Reviewer's report

Title: Consumption of single cigarettes and quitting behavior: A longitudinal analysis of Mexican smokers

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Reviewer: Joachim Marti

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General comments:

In this paper, authors use longitudinal data from adult smokers of six Mexican cities to investigate single cigarettes use - that is quite prevalent despite its ban - and its potential association with attempting to quit and successful cessation. The sample consists of two consecutive waves [Nov.-Dec. 2008 (wave 3) and Jan.-Feb. 2009 (wave 4)] of the International Tobacco Control Policy Evaluation Survey (ITC), for Mexico. Authors successively analyze the association between covariates and four outcomes of interest: whether or not the respondent bought singles at last purchase, the frequency of purchasing singles, whether or not the respondent has attempted to quit between the two waves, and whether or not the respondent successfully quit between the two waves. In all multivariate models, authors control for individual characteristics (gender, age, education, and income). In addition authors use a different set of other relevant control variables in each model, including information on smoking behavior, quitting behavior, and on singles-related issues.

On a theoretical basis, the availability and the use of single cigarettes can lower or increase successful cessation rates in the adult population of smokers. On the one hand, the purchase of singles may be seen as a way to reduce consumption in order to quit (price and research costs per cigarette are higher in the case of singles purchase as compared to pack purchase). On the other hand the availability of singles may maintain smoking rates for various reasons. First, smoker for whom a pack is too expensive may see singles as an affordable alternative. Then, seeing singles may cause urges to smoke among smokers, and among former smokers, i.e. singles may prevent cessation and promote relapse. The true effect of availability and use of singles on smoking cessation is unclear and remains an open empirical issue. That’s what makes the question rose in this paper particularly interesting.

Authors find some evidence that smokers who purchased more frequently singles to control their consumption were more likely to have made a quit attempt between the two waves. They don’t find any consistent association between urges to smoke when seeing singles and attempting to quit or successfully quit. The association between the frequency of buying singles to control consumption and successful cessation was found to be non-monotonic. Authors conclude that the relationship between singles use and quitting behavior is complex and still
unclear.

The research question is interesting and the paper extends the scarce literature on singles use in several respects. The work is an extension of a previous study by some of the same authors (JFT, VV, and RO) published in 2009 that investigate the association between singles and adult cigarette consumption in Mexico in a cross-sectional framework. The main advantages of this research are the use of longitudinal data and the focus on quitting behavior among adults (past studies where mostly focused on single use among youth). However, the study has some shortcomings mentioned by the authors (attrition bias, impossibility to assess relapse, problem of generalization of the results) and some points need clarifications. I first list some comments on specific points in the text that must be clarified or changed, and then give some suggestions that could improve the results.

Compulsory revisions:

Background:

§1 last sentence: add something about the two potential effects (+ and -)
§2 I don’t see the link between accessibility of singles and cigarette package as an advertising channel (singles are precisely not sold in packs)

Study sample:

Mention earlier the longitudinal nature of the data.
The number of observations used in the analyses is not clear:

Study sample, line 12: wave 3 analytic sample (n=1751)
Results, §1, line 1: n=1042 smokers participated in wave 3
Table 1: n=1042 refer to male only?
totals are not consistent
Table 2, 3, 4 number of observations used in each multivariate model is missing

Measures:

Mention why you used the 30 days threshold to define successful quitters (did you try other limits?)

Along the manuscript the question whether a covariate is measured at baseline or at follow-up is not always clear, especially regarding self-reported quit attempts (that was measured both at w3 and w4)

Pay attention to the wording of covariates:
Table 2 “Tried quit in last year”
Table 3 “Quit attempts in last year”

§ singles use and perception, line 13: not having smoked singles in the previous
6 months cannot be the reference category in each case.

§ singles use and perception, line 14: not clear, explain better the construction of interactions

§ sociodemographic variables, line 7-8: mention under Table 2, 3, 4 that “missing income” dummies coefficients are not reported.

Analysis:

The term “adjustment” or “adjusted” is used both in relation to the sampling and design (adjustment=using sampling weights), and in relation to the odd ratios in the multivariate analysis (adjustment=controlling for all other covariates). This is confusing.

Results:

§1 mention in the text the significance of the difference (p<0.05) (p<0.01), etc.

Decide to use whether OR or RR, but not both.

§3, line 3-4: “more frequent purchases of singles were made by…heavier smokers”. No, that’s the contrary.

End of §3: the sentence is too long and confusing (please re-write more clearly)

Suggestions:

To me, the relevant results to interpret the significance of the association between the covariates and the outcomes of interest are the odd ratios of the multivariate models. The appearance of the “crude” odd-ratios in Tables (2, 3, 4) make the results less readable.

Is it possible to associate each individual to a city? If it is the case, the inclusion of city dummies might improve the models (=account for time-invariant city-specific unobserved characteristics that might influence the outcomes).

Purchase models (Table 2):

A first interesting result is that the two “competing effects” are significant: buying singles at last purchase is associated both with intention to quit and urge to smoke when seeing singles. This is verified in the frequency of purchase equation. Did you estimate a model with “frequency of purchasing singles to reduce consumption” as dependent variable?

Quitting models Table 3 and 4:

Try to include interactions between smoking intensity and “urge to smoke when seeing singles”, and interactions between smoking intensity and “frequency of buying singles to reduce consumption”.

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests