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# Up in Smoke: A Tradeoff Study between Tobacco as an Economic Development Tool or Public Health Liability in an American Indian Tribe

Raymond I. Orr, Carolyn Noonan, Ron Whitener, and Stephen M. Schwartz

Successful strategies for self-generated revenues are difficult to come by for federally recognized American Indian (AI) tribes. Since the expansion of self-governing rights to AIs in the 1970s, tribes have pursued multiple strategies towards expanding revenues through reservation-based economic development projects. These projects generate revenue, create jobs for tribal members, and increase a tribe's discretionary revenue that, unlike federal government grants, is outside of federal oversight and, therefore, is particularly valued as it promotes further self-governing.

When creating economic development projects, AI tribes face significant obstacles. Reservations are usually far from commercial, manufacturing, or population centers, limiting economically supportive ventures. Reservation-based employment is scarce and AI unemployment nationally (14.6%) is typically 50 percent greater than the national average (8.9%).<sup>1</sup> The traditional strategies for revenue generation by municipalities, such as income, real estate, or business taxes, are therefore usually

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Since the 1970s, one widespread strategy for spurring economic development is for tribes to use their unique legal status in American law. Considered "quasi-sovereign" political entities that are outside the bounds of state regulatory authority, AI tribes can pursue economic development opportunities unavailable to other municipalities or businesses that are subject to state regulation. The proliferation of casinos on reservations in states that prohibit gambling is one such strategy. Another consistent strategy that is more widespread, and nearly as lucrative, is for tribes to use their unique legal status to sell tobacco products more cheaply than can be found off-reservation.<sup>3</sup>

While tobacco sales provide revenue and employment for tribes, tobacco use also presents a major public health problem for AIs. Smoking prevalence among AIs is the highest of all ethnic groups in the United States.<sup>4</sup> Approximately 40 percent of AI adults smoke, which is double that of non-Hispanic whites.<sup>5</sup> According to a comprehensive epidemiological study, two of every five AI deaths will be associated with a tobacco-related illness if there is not a decline in smoking prevalence.<sup>6</sup> Perhaps most troubling, AI tobacco use is actually increasing compared to other racial and ethnic groups.<sup>7</sup> High tobacco use among AIs makes it one of the most significant public health concerns facing tribes.

Tobacco as an economic development strategy likely contributes to the high prevalence of use among AIs. Reservations are awash in cheap tobacco products and advertising. Multiple studies have identified price and advertising as a significant determined cause of long-term smoking. Cheap tobacco products lead to greater initiation among young adults who generate the largest cohort of long-term smokers.<sup>8</sup> Though the link between youth smoking initiation and price is not universally accepted as robust<sup>9</sup> or requires accounting for particular socioeconomic factors,<sup>10</sup> recent studies, such as that of Zhang, et al., establish that every dollar decrease in cigarette carton price corresponds to a 1.5 percent rise in smoking among young adults in the United States.<sup>11</sup> This is supported by extant research finding that regulating tobacco through increasing its price is one of the most effective population-based strategies for reducing smoking both globally and in the United States.<sup>12</sup>

Our study is directed at the difficult tradeoff presented to tribes: the need to generate revenue *against* the need to reduce smoking which itself is promoted in part by selling inexpensive tobacco. To understand attitudes about this tradeoff, we conducted a cross-sectional survey of tribal members of a federally recognized tribe in Washington State regarding their opinions about tobacco regulation. This study makes a major contribution to the study of AIs in two ways. The first is its research focus: the study is the first to solicit opinions about the tradeoff between tobacco as a revenue source and health liability. The second is the study's research design, which uses fictional vignettes to collect tribal member opinion about a controversial (or taboo) subject. The advantage of this model for tribal leaders, policy makers, and researchers is that it allows for members to describe their opinions on controversial subjects in tribes not yet prepared for explicit and open debate. For researchers, our vignette approach would allow for the study of beliefs on sensitive subjects without injecting their research focus directly into tribal politics, facilitating tribal partnerships on sensitive subjects.

Though there have been numerous contemporary studies examining tobacco use among AIs, focusing on longitudinal and comparative prevalence,<sup>13</sup> youth smoking,<sup>14</sup> attitudes about cessation ("quitting"),<sup>15</sup> effectiveness of anti-smoking interventions,<sup>16</sup> and the need for collaborative efforts with non-tribal governments,<sup>17</sup> this is, as far as we are aware, the first to examine the tradeoff between public health and economic development. Community support will be essential in enacting policies to further regulate tobacco and to reduce use among AIs.

