Who is afraid of smoking bans?

An evaluation of the effects of the Spanish clean air law on expenditure at hospitality venues

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Abstract

Background:

In January 2011 Spain modified clean air legislation in force since 2006, removing all existing exceptions applicable to hospitality venues. Although this legal reform was backed by all political parties with parliamentary representation, the government's initiative was contested by the tobacco industry and its allies in the hospitality industry. One of the most voiced arguments against the reform was its potentially disruptive effect on the revenue of hospitality venues. This paper evaluates the impact of this reform on household expenditure at restaurants and bars and cafeterias.

Methods and empirical strategy:

We use household expenditure micro-data for years 2006 to 2012 to estimate models for the probability of observing expenditures and the expected level of expenditure. We apply a before-after analysis with a wide range of controls for confounding factors and a flexible modeling of time effects in order to identify the effects of the reform.

Results

Our results suggest that the reform caused a 2% reduction in the proportion of households containing smokers but did not cause reductions in households' expenditures on restaurant services or on bars and cafeteria services.

Introduction

In January 2011 Spain modified clean air legislation in force since 2006, removing all existing exceptions applicable to hospitality venues. Although this legal reform was backed by all political parties with parliamentary representation, the government's initiative was contested by the tobacco industry and its allies [1]. The regulations enacted in 2006 were a huge step forward in the process of achieving smoke free environments (Galán et al. [2], SEE [3], Villalbí [4]), nonetheless, as Schneider et al. [5] have argued, over 2006-2010 the regulations for Spanish hospitality venues fitted the "Traditional Hospitality" and "Courtesy of Choice" schemes designed by the tobacco industry in order to dilute the growing concern about the hazards of environmental tobacco smoke. Indeed, the so called "Spanish model" in force over 2006-2010 basically permitted small establishments (less than 100 sq. meters) to self regulate and only imposed the obligation to delimit smoking and non smoking areas upon the rest. This regulatory framework was showcased as an example of a satisfactory compromise to be applied in countries considering smoking bans at hospitality venues and was also used to challenge more stringent regulations elsewhere. That the tobacco industry lobby would oppose its replacement for a total smoking ban could hardly be unexpected, therefore. And that part of the Spanish hospitality industry would be involved in this opposition was also unsurprising, given their previous record in the promotion of "Traditional Hospitality" and "Courtesy of Choice" regulations [5]. In fact, one of the most voiced arguments against the reform was its potentially disruptive effect on the revenue of hospitality venues. At the public hearings held by the Spanish Parliament while the reform was being debated, a spokesman for FEHR (*Federación Española de Hostelería*), a hospitality industry association sponsored [6] by, among others, the tobacco company Phillip Morris, warned the Health Commission about a drop of 7% in revenue for restaurants and of 10%-15% for bars and cafes if the reform was passed [7].

Given the prominence of concerns about threats to the profitability of the hospitality industry amongst the challenges faced by the implementation of Article 8 of the World Health Organisation's Framework Convention on Tobacco Control [8], which requires signatory countries to adopt legislation to protect citizens from tobacco smoke in indoor public places, and the value of the Spanish case as an example for other countries [5], it is important to evaluate *ex post* the impact of this reform. The published evidence to date in this regard is scarce, however. FEHR [9] released results from a survey to hospitality venues over the two months following the reform suggesting a drop in sales of more than 14% for restaurants and more than 15% for bars and cafeterias. The value of these results as a gauge of the effects of the policy change may be questioned. On one hand, with reference to a study [10] on the effects of the Scottish ban, Glantz [11] has argued that sales volumes data elicited from hospitality business managers after a smoking ban are subject to bias. In particular Glantz argues that the efforts of the tobacco industry to spread the idea that total bans –as opposed to "Courtesy of Choice" regulations- would lead to loss of business activity create a sort of placebo effect whereby self reports after a ban systematically underestimate the true level of business. On the other hand, FEHR [9] does not take into account pre-existing trends in the volume of sales, therefore confounding general economic climate factors with genuine policy effects. This concern is supported by National Accounts figures revealing that the average change in activity at venues serving food and drinks over the three years prior to the reform, 2008-2010, was -4.6%, while the corresponding average over the following two years 2011-2012, was -4% [12].

The availability of micro-data on household expenditure at restaurants and bars and cafes over a sufficiently long period offers the possibility of contributing to the literature with an evaluation of this important policy change correcting these shortcomings.

Data and empirical strategy

Our main data source is the set of micro-data files of the *Encuesta de Presupuestos Familiares* (EPF) for years 2006 to 2012 [13]. This is an annual survey of Spanish households, representative both at the national and regional levels. Approximately 21000 households are sampled every year. Along with a wide set of socio-demographic variables such as household income or employment status of its members, it records all expenditures incurred by households over a monitoring period whose length varies with the nature of the consumption item. In the case of expenditure on hospitality venues, and tobacco products, a diary is filled over a monitoring period of 14 days. The samples are uniformly distributed over the corresponding calendar year.

