



MISPERCEPTION OF E-CIGARETTE HARM GROWING AMONG AMERICAN ADULTS, 2013-2015

ANALYSIS OF THE POPULATION ASSESSMENT OF TOBACCO AND HEALTH (PATH) STUDY DATA, 2013-2015

T. Verron, M. Guo, B. Varignon, G. O'Connell, T. Walele, X. Cahours



- Population Assessment of Tobacco and Health (PATH) Study
- Perceptions of the Relative Harm of Electronic Cigarettes
 - US Population
 - Age and gender
 - Cigarette smokers perception
 - E-cigarette users perception
- Impact of risk perception on switching and cessation
- Risk perception forecast

PATH STUDY REMIND



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- The Population Assessment of Tobacco and Health (PATH) Study is a nationally representative longitudinal study of tobacco use and health in the United States. A collaboration between the National Institutes of Health (NIH), National Institute on Drug Abuse (NIDA) and the U.S. Food and Drug Administration (FDA) Center for Tobacco Products
- The study was launched in 2011, started the first wave of data collection in 2013, and completed its fourth wave in late 2017.
- The present study focussed on the PATH data contained in the adult interviews obtained in 2013 (Wave 1) and again in 2015 (Wave 2).



- Examine what makes people susceptible to using a tobacco product
- Evaluate initiation and use patterns, including the:
 - use of newer products, such as e-cigarettes
 - use of multiple products
 - switching from one product to another
- Study patterns of tobacco product use, cessation, and relapse
- Track potential behavioral and health impacts, including biomarkers of exposure and harm
- Assess differences in tobacco-related attitudes, behaviors, and health conditions among racial/ethnic, gender, and age subgroups

PATH PRODUCTS

In both waves, adults and youth were asked about seven main types of tobacco products*



The majority of the questions fit into one of the following categories.

Ever use
Recency of use
Frequency of use
Amount of use
Brands used
Purchase details

Additional topics included

Polyuse / Nicotine dependence / Packaging and health warnings / Risk and harm perceptions / Secondhand smoke exposure / Marketing and advertising / Media use / Demographics / Health / Psychosocial and mental health / Substance use / Cessation / Peer and family influences

*Bidis and kreteks were additional types asked about on the Youth Interview, but were not asked on the Adult Interview.



- The Wave 1 targets population of the PATH Study is the civilian **household population** 18 years of age or older and youth 12 to 17 years old in the U.S. (the 50 states and the District of Columbia).
- About 46,000 people aged 12 years and older, including tobacco users and non-users, were included in the first wave of the PATH Study.
- The Wave 1 sample for the PATH Study was selected using a **four-stage, stratified probability sample design**.