#### ECONOMIC AND HEALTH IMPACTS OF TOBACCO IN AI COMMUNITIES

AIs use tobacco both recreationally and ceremonially and the high tobacco prevalence among contemporary AIs has many causes.<sup>18</sup> Identified causes include ceremonial use, poverty, intergenerational trauma, and low awareness of tobacco's effects on health.<sup>19</sup> Tobacco is believed to be a gift from the Creator for many tribes and the exhaled smoke could carry prayers to the spiritual world.<sup>20</sup> Tobacco was also used medicinally in treating toothaches, earaches, and colds.<sup>21</sup> Both the medicinal and ceremonial uses have thought to contribute to tobacco use in AI populations,<sup>22</sup> which has been historically high compared to other ethnic groups and also has varied widely in AI communities in the twentieth and twenty-first centuries.<sup>23</sup>

The most effective population-level strategy for reducing cigarette smoking is regulation and particularly price.<sup>24</sup> To reduce smoking, governments have raised the required age to purchase cigarettes and, in recent decades, have restricted the locations where cigarettes can be smoked and sold. Another strategy is to increase the cost of cigarettes through taxation. Extant research across multiple national populations shows that price increases are effective at curbing smoking.<sup>25</sup> Since the early 1980s, government policies to increase prices, restrict availability, and promote greater awareness of the health hazards has reduced smoking prevalence in all US ethnic groups with the exception of AIs, whose smoking prevalence has increased during this period<sup>26</sup> and is now twice the national rate.<sup>27</sup>

A likely explanation for the unique trajectory of tobacco use over the last thirty years is that many AI tribes generate revenue by selling inexpensive tobacco products. Federally recognized tribes are not fully subject to state sales taxes<sup>28</sup> and tribes can therefore sell cigarettes at much lower prices on their reservations than can their off-reservation competitors.<sup>29</sup> Tobacco outlets create jobs on reservations that are typically far from commercial or population centers, thus limiting supportive economic ventures. Yet tobacco as an economic development strategy is not without cost. Tobacco products cause more early deaths among AIs than any other voluntary behavior and tobacco contributes to two in five of all AI deaths.<sup>30</sup> That reservations are awash in cheap tobacco products and advertising has likely contributed to the high tobacco use that persists among AIs.

The comparative advantage that tobacco retailers have on tribal lands is significant. In 2005, Oklahoma state taxes on cigarettes were \$1.03 per pack, to provide one example.<sup>31</sup> Tribal tobacco retailers on reservations were required by agreement with the state to collect a tax of 6 cents per pack for state revenue, which is equal to about one-twentieth of taxes imposed off-reservation. These reservation-based retailers could sell cartons up to \$10 less than other retailers within Oklahoma. The volume of tobacco products sold between non-reservation and reservation tobacco retailers illustrates how tribes have used their comparative advantage: according to the Oklahoma Tax Commission, the average packs-per-store in a typical month for non-reservation retailers was 3,265, compared to 64,399 for reservation retailers (2013).<sup>32</sup> In Washington State, the site of our study, state excise taxes on cigarettes were \$3.02 per pack<sup>33</sup> and cigarettes cost approximately \$8.00 per pack.<sup>34</sup> As of 2014, our tribal partner is able to sell a pack of its reservation-assembled cigarettes for approximately \$4.50.<sup>35</sup>

Few studies consider the role that inexpensive tobacco has on AI smoking. Despite limited research, what is known is that higher prices do reduce smoking and are particularly effective at dissuading youth smoking,<sup>36</sup> an age group with high representation in AI communities<sup>37</sup> and a critical group to dissuade, as 90 percent of lifetime smokers initiate tobacco use by age 18.<sup>38</sup> Not only does access to inexpensive tobacco facilitate youth initiation, it also undermines efforts to quit cigarette smoking. Research has shown that smokers with access to inexpensive tobacco on AI reservations were half as likely to attempt to quit<sup>39</sup> and that reservation-based AIs use tobacco more than nonreservation Indians,<sup>40</sup> indicating that the inexpensive tobacco on reservations might drive the high prevalence.

#### RESEARCH STRATEGY: TRADEOFF STUDY

#### Overview and Setting

Our project was in collaboration with a rural, federally recognized tribe with 1000– 1500 enrolled members in Western Washington State, which maintains its own public health promotion programs and clinics. As do many AI tribes, this tribe generates revenue from tobacco sales with the tribe selling brand-name tobacco products in reservation retailers at a price point 30 to 40 percent lower than off-reservation retailers. The tribe also produces its own brand of cigarettes that sells for half the price of name-brand cigarettes sold off-reservation. By assembling the cigarettes on their own reservation, the tribe is able to avoid nearly all state tobacco taxes, making lower price the reservation retailers' primary comparative advantage over nonreservation outlets.

### Study Design and Data Collection

We conducted a cross-sectional survey of tribal members during the tribe's Annual General Body in 2013. It is the largest meeting of the tribe and takes place over one day with approximately 40 percent of the members in attendance. Our criteria for participation were tribal membership and having an age of at least 18 years. The study received approval from the University of Washington Institutional Review Board and the participating tribe's tribal council. The tribe supported this research but asked

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not to be identified in publications. We selected this tribe due to our established relationship and the tribe's high reliance on sales of tobacco products. A national or representative sample of AI tribes is not possible for this research question, so we selected a tribe with substantial interests in tobacco sales in order to see what tradeoff attitudes looked like in inhospitable conditions. We recruited participants by posting signs advertising our study on entryways to the meeting. Most participants completed the survey during the multiple breaks in the four-hour meeting.