There are several advantages associated to the use of household expenditure survey micro data when analyzing the effects of a smoking ban on hospitality business levels. Firstly, even in popular touristic destinations such as Spain, private domestic consumption is the main component of sales by the non-accommodation sector of the hospitality industry. It is also the primary economic outcome of interest, for the effects on employment are indirectly determined by changes in sales. And since these data are elicited through regular general-purpose surveys containing hundreds of expenditure items, it is unlikely that they are contaminated by the sort of bias discussed above. Secondly, micro data allow a sufficient level of disaggregation by type of venue, across which the impacts of the ban may be quite different. Thirdly, micro-data on expenditure allow the distinction between two important dimensions of consumption: participation and, conditional on participation, level of expenditure. And fourthly, it allows to control for important characteristics such as income and, importantly, whether the household contains smokers. Against these advantages there is the possibility of measurement error induced by recall bias and/or underreporting of expenditures on some items. However, these measurement errors are expected to be innocuous to the extent that they are not systematically related to the change in regulation whose effects we aim to evaluate.

Our main outcomes of interest are i) whether, over the monitoring period, the household recorded expenditures on restaurants and, separately, on bars and cafes and ii) conditional on recording expenditures, how much they spent. Our aggregate category "Restaurants" contains EPF expenditure rubrics 11111 (*Menú del día en restaurantes*) and 11112 (*Comidas y cenas en restaurantes*) while our aggregate category "Bars and cafeterias" contains EPF expenditure rubrics 11113 ("*Consumiciones en bares y cafeterías*") and 11114 ("*Consumiciones en pubs y discotecas*"). We do not analyze the remaining rubrics related to the (non-accomodation) hospitality industry in the EPF, *Banquetes, ceremonias y celebraciones fuera del hogar* (rubric 11115) and *Cantinas y comedores* (rubric 1112). The former contains payments for wedding banquets and the latter registers expenditures on subsidized meals offered by some public institutions to their workers and meals at schools. Another outcome of interest is whether the household spends on tobacco products (rubrics 2211, 2212 and 2213), which, as we shall explain below, is used to identify the presence (or absence) of smokers.

As it is well known, micro data on fine aggregates of expenditure typically contain a large fraction of zero records. The economics literature has considered three potential causes for

these: no participation in the consumption of the corresponding good or service, infrequency of purchase and corner solutions [14]. Although there are econometric models that accommodate these three types of censoring, in practice it is convenient to incorporate a priori information in order to reduce their complexity and identification requirements.

In the case of expenditures on tobacco in the EPF, we may interpret zero records as evidence that the household does not contain smokers (i.e. no participation). This is grounded on the fact that Spanish smokers purchase tobacco in small quantities over short periods and, as shown by Miles [15], the probability that he (or she) is not observed purchasing tobacco over a monitoring period of one week is negligible.[1] Therefore we will use a standard binary choice model (Logit) in order to estimate the probability that a household contains smokers.

In the case of expenditures on hospitality venues, zero records are most likely due to infrequency of purchase and/or corner solutions, because these services are fundamentally different to consumption items such as tobacco or alcoholic beverages, which some consumers would never buy regardless of budgetary circumstances. For hospitality services it is difficult to distinguish between infrequent purchases and corner solutions, as indeed consumers may respond to tighter budgetary conditions by decreasing the frequency with which they patronize bars and restaurants. This would advise in favour of using some bivariate alternative to the well known Tobit model, because in the latter all zero records are assumed to be corner solutions and the probability of observing positive expenditures is governed by the same process as that governing the consumption level. Nonetheless, in our context it seems reasonable to invoke the concept of "first hurdle dominance" [14, 16] whereby once the first zero generating process is passed there are no further sources of censoring[2]. It is also useful to note that, unlike some infrequently purchased goods such as clothing for which expenditure data overstates the underlying rate of consumption, in the case of hospitality services the expenditures incurred during the monitoring period coincide with actual consumption (i.e. it is not possible to stockpile hospitality services). Therefore it is not necessary to call for models that account for discrepancies between expenditure and consumption such as the P-Tobit [17] or its more elaborate counterparts [19, 20].

In these circumstances we opt for "two part" models [16] where the probability of observing a positive expenditure and, for those who spend, the expected level of expenditure, are separate functions of a (possibly common) array of explanatory variables. The probability part is estimated by Maximum Likelihood with a logistic specification and the expected expenditure part is estimated by Ordinary Least Squares with a logarithmic specification for the dependent variable.[3]

Concerning the identification of the causal effects of the policy under study, note that recent studies have used calendar differences in the implementation of smoking bans over comparable territories in order to exploit control groups: Adda et al. [10] for the UK, Kvasnika and Tauchmann [20] and Ahlfeldt and Maennig [21] for Germany. For countries where, like Spain, bans were applied to all regions simultaneously, this quasi-experimental design requires strong assumptions. For instance, Pieroni et al. [22] analyse the effects of the Italian ban using France

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[1] In our case the monitoring period is two weeks so this probability is even smaller.

[2] It is useful to view first hurdle dominance in our context as assuming that, once at the hospitality venue, the consumer will spend.

[3] All estimates are obtained with the STATA 12 © package using the sampling weights provided in the micro data files.

and Spain as control groups, implicitly assuming that the three countries are subject to the same pre-existing trends. De Schoenmaker et al. [23] also use a quasi-experimental design to study the Belgian ban at restaurants using bars as a control group, thus assuming, apart from the existence of common previous trends across the two types of venues, that the ban at restaurants did not affect patronage at bars.