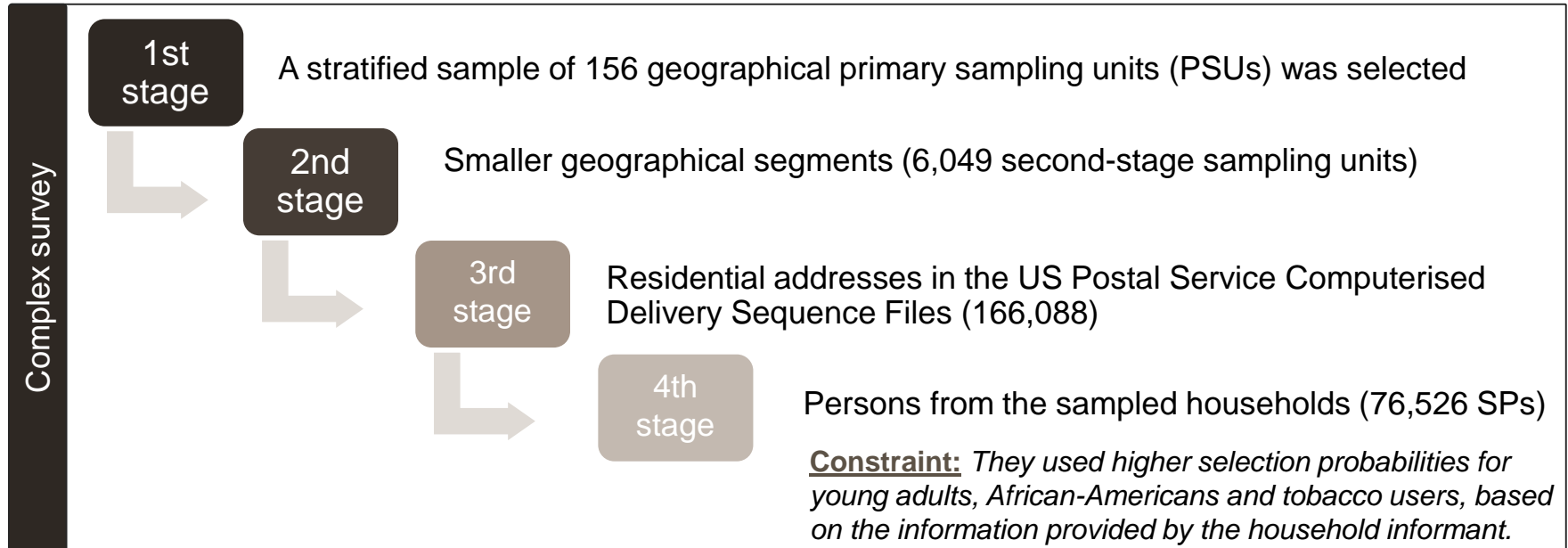
A FOUR-STAGE, STRATIFIED PROBABILITY SAMPLE DESIGN



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➡ **Sample is not representative of the US population**

➡ **To make inference on US population, need to use weights**

WEIGHTING

Analysis of data from complex sample designs, involves **weighting** to compensate for different probabilities of selection, non-response and possible deficiencies in the sampling frame (eg, over or under-coverage of certain population groups).

Weights and replicate weights (based on BRR approach) enable the data to be analysed are provided in the database.



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USER Guide

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ICPSR 36498 Population Assessment of Tobacco and Health (PATH) Study [United States] Public-Use Files






United States Department of Health and Human Services. National Institutes of Health. National Institute on Drug Abuse

United States Department of Health and Human Services. Food and Drug Administration. Center for Tobacco Products

User Guide

Weights and Imputation **4**

Example Program Code for Generating Popular Statistics **A**

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- ❖ **Question AE1099** *“Is using an e-cigarette less harmful, about the same, or more harmful than smoking cigarettes?”*
- ❖ R01_AE1062: Use / used e-cigarettes because: They might be less harmful to me than cigarette
- ❖ R01_AE1075: Use / used e-cigarettes because: They might be less harmful to people around me than cigarettes

RISK PERCEPTION



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“Is using an e-cigarette **less harmful**, about the **same**, or **more harmful** than smoking cigarettes?”



In 2013, more than 50% of the U.S. population thought that e-cigarette is about the same, or more harmful than cigarette