We used a vignette scenario of a fictional tribe called the "Big Bear Tribe" that was making decisions about their tobacco sales as an economic development strategy against a reduction in smoking. We selected a vignette design to make clear to the participants that the hypothetical activities presented were not policies being considered by their own tribe. The vignette tested a series of shifts in the economic costs associated with reduced smoking and asked participants to indicate their level of support for where these costs were to be located. We decided against alternate designs, such as individual threshold values (asking participants to nominate "how much of their income would they trade"), due to the high cognitive burden such approaches place on participants. Our survey was administered to the Annual General Body attendees using Turning Point, a PowerPoint presentation application. Questions were projected on-screen, participants responded using wireless "clickers," and the Turning Point program recorded participants' responses. The survey took fifteen minutes and participants were compensated with a twenty-dollar gift certificate to a retail chain store.

Measures. The survey consisted of three sections and collected information about the respondents' attitudes toward: (1) tradeoffs between economic benefits of tobacco sales and public health costs; (2) government regulation of tobacco; and (3) individual sociodemographics and lifestyle characteristics (see appendix for questionnaire). Based on six questions from the Big Bear vignette, support for either reduced smoking or revenue was measured using a 4-point scale (where 1 = I would definitely agree, 2 = I would agree, 3 = I would disagree, 4 = I would definitely disagree). The scale was the median support for each proposed vignette question along each participant. For ethnic identity, we relied upon an established two-question survey tool used to measure identity in AIs.<sup>41</sup> This tool asks participants two questions: first, to what degree do they identify with the "white ways of living," and second, how much do they identify with the "traditional ways of living." This measure allows for a participant to rate him or herself as highly (or lowly) living according to traditional and white ways and therefore avoid the "either/or" in reporting identity. Due to our limited sample, we expressed participant identity as "high" if they answered "some" or "a lot", and "low" if they answered "not at all" or "a little."

### Tradeoffs between Economic Benefits and Health Costs of Tobacco Sales

The vignette began by describing a fictional tribe as being reliant on tobacco for revenue and jobs, not unlike our surveyed tribe (see appendix). The smoking prevalence of the tribe (40%) was presented along with information about the health consequences of smoking as background information. Participants were told that the fictional tribe was

considering different policies that would alter its dependence on tobacco for revenue in order to improve health and that each policy shift had an economic cost that might impact budgets, jobs, or services.

Example questions included first assessing if participants "would agree with a decision to increase anti-smoking programs" followed by evaluating "if increasing anti-smoking programs results in taking funds from other programs, would you agree with a decision to increase anti-smoking programs if more tribal funds are required?" Response options included definitely disagree, probably disagree, probably agree, and definitely agree. Another question asked if participants would agree with a decision to make cigarettes more expensive if it would reduce smoking among tribal members by 10 percent. Three follow-up questions evaluated agreement with the decision to make cigarettes more expensive and reduce smoking among tribal members if: (1) tribal budgets were cut; (2) twenty of the forty jobs in tribal tobacco enterprises were lost; and (3) the annual direct cash payment to adult members of the tribe that is referred to as a "per-capita payment" was reduced from \$3,000 to \$1,500.

Other data collected. We include questions about participant sociodemographic and lifestyle characteristics including age, gender, education, smoking status, and tribal employment.

#### Data Analysis

We examined the distribution of responses for all items in the questionnaire. Items from all sections were assessed as categorical variables using percentages. We also evaluated the responses to our vignette as continuous variables using mean and standard deviation. Other sociodemographic characteristics were also examined. The same method was used to examine the impact of other economic consequences, such as job loss at tribal tobacco enterprises and cuts in per-capita payments.

**Results.** We recruited sixty eligible subjects into our study (see table 1), which was approximately 10 percent of the adult tribal members and 25 percent of those in attendance at the meeting. Table 1 shows that nearly 65 percent of our participants had some college credit or a college degree, with equal numbers of men and women. The educational characteristics of our participant pool resembled the region's AI population as described by the US Census. We used the American Community Survey (ACS) five-year estimates to see if the age distribution of our participant pool resembles that of the general tribal population. We adjusted the ACS percentages for our age brackets as approximately 40 percent of tribal members are under nineteen. Our participant pool was slightly younger than the general tribal population, with forty- to sixty-year-olds slightly underrepresented in our study. Our participants were evenly distributed among those ages eighteen to thirty-nine years and those ages forty years and above. The majority of participants described themselves in terms of conforming to "traditional" ways of living rather than "white" ways.

Figure 1 shows the distribution of support for the tradeoffs in the Big Bear vignette by percentage. More than 70 percent of the participants "strongly disagreed" or "disagreed" with the decision to make cigarettes more expensive if the cost was a

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### Table 1

### DEMOGRAPHIC AND LIFESTYLE CHARACTERISTICS OF STUDY SAMPLE SURVEY PARTICIPANTS: GENERAL AGE DATA FOR REGION USING AMERICAN COMMUNITY SURVEY 5-YEAR ESTIMATES AND 2013 US CENSUS AI DATA

		Percent	
Characteristic	Our Sample	ACS	US Census (2013)
Age			
18-29	29	22	
30-39	22	17	
40-49	15	25	
50-59	20	17	
60+	14	19	
Female	52		
Education			
No HS Diploma	12		21
HS Graduate	26		27
Some College Credit	47		32
College Graduate	16		17
Tribal Employee	55		
Employee of Tribal Tobacco	15		
Current Smoker	31		
Cultural Identification **			
High white identification	61		
Low white identification	39		
High traditional identification	78		
Low traditional identification	22		

\* Percentages adjusted to exclude the approximately 40% of tribal members under 19 years of age; 18-year-olds could not be included in the ACS data.

\*\* The cultural identification measure allows participants to describe themselves as both high or low in white and traditional identifications, allowing for 100% in white and traditional categories.

reduction in direct payments to tribal members. Participants were evenly split when asked about increasing the price of tobacco to reduce smoking, with 48 percent being unsupportive and 52 percent supportive. Participants were most supportive of policies to increase anti-smoking programs if the outcome were to reduce member smoking by 10 percent, with 82 percent generally supportive.

Table 2 shows the greatest support for reducing smoking came when there were no costs. Mean support was 3.18—between "agree" (3) and "strongly agree" (4)—for the creation of anti-smoking programs to reduce adult smoking by 10 percent when no tradeoff with revenue or economic development was given. The least support for reduced smoking was when the tradeoff was framed against the reduction of direct payments ("per-capita payments") to tribe members where the mean response was to "disagree" (mean =1.95).



FIGURE 1. Percentage of participant support of tradeoff scenarios in hypothetical "Big Bear Nation" vignette.

### Table 2

MEAN SUPPORT AROUND TERMS OF HEALTH OR ECONOMIC DEVELOPMENT TRADEOFF IN BIG BEAR NATION VIGNETTE, SPRING 2013

Mean	Standard Deviation
3.18	1.03
2.28	0.98
2.48	1.16
2.32	1.04
2.16	1.17
1.95	1.12
	Mean 3.18 2.28 2.48 2.32 2.16 1.95

Figure 2 shows tribal employment status had a strong effect on participant attitude in vignette responses. Tribal employees were less supportive of measures to reduce smoking (m=2.0) than participants who did not work for the tribe (mean=2.5; p=0.04). Current smokers were overall the least supportive of measures to reduce smoking (mean=1.9) compared to non-smokers (mean=2.4; p=0.03). Those under age forty show greater support for health benefits over economic costs (mean=2.4) compared to those aged forty and above (mean=2.1). Identifying highly with "white



**FIGURE 2.** Mean support for tradeoff between health or economic development in Big Bear Nation vignette by demographic characteristics, Spring 2013.

American culture" was associated with less support for health at the cost of revenue (mean=2.0), compared to those with low identification (mean=2.4), although this difference was not statistically significant (p=0.15).

### DISCUSSION

Our study objective was to examine the tradeoffs that AIs encounter when generating revenue from tobacco sales and to analyze attitudes regarding changing this development strategy. Many of the participants were amenable to trading economic gains for a reduction in smoking. In fact, 29 percent of our participants supported trading any of the economic benefits for a reduction in smoking, indicating a dedicated anti-smoking subpopulation in our sample. For most participants (approximately 50%), the costs of reducing smoking and how these costs were distributed mattered. Some costs, such as jobs and reduced per-capita payments, were not welcomed by most of the participants and some participants, such as tribal government employees and smokers, were typically unsupportive of measures that would reduce revenue or increase the price of cigarettes.

We found that smokers were the least supportive of efforts to reduce smoking even when the costs were not made explicit. Smokers may differ in their understanding of the behavior, resent the perception they are engaged in harmful activities, and reject the premise of our study. Three questions in our vignette identified policies that would raise tobacco prices to discourage smoking. Such an increase in tobacco prices would be undesirable for smokers and thus it is understandable that, given the extra economic costs borne by them, they would tend to be less supportive, confirming national US studies on smokers' unwillingness to regulate tobacco.<sup>42</sup> Participants who were tribal employees expressed lower support than those who did not work for the tribe. Employees would be both more aware of how tobaccogenerated revenue provides member services and dependence upon such revenue for further employment. Scenarios that add potential insecurity to their employment would likely increase potential costs to them specifically. That education did not increase willingness to support smoking reduction at the expense of revenue is surprising. Education is typically thought to increase an individual's awareness of tobacco risks and support for regulation.<sup>43</sup>

#### Limitations

Our study has several limitations worth acknowledging. Our data was drawn from one tribe during a political meeting, which like all convenience samples reduces the generalizability of our results. Though not representative of the entire tribe, politically active tribal members' opinions are particularly important. Compared to those who do not participate in these meetings, by participating in tribal politics, this group's opinion is more likely to be salient for tribal leaders elected from this group and thus to translate into policy.

Compared to most tribes, the tribe we surveyed was highly interested in tobacco for revenue. Most tribes do not have an assembly factory as ours did. This might have altered the results towards favoring economic development. Alternatively, the surveyed tribe had other enterprises that contributed to revenue and jobs and potentially might offset the centrality of tobacco as an economic development strategy.

Our survey did not make reference to the most negative consequences of tobacco use in its questions and background. It simply emphasized reduction in adult smoking instead of identifying how many early deaths such a reduction would avoid. We favored relatively neutral language because our sense was that the latter approach would bias participants. Though we did provide information about the dangers of smoking, such as increased risk of cancer and early death, we tailored parts of the tradeoff study without certainty that such consequences would be true. For instance, we selected a 10 percent reduction in smoking to present in the tradeoff with no expectation this would be true. We selected 10 percent not as a means to bias the participants in either direction, but rather as an incremental step towards a reduction in tobacco use. Had we presented tribal members with a 50 percent tradeoff, this higher percentage would have been likely to impact the results. We were also uncertain of the exact economic effect that increased price or regulation would create for tribes and how that would translate to tribal budgets. It is likely that raising prices would have significant effect on sales and therefore revenue as lower price is typically reservation retailers' only competitive advantage.