Unfortunately there are no suitable control groups for the Spanish case. It may at first sight appear that households without smokers would constitute an adequate control group against which to compare a potential change in expenditure in households with smokers after the reform. However, members of households without smokers are also likely to change their consumption of hospitality services after a smoking ban. On one hand, they may increase their patronage if smoke free venues are perceived as more attractive. On the other, they may also reduce their patronage if their visits to hospitality venues are driven by social interaction within groups containing smokers [24]. Likewise, the use of other European countries as controls would be problematic because during the period of study the economic climate in Spain was particularly adverse, relative to its neighbors. It is also hard to find other types of expenditure for which the necessary assumptions are reasonable. In these circumstances, we opt for a before-after analysis. Since we use a time-series of cross sections, we are able to condition on a wide range of observable factors affecting the outcomes before examining the time effects associated to the periods before and after the reform. These time effects are modeled in a flexible way so as not to impose undue restrictions and properly capture trends that might either hide or appear as a causal effect. This is akin to the strategy of "deconstruction" of time effects followed by Jones et al. [25] in their analysis[4] of the impact of smoking bans in the UK on smoking prevalence. The before-after strategy is also found in studies using aggregate time series such as Melberg and Lund [26]. Although the before-after strategy is generally acknowledged to provide less robust evidence about the causal effects of a policy reform than strategies that exploit adequate control groups, this study complies with the methodological requirements used by Hyland et al. [27] in their recent review of the literature on the impact of smoking bans on the hospitality industry in the US. Namely, i) it uses objective outcome measurements, ii) it uses sufficient pre and post law data iii) it uses statistical regression methods and iv) it uses controls for economic trends that could affect business.

The following explanatory variables are used. Unless stated otherwise, they are modeled as binary indicators (dummy variables):

Logarithm of monthly household income at constant 2012 prices (positive continuous variable)

Logarithm of household expenditure on all goods and services except hospitality services at constant 2012 prices (positive continuous variable),

Labour status indicators for the head of the household: Distinguishing between employed, unemployed, retired and otherwise inactive.

Household structure: Type of household (whether childless couple vs. couple with children etc.), number of equivalent adults (positive continuous variable).

Head of household characteristics: Age indicators, education level indicators.

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[4] Jones et al. [25] use additional strategies afforded by the calendar differences in the implementation of the ban across parts of the UK.

Geographical variables: Regional indicators at the *Comunidad Autónoma* level, indicators for municipality population density.

Time variables: Yearly binary indicators

In addition to these variables, we use two further controls when estimating a logit model for the probability that a household contains smokers. Namely, the inflation adjusted tax levels for manufactured cigarettes and for fine cut tobacco.

For each of our outcomes of interest we test a series of formal hypotheses on the structure of the time effects in order to detect patterns consistent with potential causal effects induced by the change in regulatory framework:

1) Hypothesis of equality of time effects from 2006 through to 2010. This hypothesis states that, conditionally on the rest of explanatory variables, there is no trend in the outcome over the pre reform years. If this hypothesis is satisfied then any subsequent break in the time effects is more likely to be caused by the new regulation. On the other hand if this hypothesis is rejected then any subsequent difference in time effects may be suspected to form part of the pre existing trend.

2) Hypothesis of equality of time effects from 2006 through to 2011. This hypothesis states that, conditionally on the rest of explanatory variables, the time effect for the year of the reform is not significantly different to the observed pattern over the pre reform years. This hypothesis is consistent with the absence of a causal effect from the reform over the first year after its implementation. On the other hand if H1 is accepted and H2 is rejected then there are grounds to suspect that the new legislation is causing a change in the outcome of interest.

3) Hypothesis of equality of the 2011 and 2010 time effects. This hypothesis states that, conditionally on the rest of explanatory variables, there is no significant change in the average outcome between the pre reform year and the post reform year. Again, this hypothesis is consistent with the absence of a causal effect from the reform over the first year after its implementation. It is in fact a variation of H2 that does not consider pre existing trends. An acceptance of H1 with a rejection of H3 would suggest a causal effect for the reform.

4) Hypothesis of equality of time effects from 2006 through to 2012. This hypothesis states that, conditionally on the rest of explanatory variables, none of the time effects for the two post reform years are significantly different to the observed pattern over the pre reform years. This hypothesis is consistent with the absence of a causal effect from the reform over the two years after its implementation. In similarity with H2, if H1 is accepted but H4 is rejected then there are grounds to suspect a causal effect for the reform.

5) Hypothesis of equality of the 2012 and 2010 time effects. This hypothesis states that, conditionally on the rest of explanatory variables, there is no significant change in the average outcome between the pre reform year and that of two years hence. Again, this hypothesis is consistent with the absence of a causal effect from the reform two years

after its implementation. An acceptance of H1 with a rejection of H5 would be consistent with the existence of a causal effect.

Results

Before presenting the results from the hypothesis tests on the estimates for the statistical models, it is worth to comment on simple descriptive statistics in order to provide a glimpse of the evolution of the outcomes of interest over the study period.

Table 1 presents an overview of the change in economic circumstances faced by households and the concomitant changes in total expenditure and expenditure on hospitality venues, the latter referring to the 14 days monitoring periods used in the EPF for these types of expenditures. Between 2006 and 2012, average household monthly real income decreased by 10.5%. This was accompanied by a disproportionate reduction of 23.7% in annual total real expenditure. Simultaneously, the fractions of households observed spending on restaurants and bars and cafeterias over the fortnightly monitoring periods decreased by 4.7% and 1.5% respectively. And, among those who spent on these services, average expenditure dropped by 24.6% and 24.1% respectively. The last column in table 1 shows a downward trend in the proportion of households that contain smokers, with a faster decline after 2010, amounting to 5.5% less households containing smokers at the end of the period.

