Understanding the Consumption of Cigarettes and Cigarette-like Products in Turkey: Completed Research and a Roadmap for New Research

Asena Caner (TOBB ETÜ and ERAA)

September 18, 2023

presented at the

IDF International Symposium on Tobacco Harm Reduction Strategy

Disclosure:

- Produced with the help of a grant from the Foundation for a Smoke-Free World, Inc. (“FSFW”), a US nonprofit 501(c)(3) private foundation.
- The contents, selection, and presentation of facts, as well as any opinions expressed herein are the sole responsibility of the authors and under no circumstances shall be regarded as reflecting the positions of the Foundation for a Smoke-Free World, Inc.
- FSFW accepts charitable gifts from PMI Global Services Inc. (PMI); under FSFW’s Bylaws and Pledge Agreement with PMI, FSFW is independent from PMI and the tobacco industry.

Economics of Curbing Smoking in Turkey

- Work that has been done by our research group
- Ongoing work
- Work that is to be done

Work that has been done (in collaboration with researchers from TEPAV and TOBB ETÜ)

- Published research paper: “Perceptions of plain packaging and health warnings among university students in Turkey: a survey-based experiment” (Asena Caner, Belgi Turan, Mehmet Y. Gürdal, Sibel Güven)
- Working paper: “The Impact of Covid-19 on Smoking Among University Students in Turkey: Evidence from a Longitudinal Survey” (Yenal Can Yigit, Asena Caner, Belgi Turan)
- Working paper: “A Mixed Methods Analysis of Symbolic Self-Completion as a Mediator between Smoking Dependence and Quit Intention” (Berna Tarı Kasnakoğlu, Asena Caner)
- Descriptive Statistics on Smoke-Free Products in Turkey: Evidence from a survey on university students (2021) (Asena Caner, Sibel Güven, Taylan Kurt)

Published research paper:

Perceptions of plain packaging and health warnings among university students in Turkey: a survey-based experiment

Asena Caner, Belgi Turan ,
Mehmet Y. Gürdal, Sibel Güven

Perceptions of plain packaging and health warnings among university students in Turkey: a survey-based experiment

- The effects of plain packaging (PP) and graphic health warnings (GHWs) on
  - negative affect,
  - avoidant responses, and
  - intentions to quit

among university students.

- Data collected online (via SurveyMonkey) from university students in Turkey

Setting – Policy environment in Turkey

- Before 2010:

Cigarette packs sold in Turkey only had text warnings (no GHWs). Brand logos were visible and packs were printed in brand-specific colors.

- In 2010: Combined (text+graphic) health warnings introduced

  (i.e., GHWs added to the text warnings).

- In Nov 2018 (Law #7151), Mar 2019 (subsequent regulation):

PP was introduced, to be effective by Jan 2020. Moreover, combined health warnings were replaced by stronger text warnings and accompanying more striking GHWs.

Method:
Survey experiment with treatment and control groups

Condition 1: Brand logos + Old text warnings (no pictorial warnings) (before 2010)

Condition 2: Brand logos + Old text warnings with pictorial warnings

Condition 3: Brand logos + New text and pictorial warnings

Condition 4: No Brand logos (PP, black background) + Old text and pictorial warnings

Condition 5: No Brand logos (PP, black background) + New text and pictorial warnings (current situation)

Method

A sample of 7 (out of a total of 14) images of cigarette packs in the randomly assigned conditions

Condition 1:

Condition 2:

Condition 3:

Condition 4:

Condition 5:

Regressions to compare package design elements

	(1)	(2)	(3)	(4)
	Negative Affect			
Condition 1	0	-0.21*	-0.53***	-0.70***
Condition 2	0.21*	0	-0.31***	-0.48***
Condition 3	0.53***	0.31***	0	-0.17
Condition 4	0.70***	0.48***	0.17	0
Condition 5	0.75***	0.53***	0.22	0.051
	Avoidant Responses			
Condition 1	0	-0.17	-0.59***	-0.62***
Condition 2	0.17	0	-0.42***	-0.46***
Condition 3	0.59***	0.42***	0	-0.031
Condition 4	0.62***	0.46***	0.031	0
Condition 5	0.70***	0.53***	0.11	0.078
	Intentions to Quit			
Condition 1	0	-0.039	-0.047	-0.065**
Condition 2	0.039	0	-0.0083	-0.026
Condition 3	0.047	0.0083	0	-0.018
Condition 4	0.065**	0.026	0.018	0
Condition 5	0.065*	0.027	0.018	0.00044
N	623	623	623	623

Summary of the results

Condition 1 vs. Condition 2 (Column (1)):	Adding pictorial warnings to packages with text warnings and brand logos	Generated **more** negative affect (low significance)
Condition 2 vs. Condition 3 (Column (2)):	Replacing old text and pictorial warnings with new and stronger ones (when brand logos are visible)	Generated **more** negative affect and avoidant responses.
Condition 2 vs. Condition 4 (Column (2)):	Removing brand logos from the packs that had old text and pictorial warnings	Generated **more** negative affect and avoidant responses.
Condition 3 vs. Condition 5 (Column (3)):	Removing brand logos from the packs that had new text and pictorial warnings	No effect
Condition 4 vs. Condition 5 (Column (4)):	Replacing old text and pictorial warnings with new and stronger ones (on plain packs)	No effect

Working paper:

The Impact of Covid-19 on Smoking Among University Students in Turkey: Evidence from a Longitudinal Survey

Yenal Can Yigit, Asena Caner, Belgi Turan

Data and Method

- Data collected by two online surveys on SurveyMonkey, one conducted in 2018 and the other in 2021, in several large-enrollment universities in Turkey.

Methods of Analysis

- Binary logistic regressions (Daily Use, Regular Use)
- Ordered logistic regression: Amount of daily cigarette consumption (0: none, 1: 1-10 cigarettes, 2: 11-20 cigarettes, 3: 21-30 cigarettes, 4: 31 or more).

➢ Adjusted odds ratios estimated

➢ Regressions estimated for men and women separately

Outcome variables:

- **Daily Use** and **Regular Use** (daily or occasional) of cigs (both binary)
- **Cigs Consumed**: Number of cigarettes consumed on an average day
- **QuitDaily**: Student used to be a daily smoker but quit
- **QuitRegular**: Student used to be a regular smoker but quit

Confounders: Gender, age at the time of the survey, and living arrangement of the student (four categories: In dormitory, alone (outside of dormitory), with family, or with roommate(s)), which were derived from the questions that were common to both surveys.

Post-COVID (binary): Observed in 2021 survey (1) or in 2018 survey (0).

Results: The effect of COVID-19 on smoking behavior (odds ratios)

	Daily Use		Regular Use		Cigs Consumed	
	Men	Women	Men	Women	Men	Women
Post-COVID dummy	0.691***	0.636***	0.711***	0.785**	0.649***	0.743**
	(0.081)	(0.083)	(0.080)	(0.090)	(0.072)	(0.087)
Age (years)	1.093***	1.089***	1.064***	1.109***	1.103***	1.126***
	(0.025)	(0.029)	(0.025)	(0.031)	(0.025)	(0.030)
Living arrangement						
With family	1	1	1	1	1	1
With roommate(s)	1.810***	2.242***	2.274***	2.513***	1.975***	2.087***
	(0.358)	(0.559)	(0.487)	(0.642)	(0.341)	(0.457)
Alone	1.857***	2.669***	2.451***	2.780***	2.235***	3.312***
	(0.356)	(0.648)	(0.507)	(0.681)	(0.379)	(0.873)
In dormitory	0.768**	0.830	0.835	0.854	0.781**	0.941
	(0.0927)	(0.113)	(0.0966)	(0.104)	(0.0861)	(0.116)
N	1,753	1,673	1,753	1,673	1,753	1,673

Results: The effect of COVID-19 on quit behavior (odds ratios)

