

# Sociodemographic Characteristics of “Heat-not-Burn” Product Users Compared with Cigarette Smokers: First-Year Results of a Repeated Cross-Sectional Survey in Japan

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## Introduction and Objectives

- A number of tobacco/nicotine-containing products have emerged in the last 10 years, some of them as part of a tobacco harm reduction strategy to improve public health and lower the individual risk of smoking-related diseases.
- At PMI we refer to the latter as reduced risk products (RRP), i.e. products that present, are likely to present, or have the potential to present less risk of harm to smokers who switch to these products versus continued smoking.
- However, little is known about the sociodemographic characteristics of cigarette smokers who started using RRP as compared with cigarette smokers who did not.
- Here, we describe age, gender, educational, and occupational characteristics of users of a novel RRP (Philip Morris International’s Tobacco Heating System (THS), commercialized in Japan and various other markets as IQOS®) and of cigarette smokers in the Japanese adult general population.**

## Methods

- Repeated cross-sectional survey** in a representative sample of the Japanese adult general population aged 20+ years (legally authorized to buy tobacco products).
- Household survey with self-completion paper questionnaire.
- Annual target sample size: N = 5000, sampled over four waves. Data for the first year was collected from December 2016 to July 2017.
- Participants sampled via a multipurpose survey (Omnibus) based on a **three-stage, stratified, proportional sampling strategy** covering the whole country.
- The study protocol and associated documents were submitted to, reviewed, and approved by the Hakata Clinic Institutional Review Board.
- Current THS users** were defined as using THS regularly (daily or non-daily within the last 30 days), irrespective of any concurrent use of other tobacco products.
- Current cigarette smokers** were defined as smoking cigarettes regularly (daily or non-daily within the last 30 days) with no concurrent use of THS.

## Sample Disposition

For the first year of the survey, a response rate of 30.5% was achieved. This equates to 4,878 individuals completing the survey from a starting sample of 16,000 individuals.

Only 10 individuals (0.1%) who agreed to participate in the multipurpose survey refused their participation in the tobacco survey part. See Figure 1 for a breakdown of participation rate.

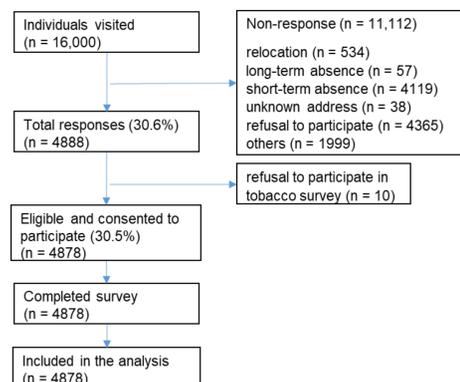


Figure 1: Flow diagram of study sample constitution and response rate.

## Sociodemographic Characteristics

Table 1 presents the sociodemographic characteristics of the Japanese population (based on recent census data), the total study sample, and the samples of THS Users and Cigarette Smokers.

CI : Confidence Interval

		Japanese Population <sup>1</sup>	Total SAMPLE (N=4878)	THS Users (N=86)	Cigarette Smokers (N=792)
			[95% CI]	[95% CI]	[95% CI]
<b>Age (mean)</b>	Years	46.3	53.7 [53.2 – 54.3]	39.9 [37.4 – 42.4]	48.7 [47.6 – 49.8]
<b>Sex (%)</b>	Male	48.3	48.1 [46.6 – 49.5]	81.4 [71.5 – 89.0]	75.9 [72.7 – 78.9]
	Female	51.7	51.9 [50.5 – 53.4]	18.6 [11.0 – 28.5]	24.1 [21.1 – 27.3]
<b>Education Level (%)</b>	Junior high school	8.6	9.3 [8.5 – 10.2]	5.8 [1.9 – 13.1]	9.3 [7.4 – 11.6]
	High school	40.1	49.1 [47.6 – 50.6]	51.2 [40.1 – 62.2]	55.2 [51.6 – 58.7]
	College/University	41.8	40.6 [39.2 – 42.0]	43.0 [32.3 – 54.2]	34.8 [31.5 – 38.3]
	Don't Know/Not applicable	9.5	1.0 [0.7 – 1.4]		0.6 [0.2 – 1.5]
<b>Occupation (%)</b>	Farming/Agriculture/Fishery		1.6 [1.3 – 2.1]	1.2 [0.0 – 6.4]	1.1 [0.5 – 2.2]
	Self-employed/Small private business	12.1 <sup>2</sup>	11.0 [10.1 – 12.0]	17.4 [10.1 – 27.2]	18.4 [15.7 – 21.4]
	Clerical employee		19.0 [17.9 – 20.2]	33.7 [23.8 – 44.8]	15.8 [13.3 – 18.6]
	Manual employee		21.8 [20.6 – 23.0]	36.0 [25.9 – 47.2]	36.0 [32.6 – 39.5]
	Managing profession	46.9 <sup>3</sup>	2.4 [2.0 – 2.9]	5.8 [1.9 – 13.1]	4.0 [2.7 – 5.7]
	Homemaker	19.9	24.8 [23.6 – 26.1]	4.7 [1.2 – 11.5]	7.3 [5.6 – 9.4]
	Student	2.0	2.2 [1.7 – 2.7]		2.0 [1.1 – 3.3]
	Retired/Unemployed	19.1	17.1 [16.0 – 18.3]	1.2 [0.0 – 6.4]	15.3 [12.8 – 18.0]