Table 1. Trends in expenditures and income (all households)

Year	Annual total expenditure	Monthly income	Fraction recording expenditures on restaurants	Fortnightly expenditure on restaurants	Fraction recording expenditures on bars and cafeterias	Fortnightly expenditure on bars and cafeterias	Households containing smokers
2006	28691	2068	55.5%	81	82.4%	79	52.3%
2007	29022	2195	58.9%	83	83.1%	79	53.4%
2008	27466	2176	56.5%	75	83.5%	75	52.3%
2009	25806	2155	54.7%	69	82.9%	73	52.1%
2010	24880	2046	53.8%	67	82.5%	68	51.1%
2011	23596	1987	53.0%	66	81.5%	64	49.3%
2012	21887	1850	50.8%	61	80.9%	60	46.8%
Change over period (%)	-23.7%	-10.5%	-4.7%	-24.6%	-1.5%	-24.1%	-5.5%

Note: All money figures are expressed in € at 2012 constant prices

Table 2 presents the corresponding figures for households that contain smokers. Unsurprisingly (the larger the household the more likely it is that it contains at least one smoker) these households are larger on average than the typical Spanish household (2.36 vs. 2.1 equivalent adults respectively) so annual expenditure and monthly income are larger on average for this subset of households. Their larger size may also explain the larger fraction of these households that are observed spending on restaurants and bars and cafeterias, but this fact could also be a result of consumption complementarities between smoking and using hospitality services. Note also that these households spend on average less on restaurants and more on bars and cafeterias that the typical Spanish household represented in table 1.

Table 2. Trends in expenditures and income (households containing smokers)

Year	Annual total expenditure	Monthly income	Fraction recording expenditures on restaurants	Fortnightly expenditure on restaurants	Fraction recording expenditures on bars and cafeterias	Fortnightly expenditure on bars and cafeterias
2006	31828	2256	76.1%	71	96.2%	89
2007	31785	2350	79.1%	71	95.9%	88
2008	30458	2338	76.1%	63	96.2%	84
2009	28704	2318	74.4%	57	95.7%	81
2010	27692	2187	72.8%	56	95.5%	74
2011	26353	2147	73.8%	57	95.0%	69
2012	24820	2006	71.1%	50	94.1%	66
Change over period (%)	-22.0%	-11.1%	-4.9%	-28.9%	-2.1%	-25.9%

Note: All money figures are expressed in € at 2012 constant prices

Despite these differences, the trends over 2006-2012 for households containing smokers are roughly similar to those observed for all households. Annual total expenditure and monthly income fell by 22% and 11.1% respectively. The fractions of households spending on restaurants and bars and cafeterias decreased by 4.9% and 2.1% respectively. And, among those who spent on these services, average expenditure dropped by 28.9% and 25.9% respectively. The more noticeable differences in the patterns of the trends between households containing smokers with respect to the general population of households are slightly larger drops in i) the fraction of spenders on bars and cafeterias (2% vs. 1.5%), ii) expenditure on restaurants among those who spend (28.9% vs. 24.6%) and iii) expenditure on bars and cafeterias among those who spend (and 25.9% vs. 24.1%).

Tables 1 and 2 suggest that there are downward trends in the evolution of the outcomes, and that these trends may be associated to the deteriorating economic climate. Therefore it is important to control adequately by economic factors in order to avoid their confounding effect when comparing pre and post reform periods. This we do by, as described earlier, including income, total expenditure (minus expenditure on hospitality services) and labour status as explanatory variables in our models. Furthermore, the evidence in tables 1 and 2 also suggests that the analysis should be carried out separately for households with and without smokers.

Table 3 presents the estimation results for the time effects in our models (all models are estimated without a constant term)[5]. On the left side there are the results for the logit models for whether the household contains smokers (first column) and (broken down by the latter condition) whether the household spends on restaurant services (second and third columns) and whether the household spends on bar and cafeteria services (third and fourth columns). The rest of columns correspond to the log expenditure models for restaurant services (fifth and sixth columns) and bar and cafeteria services (seventh and eighth columns). Graphs 1 to 9 depict these time effects with their corresponding confidence intervals.

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[5] The statistical appendix contains tables with descriptive statistics for the estimating samples and the full set of estimates.

Table 3. Time effects and hypotheses tests									
		LOGIT				LOG EXPENDITURE			
	Household contains smokers	Household spends on restaurant services		Household spends on bar and cafeteria services		On restaurant services		On bar and cafeteria services	
		Hhlds. without smokers	Hhlds. with smokers	Hhlds. without smokers	Hhlds. with smokers	Hhlds. without smokers	Hhlds. with smokers	Hhlds. without smokers	Hhlds. with smokers
Time effects					Estimates (all statistically significant)				
Year 2006	-3.06	-7.37	-4.92	-5.74	-4.59	5.18	2.06	3.48	3.29
Year 2007	-3.00	-7.27	-4.74	-5.73	-4.68	5.24	1.95	3.53	3.25
Year 2008	-3.04	-7.32	-4.90	-5.70	-4.54	5.12	1.70	3.47	3.21
Year 2009	-3.00	-7.41	-4.96	-5.73	-4.62	5.11	1.57	3.49	3.16
Year 2010	-3.02	-7.32	-5.03	-5.70	-4.61	5.05	1.43	3.48	3.10
Year 2011 (reform implemented)	-3.07	-7.33	-4.94	-5.73	-4.63	5.06	1.41	3.50	3.05
Year 2012 (reform implemented)	-3.11	-7.29	-5.02	-5.62	-4.68	5.00	1.32	3.48	3.04
Hypotheses testing					p-value of test				
H1) Ho:Year2010=…=Year2006	0.37	0.01	0.00	0.84	0.62	0.00	0.00	0.10	0.00
H2) Ho: Year2011=…=Year2006	0.11	0.02	0.00	0.91	0.74	0.00	0.00	0.16	0.00
H3) Ho: Year2011=Year2010 (two tail test)	0.11	0.67	0.03	0.51	0.82	0.65	0.54	0.55	0.09
H4) Ho: Year2012=Year2011=…=Year2006	0.01	0.02	0.00	0.07	0.70	0.00	0.00	0.19	0.00
H5) Ho: Year2012=Year2010 (two tail test	0.00	0.55	0.90	0.05	0.42	0.12	0.00	0.70	0.07
N	145377	71248	74129	71248	74129	22907	54925	50266	71057