RISK PERCEPTION



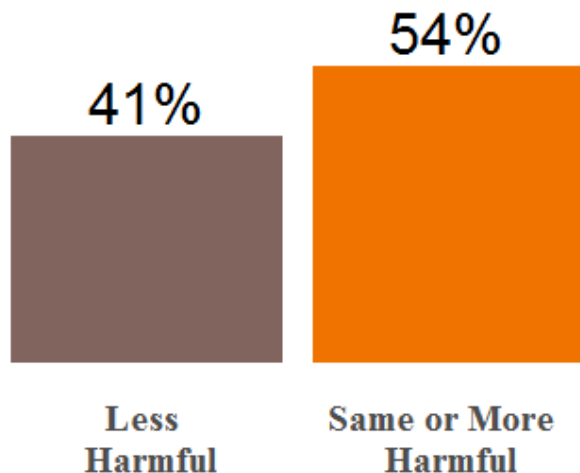
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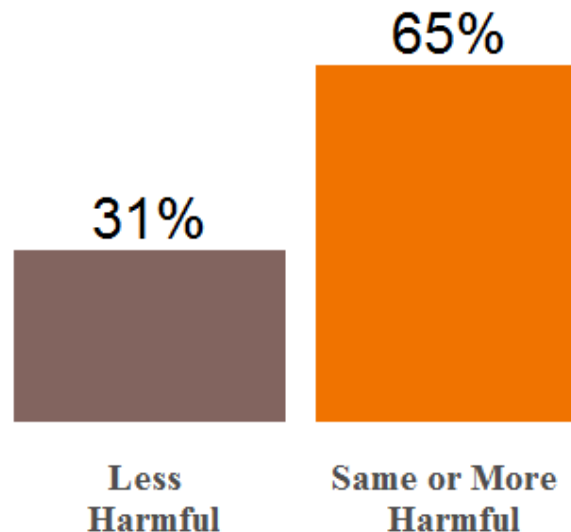
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“Is using an e-cigarette **less harmful**, about the **same, or more harmful** than smoking cigarettes?”

In 2013 (Wave 1)



In 2015 (Wave 2)



Between 2013 and 2015, a growing proportion of the U.S. public and smokers does not recognise that e-cigarettes are less harmful than smoking.

Congress2016 - Document not peer-reviewed by CORESTA

Risk perception according to age and gender



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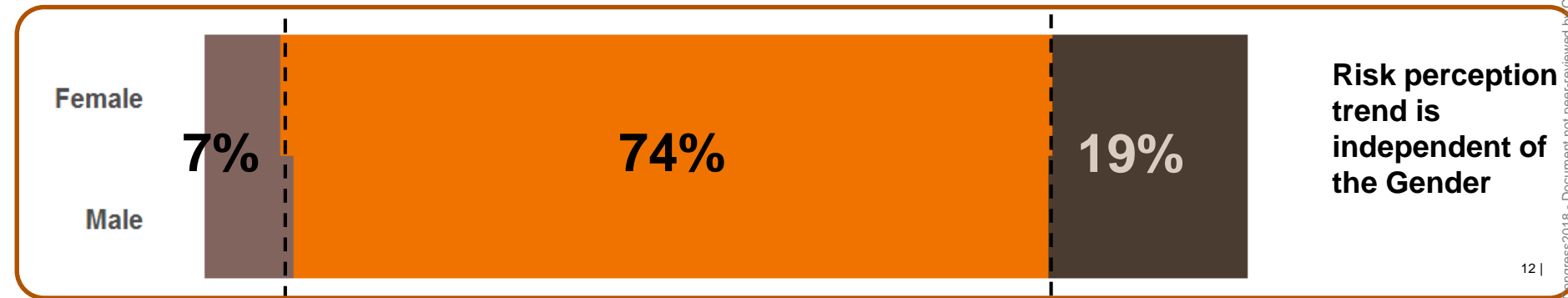