	Quit Daily		Quit Regular	
	Men	**Women**	**Men**	**Women**
Post-COVID dummy	1.401	2.279***	1.048	1.124
	(0.367)	(0.693)	(0.160)	(0.167)
Age (years)	1.129***	1.063	0.985	0.939*
	(0.053)	(0.053)	(0.032)	(0.034)
Living arrangement:				
With family	1	1	1	1
With roommate(s)	0.352*	0.182*	0.371***	0.372***
	(0.217)	(0.185)	(0.119)	(0.134)
Alone	0.567	0.642	0.586**	0.398***
	(0.241)	(0.378)	(0.149)	(0.137)
In dormitory	1.401	1.486	1.175	1.252
	(0.378)	(0.482)	(0.178)	(0.190)
N	776	518	1,232	1,067

Working paper:

A Mixed Methods Analysis of Symbolic Self-Completion as a Mediator between Smoking Dependence and Quit Intention

Berna Tarı Kasnakoğlu, Asena Caner

Data and Method

- Quantitative data collected by nationwide surveys (CATI) in 12 regions of Turkiye among adults (as part of the project at Tepav).
- Qualitative data collected via in-depth semi-structured interviews (at Tepav and TOBB-ETÜ) among Turkish adults.

Method of Analysis:

- Mediation analysis using quantitative data, complemented by insights from qualitative data

Variables:

- Heaviness of Smoking Index (HSI):

A composite measure (with a range 0-6) that is the sum of two categorical measures:

1) Cigarettes consumed per day,

2) Time to 1st cigarette of the day after waking up.

Variables:

- Quit intention:

Conceptualized as a behavioral continuum, rather than a 0-1 attitude. Average of the responses to 3 questions:

1) "I want to quit smoking" and

2) "I want to reduce if not quit smoking" (higher score for a higher level of agreement);

3) Time frame for quitting? Pick one: "Not sure if I want to quit in the near future", "Will quit in the next year", or "Will quit in the next month" (higher score for a shorter time frame)

Variables:

- Absence of Self-Completion (ASC):

"Smoking does not suit me.";

"Ideally, I would not be a smoker";

"My ideal self does not smoke.";

"My family and friends do not approve of my smoking."

(All were 3-point Likert scales; higher scores for higher level of agreement).

Hypotheses:

H1: Higher dependence is associated with a lower level of quit intention.

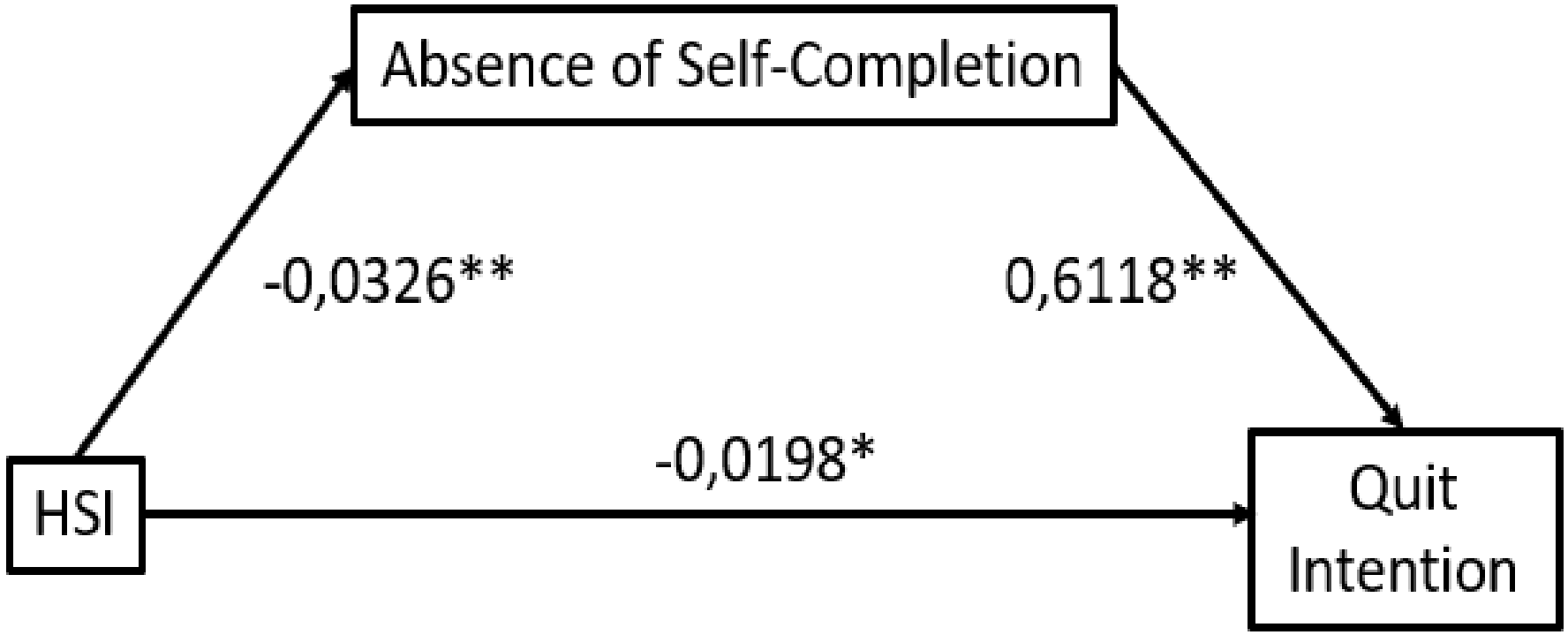
H2: Absence of symbolic self-completion leads to a greater intention to quit smoking.

H3: Symbolic self-completion as a smoker mediates the relationship between dependence and quit intentions.

Variables:

	HSI	QI	ASC
Mean	2.4971	1.7034	1.5028
Correlation coefficients:			
Heaviness of Smoking Index	1	-0.104**	-0.105**
Quit Intention	-	1	0.518**
Absence of Self-Completion	-	-	1

The Mediating Role of Self-Completion:



Results --Mediation analysis:

1) Heaviness of smoking index (HSI), is negatively associated with QI (coefficient=—0,039, p-value=0.01), therefore H1 is satisfied.
2) ASC increases QI (p-value<0,00), therefore, H2 is also satisfied.
3) The introduction of the mediator variable (ASC) reduces statistical significance of HSI.
4) The indirect effect of HSI on QI (through ASC) is highly significant. Confidence int. (–0,0307, –0,0089) excludes zero.

- Consequently, self-completion is a significant mediator. H3 is satisfied.
- ASC partially mediates the relationship between HSI and QI.

The Relationship between Self-Completion and Smoking: A Typology

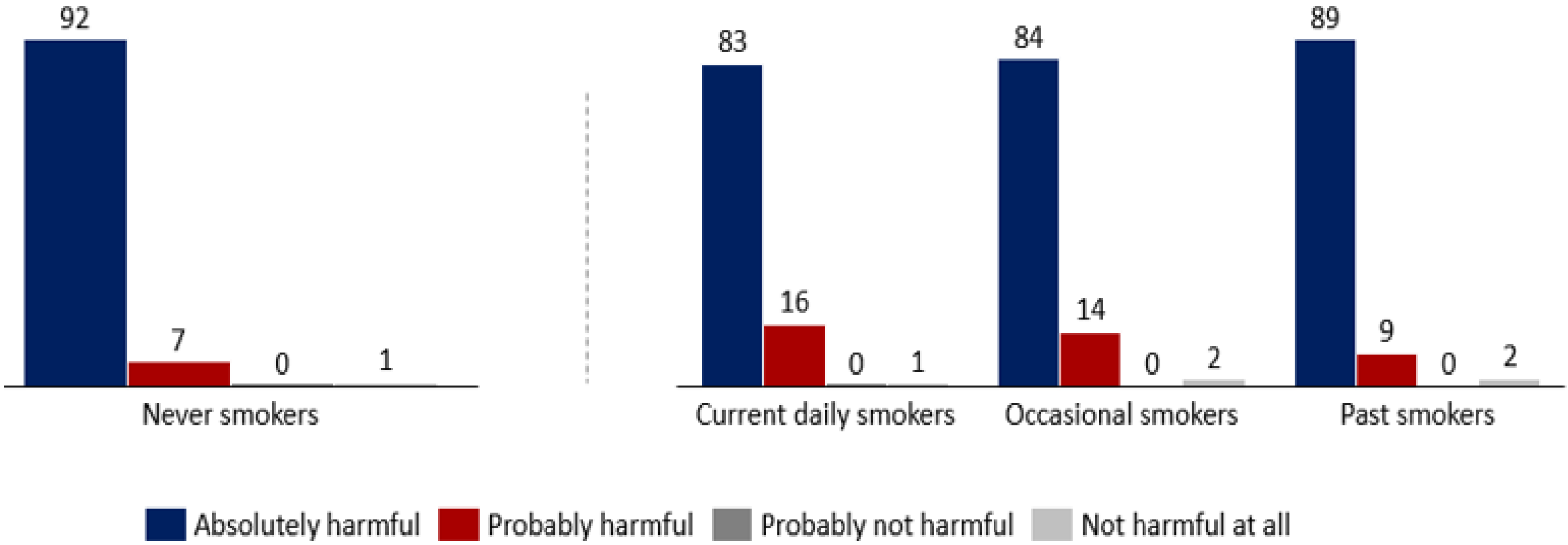
	Self-Completion	No Self-Completion
Smoker	Continues as a smoker	Intends to quit
Nonsmoker	Continues as a nonsmoker	Starts smoking

Descriptive Statistics on Smoke-Free Products in Turkey: Evidence from a survey on university students (2021)

Asena Caner, Sibel Güven, Taylan Kurt

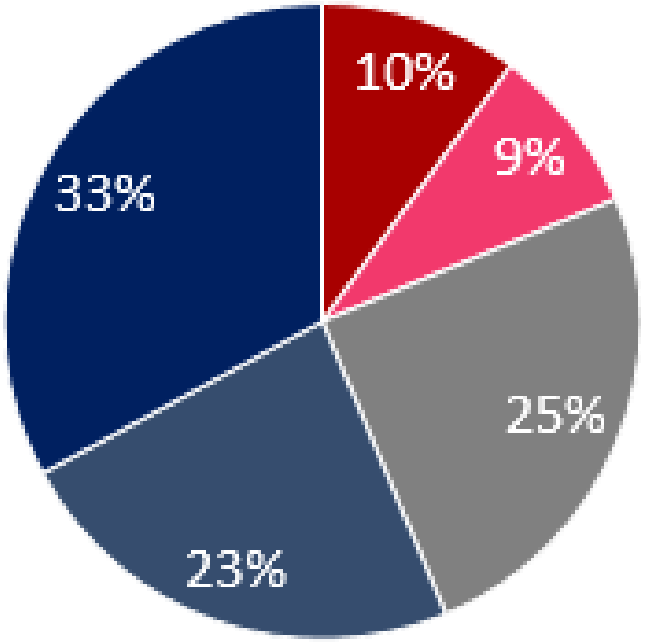
Cigarette harm perception

Do you think smoking is harmful for health? (%)