i)   Probability that a household contains smokers

The hypothesis of no time trend prior to the reform (H1) is accepted (p-value 0.37). However, the hypotheses that the time effect for year 2011 is equal to that of year 2010 or to the sequence of time effects over 2006-2010 are not accepted by such a wide margin (p-value 0.11 for both hypotheses). The corresponding hypotheses for 2012 (H4 and H5) are clearly rejected. This evidence, along with the pattern shown in graph 1, suggests a break in the pattern of time effects leading to a reduction in the probability that a household contains smokers. The logit model parameters may not be interpreted directly in terms of such a reduction, but in fact they imply that if the time effect of 2011 (2012) had been applicable to year 2010, then the fraction of households containing smokers would have been 50.% (49.1%) instead of the 51.1% actually observed for such year. Since the statistical model contains a wide range of controls, including measures for the tax burden of both manufactured cigarettes and fine cut tobacco, it is tempting to attribute these reductions to the effect of the reform. Nonetheless they could be a result of other factors such as an increasing general anti smoking sentiment. If this was the case, the time pattern just described would suggest that this sentiment may itself have been influenced by the reform.

INSERT GRAPH 1 ABOUT HERE

ii)   Probability of spending on restaurant services

Focusing first on households that do not contain smokers, note that while H1 is rejected the time pattern suggested by the estimates in table 3 and graph 2 is not monotonic. All else held equal, the probability that a household spends on restaurants increases from 2006 to 2007, falls in 2008 and 2009, increases again in 2010 and remains roughly leveled since. Consequently while H2 and H4 are rejected (hypotheses stating respectively that the time effects for 2011 and 2012 are equal to the irregular pattern over 2006-2010), H3 and H5 (correspondingly stating that these effects are equal to that for the year 2010) are accepted. The evidence therefore suggests that the reform did not affect negatively this outcome in this population group.

INSERT GRAPH 2 ABOUT HERE

For households containing smokers the time pattern is similar (graph 3) so H1, H2 and H3 are rejected. Note however that the data reject the hypothesis that the time effect for 2011 is equal to that of 2010. In this case the estimates suggest a statistically significant increase in the fraction of households containing smokers that patronized restaurants. Indeed, the counterfactual probability for year 2010 with the time effect for year 2011 is 74.3% instead of the observed 72.8%. There is no statistically significant difference between the 2012 and 2010 time effects, however. Therefore the evidence suggests that the reform did not affect negatively this outcome in this population group.

INSERT GRAPH 3 ABOUT HERE

iii)   Probability of spending on bar and cafeteria services

For households without smokers, note that H1, H2 and H3 are accepted. This suggests that there was no time trend over 2006-2010 and that there is no break in the pattern in 2011, in accordance with the evidence shown in graph 4. H4 and H5 are rejected though, with the estimate for the 2012 time effect implying a larger probability of spending at bars and cafeterias for this group of households. While the observed fractions for households without smokers in 2010 and 2012 were 79.5% and 78.5% respectively, the logit estimates imply a counterfactual probability for year 2010 under the time effect for year 2012 of 80.7%. Again, this evidence is consistent with the reform not having had a negative effect on this outcome among this population group.

INSERT GRAPH 4 ABOUT HERE

For households with smokers all the hypotheses are accepted, in correspondence with the absence of trends and/or breaks shown in graph 5, which suggests that the reform did not have a negative effect on this outcome among this population group.

INSERT GRAPH 5 ABOUT HERE

iv)   Expenditure on restaurant services

For households without smokers, the time effects trace a non monotonic pattern with a peak in 2007 and an unsteady decline throughout the rest of the period (graphic 6). This leads to a rejection of H1 and also H2 and H4. However, the hypothesis that the time effect for 2011 is equal to that of 2010 cannot be rejected, indicating a termination of the declining pattern. This would be consistent with the absence of a negative impact of the reform on this outcome among this group of the population during the first year after its implementation. For year 2012, the point estimates predict a 5% decrease in expenditure with respect to 2010 all else held equal[6].

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[6] The statistical models for expenditure use the logarithmic transformation for the dependent variable, implying that small differences between time effects might be interpreted as percentage differences in the level of expenditure.

The test statistic for this difference is just outside the conventional rejection zone (p-value 0.12) for the null hypothesis (H5) but in any case this conjunction of evidence raises the question whether this is a resumption of the trend or a one year-delayed effect of the reform. Unfortunately this is the type of situation where the nature of our data and the associated study design do not permit to go any further. We shall encounter similar situations below.