Risk perception trend is independent of the class of age

Perception changes to « Less » harmful

Same perception

Perception changes to « same or More » harmful



Risk perception trend is independent of the Gender

RISK PERCEPTION FOR CIGARETTE SMOKERS

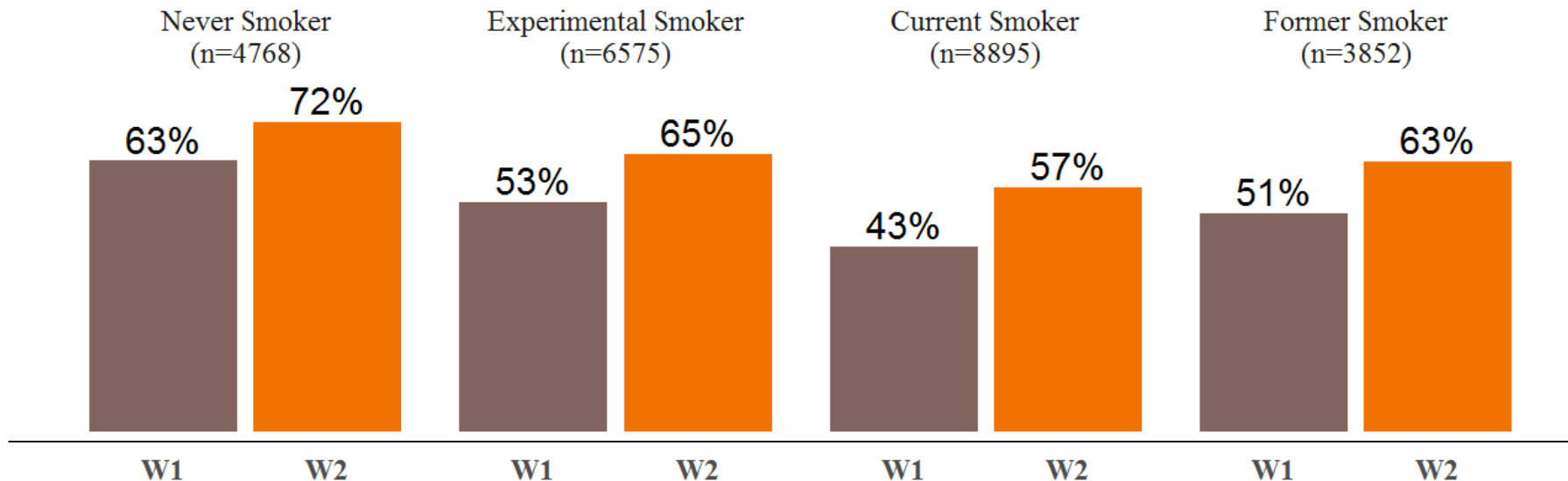


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“Is using an e-cigarette less harmful, about the same, or more harmful than smoking cigarettes?”



RISK PERCEPTION FOR E-CIGARETTE USERS

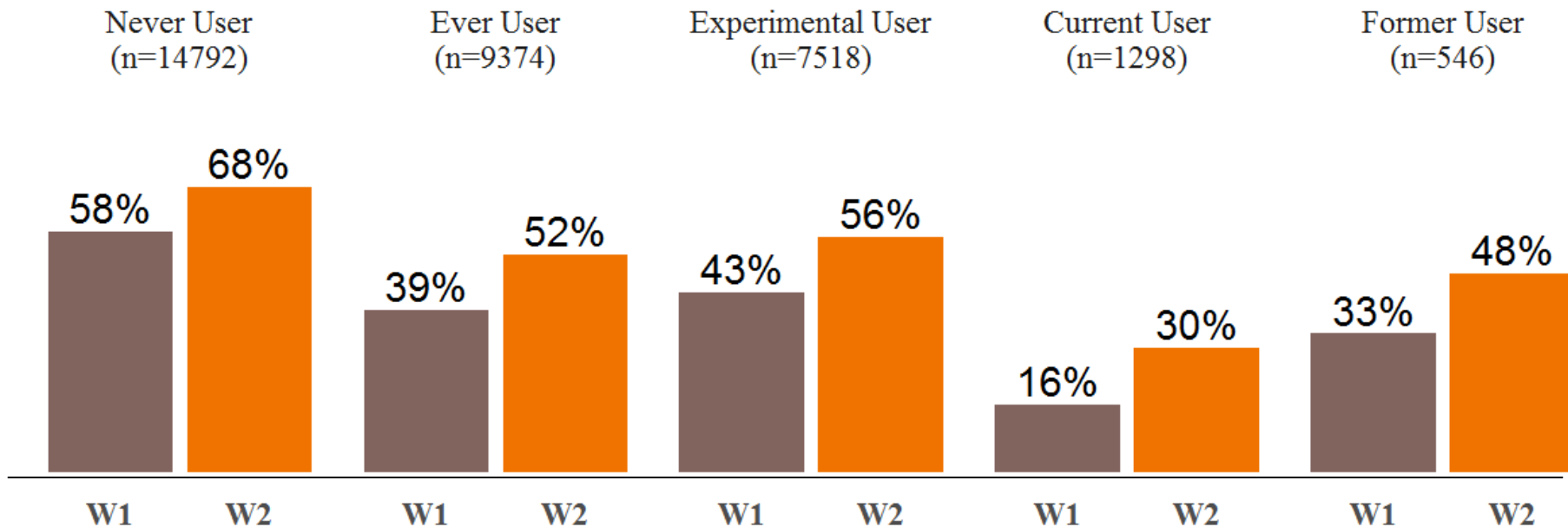


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“Is using an e-cigarette less harmful, **about the same, or more harmful** than smoking cigarettes?”





❖ Does the risk perception impact smoking cessation ?



Among smokers who stopped smoking between 2013 and 2015, 50% thought that the e-cigarette was **less harmful** than the cigarette, and 50% thought the opposite.

❖ Does the risk perception related to switching from cigarette to e-cigarette ?



≈95 %

of people who switched from cigarette to e-cigarette between 2013 and 2015, thought that it was **less harmful** than smoking

Risk perception forecast

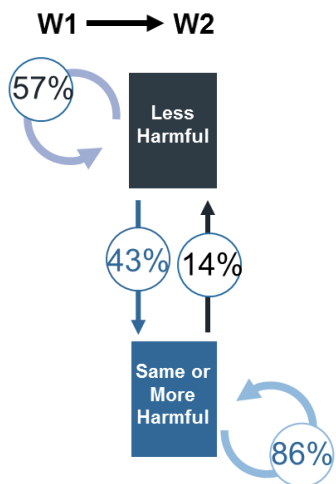


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What will happen in 5 years, if nothing is done, positively or negatively, to change the risk perception?

Observations



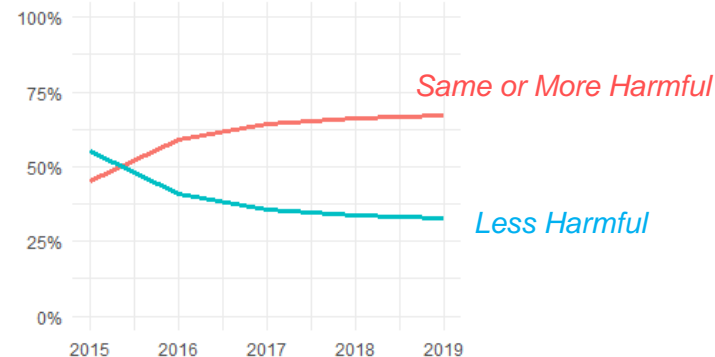
Model

Dynamic Population
Model based on Markov
chains

Transition matrix

		W2	
		Less	Same or More
W1	Less	57%	43%
	Same or More	14%	86%

Predictions



≈70% (+27%) of the US smokers will perceive e-cigarette as same or more harmful than cigarette

Conclusion



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- ❖ The proportion of adult US smokers who believed e-cigarettes were just as, or more, harmful than smoking increased substantially from **43% in 2013 to 57% in 2015**.
- ❖ If nothing is done this proportion could reach up to **70%** in the five next years
- ❖ Nevertheless, **95%** of smokers who switched from cigarette to e-cigarette thinks that the e-cigarette is less harmful than the cigarette.
- ❖ Therefore misperceptions of the relative harm of e-cigarettes compared with conventional cigarettes need to be urgently addressed, particularly among smokers who may benefit from switching to e-cigarettes.



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