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JUUL Labs' 2018 RETAIL REVENUES BY AGE GROUPS OF USERS
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Abstract:	<p>Introduction</p> <p>We estimate JUUL Labs' net revenue attributable to youth use in the US.</p> <p>Method</p> <p>We used the Population Assessment of Tobacco and Health (PATH) Study wave four (December 2016 – Jan 2018) adult and youth data to calculate the percentages of youth among JUUL users. Based on the percentage of youth among JUUL users, we applied several scenarios to estimate JUUL Labs' net revenue from youth in the US in 2018.</p> <p>Results</p> <p>According to the PATH Study, 31% (n=25) of JUUL users were youth (12-17 years). JUUL Labs' net revenue from devices and pods was \$1.3 billion in 2018. We calculated that JUUL Labs made \$390M (30%) of its net revenue in 2018 from youth. This amount could range between \$130M (10%) and \$650M (50%).</p> <p>Conclusion</p> <p>We estimated that between \$130 M and \$650 M of JUUL Labs' net revenue came from youth in 2018.</p>

JUUL Labs' 2018 RETAIL REVENUES BY AGE GROUPS OF USERS

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Conflicts of Interest: The authors have no conflicts of interest relevant to this article to disclose.

I, Bekir Kaplan, affirm that I listed everyone as coauthor who contributed significantly to the work.

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4 **ABSTRACT**
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7 **Introduction:** We estimate JUUL Labs’ net revenue in 2018 attributable to youth use in the US.
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10 **Method:** We used the Population Assessment of Tobacco and Health (PATH) Study wave four
11 (December 2016 – Jan 2018) adult and youth data to calculate the percentages of youth among
12
13 JUUL users. Based on the percentage of youth among JUUL users, we applied several scenarios
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15 to estimate JUUL Labs’ net revenue from youth in the US in 2018.
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21 **Results:** According to the PATH Study, 31% (n=25) of JUUL users were youth (12-17 years).
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23 JUUL Labs’ net revenue from devices and pods was \$1.3 billion in 2018. We calculated that
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25 JUUL Labs made \$390M (30%) of its net revenue in 2018 from youth. This amount could range
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27 between \$130M (10%) and \$650M (50%).
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31 **Conclusion:** We estimated that between \$130 M and \$650 M of JUUL Labs’ net revenue came
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33 from youth in 2018.
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IMPLICATIONS AND CONTRIBUTION: To prevent e-cigarette companies from attracting youth users nationwide, it could be mandated by Congress that each e-cigarette company ensures youth use is below a small pre-determined fraction of their sales, requiring those that fail to do so to pay a high penalty.

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4 **INTRODUCTION**

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6 Current e-cigarette use increased by 78% among youth during 2017-2018, likely due to products
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8 such as JUUL.¹ However, JUUL Labs insists they do not market their products to young people.²

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10 Here, we estimate JUUL Labs' net revenue in 2018 attributable to youth use in the US.

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14 **METHOD**

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17 **JUUL Labs' Revenue**

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20 JUUL Labs' 2018 net revenue from devices and pods was \$1.3 billion dollars.³ In 2017, 55% of
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22 JUUL Labs' revenue came from devices and 45% from pods.⁴ Thus, for these analyses, we used
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24 55/45 allocation for device and pods, respectively, to estimate JUUL Labs' revenue attributable to
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26 youth.
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31 **Adult and Youth JUUL Users**

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34 We used the Population Assessment of Tobacco and Health (PATH) Study wave four (December
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36 2016 – Jan 2018) adult and youth data.⁵ To date, the PATH Study wave 4 is the only nationally
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38 representative study of tobacco use in United States able to provide information about JUUL use
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40 in both adults and youth.
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44 We merged youth and adult data to calculate the percentage of youth JUUL users. Current adult
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46 JUUL owners were defined as respondents who have ever used an e-cigarette and stated "JUUL"
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48 as the name of e-cigarette brand they own. Youth JUUL owners were defined as respondents aged
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50 12-17 years who were past 30-day electronic nicotine product users and stated "JUUL" as the name
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52 of the brand of electronic nicotine product they usually use or last used. Analyses were performed
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54 using STATA version 15.1, incorporating the weights from the PATH Study for the prevalence
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56 estimates.
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4 **Estimates of Adult and Youth JUUL Labs' Sales**
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7 We created several scenarios to estimate the percentages of JUUL Labs' net revenue from adults
8 and youth. Based on 2017 reported revenue data from devices vs. pods and assuming similar
9 revenue margins, we considered that 55% of JUUL Labs' revenue was generated from device and
10 45% from pods.⁴
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17 We calculated JUUL Labs' revenue according to the PATH estimate of the proportion of JUUL
18 users that are youth (Figure 1, Scenario 3). However, some literature has found that JUUL use
19 among youth might be under-reported because the studies do not use term "JUUL" and youth might
20 not realize JUUL is an e-cigarette.^{6,7} In addition, a nationally representative study⁸ reported that
21 22.3% of past 30 day JUUL users aged 15-17 used less than 1 pod in their lifetime, suggesting that
22 the intensity of JUUL pod use among youth could be lower compared to adults. Taking all of this
23 into account, we created several scenarios as follows: (a) Youth use 50% of JUUL devices and
24 pods (most liberal scenarios) (Figure 1, Scenario 1), a scenario assuming there is underreporting of
25 JUUL use among youth and that the intensity of pod use is similar for youth and adults; (b) Youth
26 use 50% of JUUL devices and 30% of JUUL pods (Figure 1, Scenario 2), a scenario relying on
27 assumptions that rates of JUUL use are higher than reported but that pod use intensity by youth is
28 lower than among adults; (c) Youth use 30% of JUUL devices and pods (Figure 1, Scenario 3), a
29 scenario based on the PATH study point estimate and the assumption that youth and adults have
30 similar intensity of pod use; (d) Youth use 30% of JUUL devices and 10% of JUUL pods (Figure
31 1, Scenario 4), a scenario that relied on the PATH study point estimate and the assumptions that
32 JUUL pod use is lower among youth than among adults; (e) Youth use 10% of JUUL devices and
33 pods (most conservative scenarios) (Figure 1, Scenario 5), a scenario that assumes youth users buy
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4 fewer devices (e.g. share devices) and fewer pods (lower intensity or non- JUUL pods) than their
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6 share of prevalence.
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9 **RESULTS**