Ultimately, increased tribal revenue and employment might be related to better health outcomes. Services and employment are likely to have a positive effect on areas with limited resources and increases in incomes are typically associated with better health outcomes. We did not test for short-term or long-term tradeoffs. Tribes might economically benefit in the short term by selling tobacco but ultimately pay a larger

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economic cost for smoker health care in the long term. We did not seek to test the overall impact of revenue or the validity of this tradeoff itself over time, as this was outside the scope of our study.

### Implications and Next Steps

This study further opens the debate about tobacco's commercial use in AI communities and offers findings and methods that could inform policy-making. The first policy recommendation originates in our study's substantive findings. Our study specifically found that, though participants were in favor of proposals to limit tobacco use, there was not overwhelming support for tobacco regulation across all costs. However, participants were particularly sensitive to proposals whose costs were borne by them directly and this is a useful finding with important policy repercussions. For health advocates who wish to decrease tobacco use among AIs, our research indicates that policy change that reduces revenues when abstractly cast will enjoy greater support than when costs are made specific.

Our study also suggests to tribal decision-makers that participants were aware of, and most sensitive to, their individual economic interest when considering the costs associated with reduced smoking. This finding should inform both research and advocacy efforts to reduce tobacco reliance in Indian country. This research indicates that support for policy change is linked to how this tradeoff is framed. As individual costs were the most motivating factor in our sample, it stands to reason that when the costs of smoking-related illness are made highly specific and at the *individual level* a greater support for reduction in smoking can be expected. If tribal policy-makers wish to gain support for reducing smoking, they should examine and frame the costs for treating members who are ill from tobacco at the individual level to generate the most support. For instance, if tribes were to present the tradeoff where revenues are diverted from per-capita payments-an individual benefit-instead of generic tribal budgets due to costs associated with supporting tribal members incapacitated by tobacco-associated diseases, it is likely such policy changes would receive greater support. Further research should investigate the budget costs to tribes from ill smokers when considering the risks of increasing smoking prevalence. In California alone the cost of AI tobaccorelated illnesses is over \$1,000 per AI.<sup>44</sup> Though this study did not look at specific California tribal populations it would be worth considering tobacco revenues against health costs.

This study can inform policy-making through its method. By approaching the question as a tradeoff vignette, we were able to capture tribal member attitudes regarding a complex and sensitive problem in an efficient manner. The study's value is therefore also in its method as much as its substantive findings. Tribes might use such a methodological approach—based in their own direct tradeoff and not relying on a vignette—to understand member support about the high presence of tobacco in their own communities. Policy shifts to reduce smoking such as raising price should understand community attitudes about such change. It is our belief that each tribe is unique and as sovereign communities, there is not a "one size fits all" recommendation.

Key to these differences might be what their membership wants, which is important to know for large policy shifts. Therefore, the method used in this study can be utilized in each community to inform debates on tobacco but also other issues. The vignette method used in our study allows for testing attitudes about potential policy shifts on sensitive issues.

This study opens up two potential next steps. The first is that further research needs to be undertaken on the relationship between price and use, and on the shortand long-term costs of high smoking prevalence in AI tribes. Despite the need for further research and the complexities involved with research at the tribal level, it is unlikely that the significant health problems associated with AI tobacco use will recede without tribal political action, which is dependent upon the political will of members and is ultimately what our study seeks to better understand.

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### Appendix

A. Big Bear Vignette Survey Text

We now turn to the fictional example of the Big Bear Tribe. First we will give you some background about the tribe. This tribe is not real and does not reflect any policies our tribe is considering.

Background health and economic information about the Big Bear Tribe

- + About 40 percent of Big Bear adult tribal members are cigarette smokers.
- Health education programs are sponsored by the Big Bear Tribe and some of these programs encourage members to not start smoking and to help current smokers to quit.
- The Big Bear Tribe currently sells cigarettes on its reservation for much less than the non-native communities around them. They collect taxes on these cigarettes, which generate revenue for the tribe.

- Cigarette sales are a source of important revenue for the tribe. It is used [to] fund programs that benefit members, such as housing assistance and academic scholarships.
- Cigarette sales also help the tribe pay for a per capita payments of \$3000 to its members each year.
- Cigarette sales have also created 40 full-time jobs in Big Bear tribal smoke shops.

The Big Bear Tribe is thinking about changes to its tobacco enterprises with the goal of improving the health of its members.

We want to know what you think about some of the different options the Big Bear Tribe is considering. Remember, this is just a survey and it has NO relation to anything being considered at our tribe.