INSERT GRAPH 6 ABOUT HERE

For households with smokers, the time effects trace a steady downward trend throughout the whole of the period (graphic 7), with an implied annual average decrease in expenditure of 16%, leading to the rejection of H1, H2 and H4. As was the case with households without smokers, the time effect for 2011 is not statistically different to that of 2010 (H3, p-value 0.63), which would be consistent with the absence of impact of the reform on this outcome during the first year after its implementation. The estimates suggest a statistically significant reduction in expenditure of 11.6% with respect to 2010 all else held equal. As argued earlier, this evidence would be consistent with a one-year delayed negative causal effect of the reform on this outcome among households with smokers or with a resumption of the trend.

INSERT GRAPH 7 ABOUT HERE

v)   Expenditure on bar and cafeteria services

For households without smokers, the time effects trace a rather flat trajectory except for a small peak for year 2007 (graphic 8). The hypothesis test of no differences in the time effects over 2006-2010 (H1) is on the verge of the conventional levels of significance (p-value 0.10) but the rest of hypotheses cannot be rejected. This is consistent with the reform not having any effect on this outcome among this group of households.

INSERT GRAPH 8 ABOUT HERE

Among households containing smokers, the time effects trace a clear downward trend over 2006-2010 (graphic 9), with an average annual decrease of 4.8%, and consequently H1 is rejected. The effects for 2011 and 2012 are smaller than that of 2010 by a statistically significant difference of 5% and 6% respectively. Again, our information does not permit to identify whether these latter effects are caused by the reform or are a mere continuation of the previous trend.

INSERT GRAPH 9 ABOUT HERE

Discussion

We do not find evidence suggesting a causal negative impact of the reform on the outcomes related to expenditure on hospitality services. In some cases, such as the probability of spending on restaurants, on bars and cafeterias and the level of expenditure on restaurants by households without smokers, the unconditional reductions in the odds of spending or the level of expenditure disappear once demographics and economic factors are controlled for. In other cases, such as the level of expenditure on restaurants by both types of households, there remains a negative effect even after controlling for such factors in year 2012. Although this negative

effect could be interpreted as a one year delayed causal effect of the reform, it could be alternatively interpreted as a resumption of the preexisting time trends. The fact that for these outcomes there is no negative effect for year 2011, i.e. immediately after the reform, weighs against interpreting the corresponding 2012 effects as its causal consequences. The importance of the preexisting trends is highlighted in the case of expenditure on bars and cafeterias by household containing smokers. Even after controlling for the effect of demographics and economic factors, expenditure decreased by 4.8% on average over 2006-2010, so there are grounds to suspect that the *ceteris paribus* decrease of 5% estimated for the year immediately following the reform is simply a continuation of the trend rather than its causal consequence.

The only outcome for which our empirical evidence appears to be consistent with the reform having a causal impact is the fraction of households containing smokers. In this case, our estimates show that there is no previous trend and that there are statistically significant reductions in the two years following the reform. Our counterfactual analysis suggests that the reform is responsible for 2 points out of the 4.2% drop in this outcome between 2010 and 2012. A reduction in the fraction of households containing smokers does not necessarily imply a reduction in smoking prevalence among individuals, but this finding suggests that the reform has not displaced smoking from public to private settings, which could have led to an increased exposure to second hand smoke at home. This is consistent with the results by Sureda et al. [28], who find that the reform was effective at reducing exposure to second hand smoke during leisure time and also at home, the workplace and while using public transport.

Our results are in stark contrasts to those of Adda et al.[10], who estimated a 10% reduction in pub sales as a result of the Scottish ban. But, in general, our evidence is line with the European studies that use objective sales data and find either no effects or moderate reductions in sales: Pieroni et al. [22] report a change of -3% in sales in Italy, Kvasnicka and Tauchmann [20] and Ahlfeldt and Maennig [21] report respectively a change of -1,7% in sales and no significant effect in Germany, Melbe and Lund [26] report no significant change in Norway and De Schoenmaker [23] reports no significant change in restaurant sales in Belgium. Similarly, our findings conform with 30 out of the 31 US studies that meet the quality criteria used by Hyland et al.[27].

There is an important implication for tobacco control policy from our results. As reported in Gruer et al. [8], the overwhelming majority of the world's population, especially in low and middle income countries, live in places where smoking is permitted at bars and restaurants. If and when these countries, many of which are signatories of the Framework Convention on Tobacco Control, consider banning smoking at hospitality venues they are likely to meet opposition in the form of concerns about losses of patronage and to be lobbied in favour of adopting "Courtesy of Choice" agreements instead. As this paper shows, the Spanish case suggests that these concerns are unfounded.

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Logit for spending on tobacco (time effects)
All households
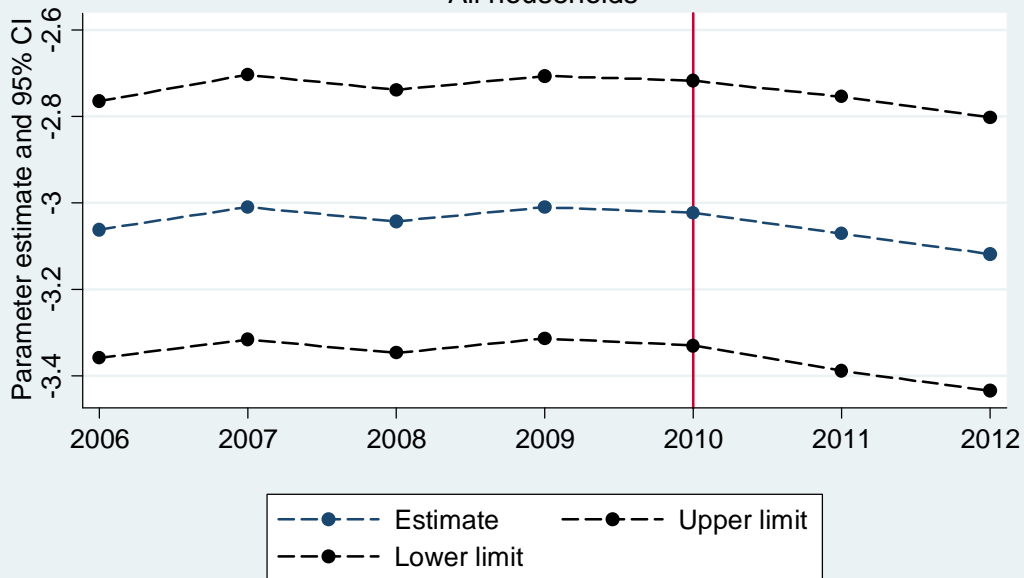
Graph 1