Table 1: Age, sex, education, and occupation distribution in the Japanese population and the study samples.

<sup>1</sup> Source: Statistics Bureau of Japan (2015) Source on Education: Statistics Bureau of Japan (2010) Source on Occupation: Public Opinion Survey on the Life of the People (23 June - 10 July 2016).

<sup>2</sup> Self-employed and farming and agriculture.

<sup>3</sup> Employed.

- Due to the exclusion of the population below the age of 20, the average age in the total study sample (53.7 years) was higher as compared to the average age from the census data (46.3 years), which includes all age ranges. With an average age of 39.9 years, **THS Users were younger than Cigarette Smokers (48.7 years)**.
- The majority of users in both samples was male, and high school completion was the highest level of education. However, **more THS Users completed college/university (43.0%) as compared with Cigarette Smokers (34.8%)**.
- While the most common occupation in both samples was manual employee, there were twice as many clerical workers in the THS Users group as compared with the Cigarette Smokers (33.7% vs 15.8%). In addition, there were considerably **more retired/unemployed participants among Cigarette Smokers as compared with THS Users (15.3% vs. 1.2%)**.

## Prevalence of IQOS and Cigarette Use

As shown in Figure 2 below, **prevalence of current THS use was 1.8% [95%CI:1.4–2.2%] (n=86)**, while current cigarette smoking (excluding IQOS use) was 16.3% [95%CI: 15.2–17.4%] (n=792) in the study sample of the adult general population.

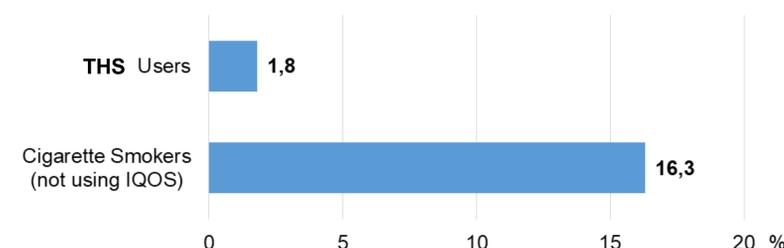


Figure 2: Pattern of current tobacco use in the study sample.

## Conclusions

- Better understanding of sociodemographic profiles of RRP users can give insight into factors hindering or facilitating tobacco harm reduction in a given population.
- Findings suggest that THS users differ from cigarette smokers in certain sociodemographic characteristics, including age, education, and employment status.
- Younger and more educated groups generally tend to be early adopters of novel technologies, such as IQOS, which may explain the greater prevalence of THS use within these groups.<sup>1</sup>
- Higher prevalence of smoking in those with lower socioeconomic status is known to be associated with greater health inequalities<sup>2</sup>; hence, further research and public health interventions should focus on barriers to smoking cessation/switching to RRP in these groups.
- The study was not powered to detect statistically significant differences in sociodemographic characteristics. Hence, data are presented descriptively only, and results should be interpreted accordingly.

<sup>1</sup> Rogers EM. Diffusion of innovations. 5th edn. New York: Free Press, 2003.

<sup>2</sup> Jha P, Peto R, Zatonski W, et al. Social inequalities in male mortality, and in male mortality from smoking: indirect estimation from national death rates in England and Wales, Poland, and North America. Lancet 2006;368:367–70.