Possible responses:

1	2	3	4
I would definitely disagree	I probably would disagree	I probably would agree	I definitely would agree

- The Big Bear Tribe wants to increase anti-smoking programs, which will result in 10 percent of adult tribal members who smoke to quit smoking. Would you agree with a decision to increase anti-smoking programs?
- 2. Would you agree with a decision to increase anti-smoking programs if **funding for other programs was reduced**?
- 3. The Big Bear Tribe wants to make the cigarettes they sell **more expensive**, which will result in 10 percent of adult tribal members who smoke to quit smoking. Would you agree with the decision **make cigarettes more expensive**?
- 4. By making cigarettes more expensive, less people bought tobacco from the tribe. This meant **less money for the tribe** and budgets had to be cut from \$100,000 to \$80,000.

Do you agree with the decision to make cigarettes more expensive if it meant budget cuts?

- 5. By making cigarettes more expensive, less people bought tobacco from the tribe. Reduced sales meant that 20 of the 40 jobs in tribal tobacco enterprises were lost. Do you agree with the decision to make cigarettes more expensive if it meant that jobs were lost?
- 6. By making cigarettes more expensive, less people bought tobacco from the tribe. Less money meant the tribe reduced the \$3,000 annual per-capita payment to \$1,500.

Do you agree with the decision to make cigarettes more expensive if it meant **cuts** in per-capita payments?

#### NOTES

1. Hilda L. Solis and John M. Galvin, *Labor Force Characteristics by Race and Ethnicity*, 2011 (Washington, DC: 1-59, US Department of Labor and US Bureau of Labor Statistics, 2012), http://www.bls.gov/cps/cpsrace2011.pdf.

2. Gavin Clarkson, "Tribal Bonds: Statutory Shackles and Regulatory Restraints on Tribal Economic Development," *North Carolina Law Review* 85 (2007): 1009–77.

3. Jonathan I. Sirois, "Remote Vendor Cigarette Sales, Tribal Sovereignty, and the Jenkins Act: Can I Get a Remedy?" *Duquesne Law Review* 42 (2003): 42–120.

4. Jerald G. Bachman, John M. Wallace, Jr., Patrick M. O'Malley, Lloyd D. Johnston, Candece L. Kurth, and Harold W. Neighbors, "Racial/Ethnic Differences in Smoking, Drinking, and Illicit Drug Use among American High School Seniors, 1976–89," *American Journal of Public Health* 81, no. 3 (1991): 372–77, PMC1405013; Centers for Disease Control and Prevention, "Vital Signs: Current Cigarette Smoking among Adults Aged > 18 Years—United States, 2005–2010," in *Morbidity and Mortality Weekly Report* (2011), http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6035a5.htm.

5. Centers for Disease Control and Prevention, "Cigarette Smoking among Adults—United States 1998," in *Morbidity and Mortality Weekly Report* (2000): URL: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm4939a1.htm.

6. Won S. Choi, Babalola Faseru, Laura A. Beebe, Allen K. Greiner, Hung-Wen Yeh, Theresa I. Shireman, Myrietta Talawyma, Lance Cully, Baljit Kaur, and Christine M. Daley, "Culturally-Tailored Smoking Cessation for American Indians: Study Protocol for a Randomized Controlled Trial," *Trials* 12 (2011): 126, doi: 10.1186/1745-6215-12-126.

7. Felicia Hodge and Roxanne Struthers, "Persistent Smoking among Northern Plains Indians: Lenient Attitudes, Low Harm Value, and Partiality toward Cigarette Smoking," *Journal of Cultural Diversity* 13, no. 4 (2006): 181–85.

8. Bo Zhang, Joanna Cohen, Roberta Ferrence, and Jürgen Rehm, "The Impact of Tobacco Tax Cuts on Smoking Initiation among Canadian Young Adults," *American Journal of Preventitive Medicine* 30, no. 6 (2006): 474–79, doi: 10.1016/j.amepre.2006.02.001; Frank J. Chaloupka, Kurt Straif, and Maria E. Leon, "Effectiveness of Tax and Price Policies in Tobacco Control," *Tobacco Control* 20, no. 3 (2011): 235–38, doi: 10.1136/tc.2010.039982.

9. Philip DeCicca, Donald Kenkel, and Alan Mathios, "Cigarette Taxes and the Transition from Youth to Adult Smoking: Smoking Initiation, Cessation, and Participation," *Journal of Health Economics* 27, no. 4 (2008): 904–17, doi: 10.1016/j.jhealeco.2008.02.008.

10. Lan Liang, Frank Chaloupka, Mark Nichter, and Richard Clayton, "Prices, Policies and Youth Smoking, May 2001," *Addiction* 98 (Suppl 1, 2003): 105–22, PMID: 12752364.

11. Zhang, et al., "The Impact of Tobacco Tax Cuts."

12. Andrew Hyland, Joseph E. Bauer, Qiang Li, Sara M. Abrams, Cheryl Higbee, Luke Peppone, and K. Michael Cummings, "Higher Cigarette Prices Influence Cigarette Purchase Patterns," *Tobacco Control* 14, no. 2 (2005): 86–92, doi: 10.1136/tc.2004.008730; John A. Tauras, "Public Policy and Smoking Cessation among Young Adults in the United States," *Health Policy* 68, no. 3 (2004): 321–32, doi: 10.1016/j.healthpol.2003.10.007.

