1%
	Use two tobacco or nicotine containing products daily	1.7%
	Use three tobacco or nicotine containing products daily	1.1%

B. Table 7 - Confidence Intervals

Based on a sample size of 2000 the below table gives the confidence intervals at a 95% confidence level.

Sample	95% Confidence Interval									
Sample size	50%	40% or 60%	30% or 70%	20% or 80%	10% or 90%	5% or 95%				
2000	± 2.2%	± 2.1%	± 2.0%	± 1.8%	± 1.3%	± 1.0%				

C. Table 8 - Further Online Panel Information

Size of the panel: 4,570,000 adults

Number of contacts made to get to the final sample:

			Male					Female	9		
Area	20- 29	30- 39	40- 49	50+	Total	20- 29	30- 39	40- 49	50+	Total	Total
Hokkaido / Tohoku	631	385	408	865	2289	564	444	545	538	2091	4380
Koshinetsu	586	324	341	414	1665	672	388	355	442	1857	3522
Shutoken	1527	1057	651	832	4067	1435	1222	1220	1141	5018	9085
Chubu	1592	634	559	781	3566	1103	519	586	753	2961	6527
Kansai	1094	430	419	398	2341	1111	819	767	697	3394	5735
Chugoku / Shikoku	445	288	334	372	1439	557	413	391	438	1799	3238
Kyushu	972	620	414	550	2556	947	1018	614	613	3192	5748
Total	6847	3738	3126	4212	17923	6389	4823	4478	4622	20312	38235