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12 In total, 59 survey participants stated “JUUL” as the name of the e-cigarette brand they own. Of
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14 those JUUL users, 31% (n=25) were youth (12-17 years).
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18 **Scenarios**

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21 Based on the PATH Study estimate that approximately 30% of JUUL users are youth, we calculated
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23 that JUUL Labs made approximately \$390M from youth (Figure 1, Scenario 3). Based on most
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25 conservative estimates, it can be argued that JUUL Labs made at least \$130 M, or 10% of its net
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27 revenue in 2018 from youth (Figure 1, Scenario 5). Our most liberal estimate, which assumes that
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29 50% of JUUL devices and pods were used by youth, finds that JUUL Labs’ net revenue from youth
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31 in 2018 was \$650 M (Figure 1, Scenario 1). We also estimated that JUUL Labs made \$530 M or
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33 \$270 M from youth in 2018 based on two other assumed consumption scenarios (Figure 1,
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35 Scenarios 2 and 4).
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41 **DISCUSSION**

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44 We estimated that between \$130 M and \$650 M of JUUL Labs’ net revenue came from youth in
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46 2018. This study found that in 2018 alone, JUUL Labs made large and significant net revenues
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48 from users under the age of 18.
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53 To prevent e-cigarette companies from attracting and profiting from youth users nationwide, it
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55 could be mandated by Congress that each e-cigarette company ensures youth use is below a small
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57 pre-determined fraction of their sales, requiring those that fail to do so to pay a high penalty.⁹ This
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59 may seem difficult to achieve, however, a similar situation for combustible cigarettes almost came
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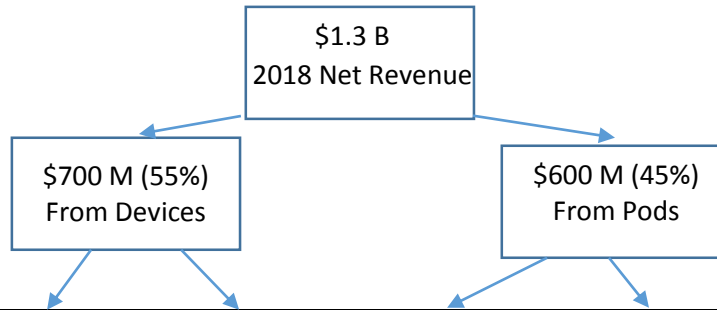
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into effect over two decades ago.⁹ Quantifying the share of net revenues attributable to youth users can help hold e-cigarette companies accountable in the effort to minimize youth consumption of their products.

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Conflicts of Interest: The authors have no conflicts of interest relevant to this article to disclose.

Figure 1: Different Scenarios for Calculating JUUL Labs' Net Revenue from Youth



Youth Consumption Scenarios	Net Revenue from Youth (12-17) Device Purchases	Net Revenue from Adult (18+) Device Purchases	Net Revenue from Youth (12-17) Pod Purchases	Net Revenue from Adult (18+) Pod Purchases	Net Revenue from Youth (12-17) Total Purchases
Scenario 1: 50% JUUL devices, 50% JUUL pods	\$350M	\$350M	\$300M	\$300M	\$650M
Scenario 2: 50% JUUL devices, 30% JUUL pods	\$350M	\$350M	\$180M	\$420M	\$530M
Scenario 3: 30% JUUL devices, 30% JUUL pods	\$210M	\$490M	\$180M	\$420M	\$390M
Scenario 4: 30% JUUL devices, 10% JUUL pods	\$210M	\$490M	\$60M	\$540M	\$270M
Scenario 5: 10% JUUL devices, 10% JUUL pods	\$70M	\$630M	\$60M	\$540M	\$130M

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4 **REFERENCES**
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Abstract of "JUUL Labs' 2018 RETAIL REVENUES BY AGE GROUPS OF USERS" (JAH-2020-01052):

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We estimate JUUL Labs' net revenue attributable to youth use in the US.

Method

We used the Population Assessment of Tobacco and Health (PATH) Study wave four (December 2016 – Jan 2018) adult and youth data to calculate the percentages of youth among JUUL users. Based on the percentage of youth among JUUL users, we applied several scenarios to estimate JUUL Labs' net revenue from youth in the US in 2018.

Results

According to the PATH Study, 31% (n=25) of JUUL users were youth (12-17 years). JUUL Labs' net revenue from devices and pods was \$1.3 billion in 2018. We calculated that JUUL Labs made \$390M (30%) of its net revenue in 2018 from youth. This amount could range between \$130M (10%) and \$650M (50%).

Conclusion

We estimated that between \$130 M and \$650 M of JUUL Labs' net revenue came from youth in 2018.

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