13. Patricia Nez Henderson, Shalini Kanekar, Yang Wen, Dedra Buchwald, Jack Goldberg, Won Choi, Kolawole S. Okuyemi, Jasjit Ahluwalia, and Jeffrey A. Henderson, "Patterns of Cigarette Smoking Initiation in Two Culturally Distinct American Indian Tribes," *American Journal of Public Health* 99, no. 11 (2009): 2020–25, doi: 10.2105/AJPH.2008.155473; Raymond Orr, Darren Calhoun, Carolyn Noonan, Ron Whitener, Jeff Henderson, Jack Goldberg, and Patrica Henderson, "A History of Ashes: An 80-Year Comparative Portrait of Smoking Initiation in American Indians and Non-Hispanic Whites, Äîthe Strong Heart Study," *International Journal of Environmental Research and Public Health* 10, no. 5 (2013): 1747–62, doi: 10.3390/ijerph10051747.

38

14. Jean L. Forster, Isaiah Brokenleg, Kristine L. Rhodes, Genelle R. Lamont, and John Poupart, "Cigarette Smoking among American Indian Youth in Minneapolis-St. Paul," *American Journal of Preventative Medicine* 35 (6 Suppl, 2008): S449–56, doi: 10.1016/j.amepre.2008.09.005.

15. Harry A. Lando, Karen M. Johnson, Robin P. Graham-Tomasi, Paul G. McGovern, and Leif Solberg, "Urban Indians' Smoking Patterns and Interest in Quitting," *Public Health Report* 107, no. 3 (1992): 340–44, PMCID: PMC1403658.

16. Daniel W. McKennitt and Cheryl L. Currie, "Does a Culturally Sensitive Smoking Prevention Program Reduce Smoking Intentions among Aboriginal Children? A Pilot Study," *American Indian Alaskan Native Mental Health Research* 19, no. 2 (2012): 55–63, doi: 10.5820/aian.1902.2012.55.

17. Kari A. Samuel, Kurt M. Ribisl, and Rebecca S. Williams, "Internet Cigarette Sales and Native American Sovereignty: Political and Public Health Contexts," *Journal of Public Health Policy* 33, no. 2 (2012): 173–87, doi: 10.1057/jphp.2012.4.

18. Felicia Hodge and Karabi Nandy, "Factors Associated with American Indian Cigarette Smoking in Rural Settings," *International Journal of Environmental Research and Public Health* 8, no. 4 (2011): 944–54, doi: 10.3390/ijerph8040944.

19. Christina M. Pego, Robert F. Hill, Glenn W. Solomon, Robert M. Chisholm, and Suzanne E. Ivey, "Tobacco, Culture, and Health among American Indians: A Historical Review," *American Indian Culture and Research Journal* 19, no. 2 (1995): 143–64, doi: 10.17953/aicr.19.2.x3277u12152v0144.

20. For a comprehensive discussion of tobacco's ceremonial use, see *Tobacco Use by Native North Americans: Sacred Smoke and Silent Killer*, The Civilization of the American Indian Series, ed. Joseph C. Winter (Norman: University of Oklahoma Press, 2001).

21. Diana Flannery, Caleen Sisk-Franco, and Penny N. Glover, "The Conflict of Tobacco Education among American Indians: Traditional Practice or Health Risk?" in *Tobacco and Health*, ed. Karen Slama (New York: Springer US, 1995), 903–05.

22. Tobacco Use by Native North Americans; Roxanne Struthers and Felicia S. Hodge, "Sacred Tobacco Use in Ojibwe Communities," Journal of Holistic Nursing 22, no. 3 (2004): 209–25, doi: 10.1177/0898010104266735.

23. Orr, et al., "A History of Ashes"; Nez Henderson, et al., "Patterns of Cigarette Smoking Initiation."

24. Hyland, et al., "Higher Cigarette Prices"; Joseph E. Bauer, Andrew Hyland, Qiang Li, Craig Steger, and K. Michael Cummings, "A Longitudinal Assessment of the Impact of Smoke-Free Worksite Policies on Tobacco Use," *American Journal of Public Health* 95, no. 6 (2005): 1024–49, doi: 10.2105/ajph.2004.048678; Joanne E. Callinan, Anna Clarke, Kirsten Doherty, and Cecily Kelleher, "Legislative Smoking Bans for Reducing Secondhand Smoke: Exposure, Smoking Prevalence and Tobacco Consumption," *Cochrane Database Systematic Review*, no. 2, www.update-software.com/BCP/WileyPDF/EN/CD005992.pdf.

25. Chaloupka, et al., "Effectiveness of Tax and Price Policies"; Jaime Pinilla, "Tobacco Taxes, Prices and Demand for Tobacco Products: A Comparative Analysis," *Gaceta Sanitaria* 16, no. (2002): 425–35, doi: 10.1016/S0213-9111(02)71952-3; Zhang, et al., "The Impact of Tobacco Tax Cuts."

26. Fred Beauvais, Pamela J. Thurman, Martha Burnside, and Barbara Plested, "Prevalence of American Indian Adolescent Tobacco Use: 1993–2004," *Substance Use & Misuse* 42, no. 4 (2007): 591–601, doi: 10.1080/10826080701202171; US Office on Smoking and Health, "Patterns of Tobacco Use among Women and Girls," in *Women and Smoking: A Report of the Surgeon General* (Atlanta, GA: Centers for Disease Control and Prevention, 2001), www.cdc.gov/tobacco/data\_statistics/sgr/2001/.