Logit for spending on restaurans (time effects)
Households without smokers

Graph 2

Logit for spending on restaurans (time effects)
Households with smokers

Graph 3

Logit for spending on bars and cafs.(time effects)
Households without smokers
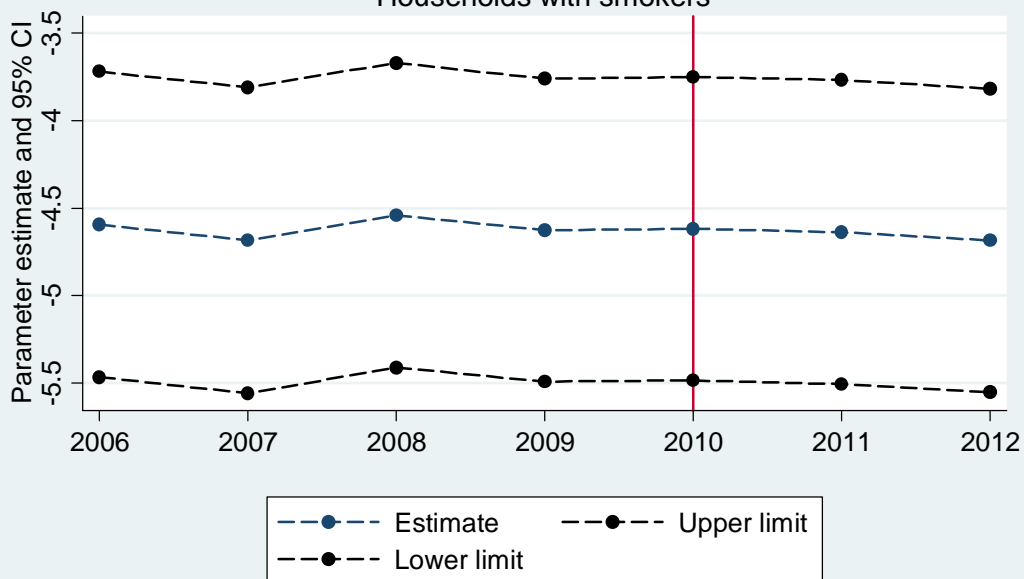
Graph 4

Graph 5

Graph 6

Regression for expenditure on restaurants (time effects)
Households with smokers
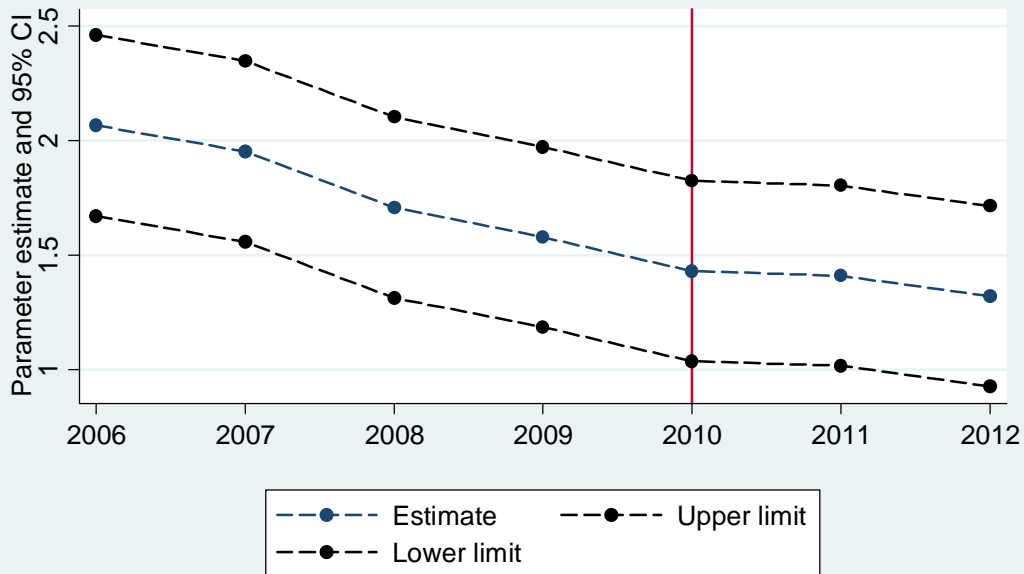
Graph 7

Regression for expenditure on bars and cafs. (time effects)
Households without smokers