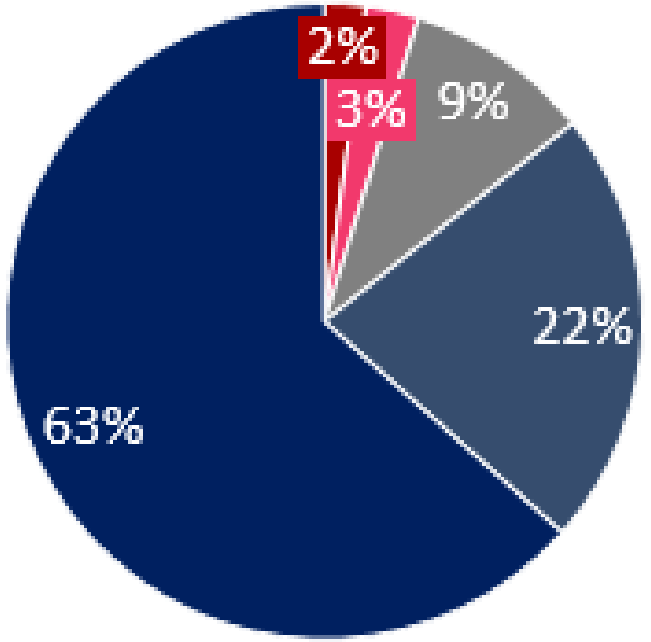


Perceptions on Nicotine and Cigarettes (Current daily smokers)

Nicotine causes cancer

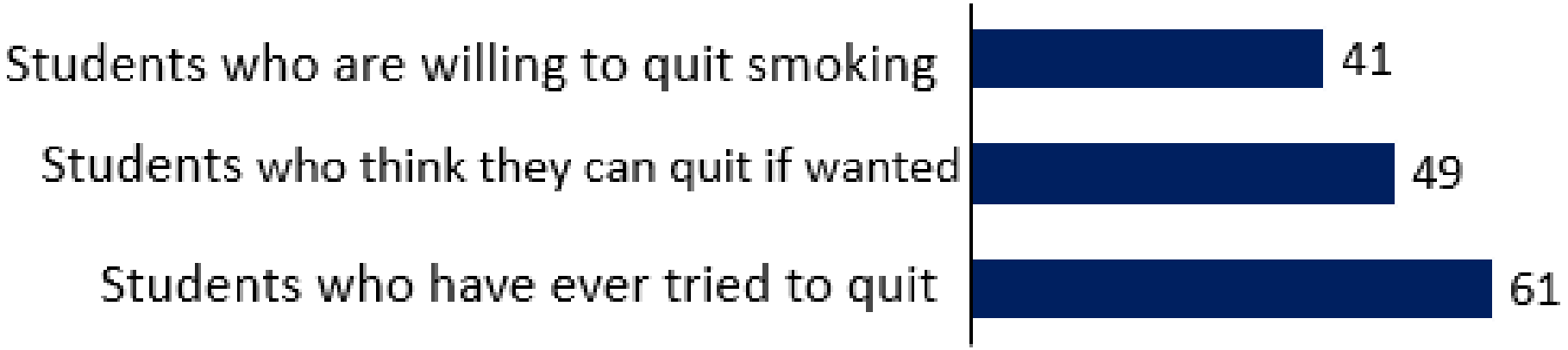


Smoking cigarettes is addictive



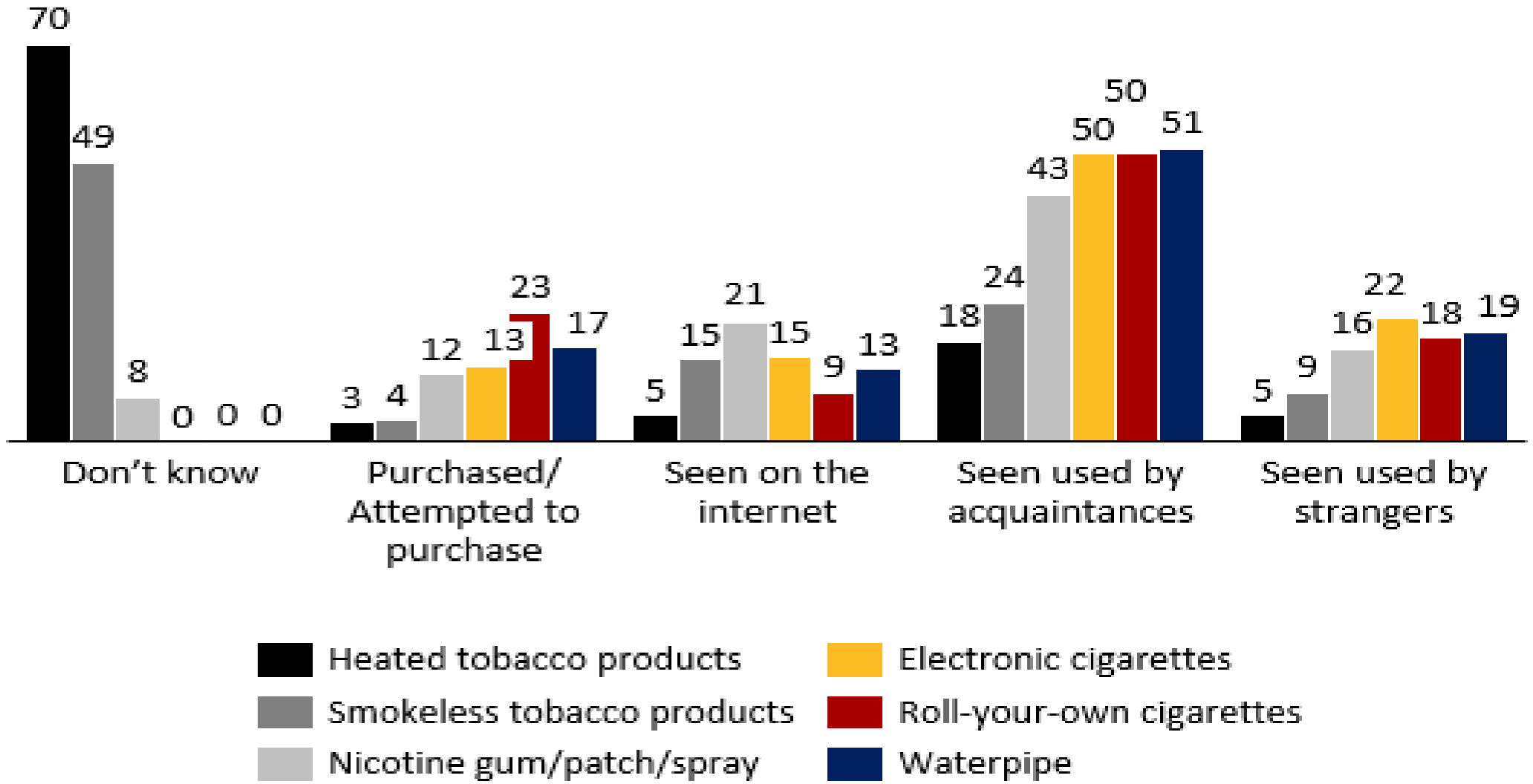
Absolutely disagree
Disagree
Neither agree nor disagree
Agree
Absolutely agree

Intentions to quit smoking cigarettes (%)
(Current daily smokers)



If you have ever quit smoking, what was the longest time you could abstain? (%)
(Current daily smokers)

Do you know these products? (%) (Current daily smokers)



What is Next?

Plans for New Research

The policy environment in Turkey regarding smoke-free products

- Until 2020, they were legal.
- On Feb 25, 2020, a Presidential Decree (#31050) banned the imports of e-cigarettes and HTPs. (No approval has been given for domestic production; therefore, the ban on imports effectively bans sales.)
- An exception made for imports for personal use (one device per person and cartridges or solutions up to 30 ml, or 10 disposable electronic cigarettes, and 200 tobacco inserts in total).
- Smoke-free products are widely available and used by many consumers.
- Neither taxed nor subject to any kind of quality inspection in Turkey.

Research Question 1:

What impact did the 2020 ban on imports in Turkey have on their users, and how did consumers respond to the ban?

The policy environment in Turkey regarding smoke-free products

Research Question 2:

What are the choices and perceptions of consumers in Turkey regarding smoke-free products?

- What is the level of knowledge among consumers about the ban on imports? Do they know that the products are unregulated?

- What are the trade-offs that consumers face between combustible products (mainly cigarettes), smoke-free products, and quitting?

- What attributes of the products are crucial in determining the choices of consumers?

Method: Discrete Choice Experiment on consumer data

Thank you for listening!