27. Choi, et al., "Culturally-Tailored Smoking Cessation."

28. The use of tobacco sales by AIs dates back to the US Supreme Court decision *Washington v. Confederated Tribes of the Colville Indian Reservation*, 447 US 138 (1979). The ruling established that while state governments have the right to have remitted back to them as *sales and excise taxes* on goods created off-reservation and sold by AI tribes or tribal members on tribal lands to non-members of the tribe, a state's enforcement is limited to intercepting the cigarettes prior to reaching tribal land. The ruling limiting a state from raiding tribal tobacco retailers on reservation was derived from seminal

court decisions that recognized AI nations as possessing domestic sovereignty whose political relationship is directly with the federal government and not state governments (see *Johnson v. M'Intosh*, 21 US 543 (1823), and *Cherokee Nation v. Georgia*, 30 US 1 (1831).

Since the *Colville* decision, state governments have tried multiple methods to tax and regulate tobacco on reservations. State governments were able to gather concessions from tribes over tax collections despite the sovereign status of tribes. *Colville* stipulated the tobacco sales to tribal members were not subject to state taxes. Jurisdictional restrictions to on-reservation enforcement made the collection of tax on sales to non-tribal members impractical to enforce on reservations. However, when the state is able to interdict the running of cigarettes from off-reservation wholesalers, the tribe suffers the loss of its investment in the cigarettes interdicted, and tribal staff are often criminally charged with smuggling. To avoid these practical complications, states and tribes typically reach an agreement about the amount of tax that tribes will collect for states on reservation sold tobacco. These agreements between tribes and states—referred to as 'compacts'—usually require all tribes to impose a small tax on tobacco sales that is then paid to states.

29. Sirois, "Remote Vendor Cigarette Sales."

30. Choi, et al., "Culturally-Tailored Smoking Cessation."

31. Editorial board, "State, Tribes Should Seek Common Ground on Tobacco Tax Agreements," *The Oklahoman*, June 17, 2013, http://newsok.com/state-tribes-should-seek-common-ground-on-tobacco-tax-agreements/article/3851742.

32. Ibid.

33. State Excise Tax Rates of Cigarettes (Washington, DC: Federation of Tax Administrators, 2015), www.taxadmin.org/fta/rate/cigarette.pdf.

34. Bill Orzechowski and Rob Walker, *The Tax Burden on Tobacco Historical Compilation* (Arlington, VA: Orzechowski and Walker, 2012), www.taxadmin.org/fta/tobacco/papers/tax\_burden\_2012.pdf.

35. Personal conversation between author and reservation smokeshop employee, May 14, 2014.

36. Alexander Ding, "Curbing Adolescent Smoking: A Review of the Effectiveness of Various Policies," *Yale Journal of Biology and Medicine* 78, no. 1 (2005): 37–44, PMCID: PMC2259139; Zhang, et al., "The Impact of Tobacco Tax Cuts."

37. Forster, et al., "Cigarette Smoking among American Indian Youth."

38. US Surgeon General, Preventing Tobacco Use among Youth and Young Adults: A Report of the Surgeon General (Atlanta, GA: Centers for Disease Control and Prevention, US Department of Health and Human Services, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2012), www.cdc.gov/tobacco/data\_statistics/sgr/2012/.

39. Andrew Hyland, Cheryl Higbee, Joseph E. Bauer, Gary A. Giovino, Terry Alford, and K. Michael Cummings, "Access to Low-Taxed Cigarettes Deters Smoking Cessation Attempts," *American Journal of Public Health* 95, no. 6 (2005): 994–95, doi: 10.2105/AJPH.2004.057687.

40. Beauvais, et al., "Prevalence of American Indian Adolescent Tobacco Use."

41. Eva M. Garroutte, Jack Goldberg, Janette Beals, Richard Herrell, and Spero M. Manson, "Spirituality and Attempted Suicide among American Indians," *Social Science and Medicine* 56, no. 7 (2003): 1571–79, doi: 10.1016/S0277-9536(02)00157-0.

42. Donald Philip Green and Ann Elizabeth Gerken, "Self-Interest and Public Opinion toward Smoking Restrictions and Cigarette Taxes," *Public Opinion Quarterly* 53, no. 1 (1989): 1–16, doi: 10.1086/269138.

43. Ellis Owusu-Dabo, Sarah Lewis, Ann McNeill, Anna Gilmore, and John Britton, "Support for Smoke-free Policy, and Awareness of Tobacco Health Effects and Use of Smoking Cessation Therapy in a Developing Country," *BioMedical Central Public Health* 11 (2012): 572, doi: 10.1186/1471-2458-11-572.

44. Delight E. Satter, Dylan H. Roby, Lauren M. Smith, Kathalena K. Avendano, Jackie Kaslow, and Steven P. Wallace, "Costs of Smoking and Policy Strategies for California American Indian Communities," *Journal of Cancer Education* 27, no. 1 (2012): 91–105, doi: 10.1007/s13187-012-0340-5.