Graph 8
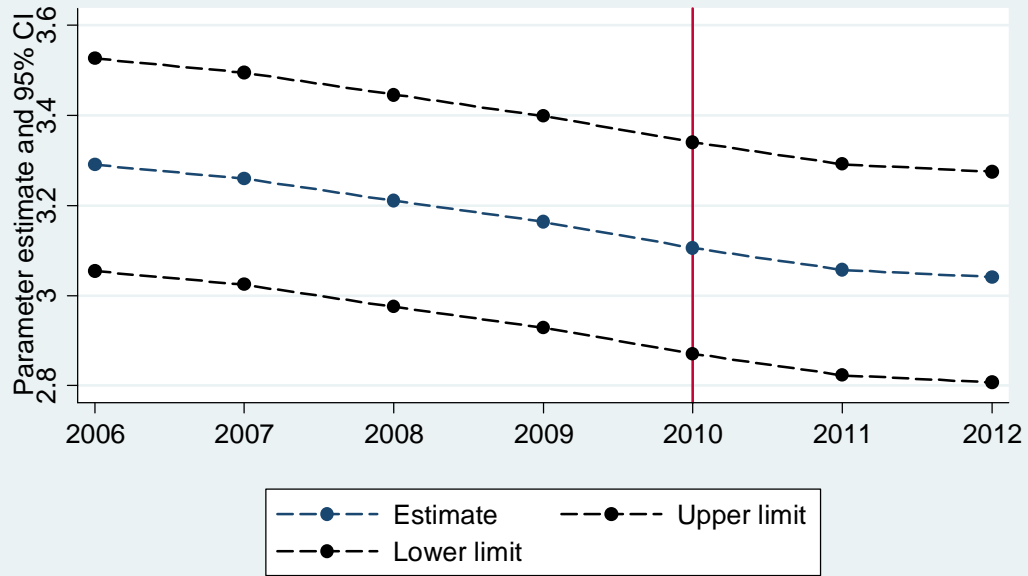
Graph 9

TABLE A.1 DESCRIPTIVE STATISTICS FOR ESTIMATING SAMPLES

Shorthand	Description	All households		Without smokers		With smokers	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
YEARLY INDICATORS							
D_ANOENC1	YEAR 2006	0.133		0.130		0.137	
D_ANOENC2	YEAR 2007	0.137		0.130		0.143	
D_ANOENC3	YEAR 2008	0.143		0.139		0.147	
D_ANOENC4	YEAR 2009	0.145		0.141		0.148	
D_ANOENC5	YEAR 2010	0.144		0.144		0.144	
D_ANOENC6	YEAR 2011	0.143		0.147		0.138	
D_ANOENC7	YEAR 2012	0.156		0.169		0.143	
TOBACCO TAX BURDEN							
BURDEN_CIGS_2012	MINIMUM TAX PER 1000 CIGARETTES (€ OF 2012)	86.824	29.489	87.478	29.817	86.195	29.156
BURDEN_RYO_2012	MINIMUM TAX PER 1 KG. Of FINE CUT TOBACCO (€ OF 2012)	32.890	34.497	34.107	34.725	31.720	34.235
INCOME AND EXPENDITURE							
IMPEXAC_2012	MONTHLY INCOME (1000 € OF 2012)	2.035	1.257	1.834	1.191	2.230	1.287
G2	ANNUAL EXPENDITURE (1000 € OF 2012)	25.186	16.377	21.427	15.447	28.805	16.432
HOUSEHOLD SIZE							
UC1	NUMBER OF EQUIVALENT ADULTS	2.099	0.799	1.825	0.732	2.362	0.771
HOUSEHOLD STRUCTURE (DEFAULT ONE ADULT WITH OR WITHOUT CHILDREN)							
D_COUPNOCHD	CHILDLESS COUPLE	0.225		0.255		0.196	
D_COUPCHD	COUPLE WITH CHILDREN	0.406		0.300		0.507	
D_OTHERFAM	OTHER TYPE OF FAMILY	0.101		0.066		0.135	
AGE OF HEAD OF HOUSEHOLD (DEFAULT < 36)							
EDAD3645	HEAD OF HOUSEHOLD AGED 36-45	0.218		0.193		0.242	
EDAD4655	HEAD OF HOUSEHOLD AGED 46-55	0.195		0.145		0.244	
EDAD5665	HEAD OF HOUSEHOLD AGED 56-65	0.160		0.150		0.170	
EDAD6575	HEAD OF HOUSEHOLD AGED 65-75	0.143		0.184		0.104	
EDADGE76	HEAD OF HOUSEHOLD AGED 76+	0.110		0.166		0.055	
LABOUR STATUS OF HEAD OF HOUSEHOLD (DEFAULT NOT ACTIVE)							
D_OCUPADO	HEAD OF HOUSEHOLD EMPLOYED	0.603		0.517		0.685	
D_PARADO	HEAD OF HOUSEHOLD UNEMPLOYED	0.062		0.052		0.071	
D_RETIRADO	HEAD OF HOUSEHOLD RETIRED	0.273		0.341		0.208	
EDUCATION OF HEAD OF HOUSEHOLD (DEFAULT NO FORMAL SCHOOLING OR PRIMARY)							
D_EDUC2	SECONDARY EDUCATION (FIRST CYCLE)	0.292		0.266		0.318	
D_EDUC3	SECONDARY EDUCATION (SECOND CYCLE)	0.172		0.156		0.188	
D_EDUC4	HIGHER EDUCATION	0.263		0.272		0.254	
POPULATION DENSITY IN AREA OF RESIDENCE (DEFAULT LOW DENSITY)							
D_DENSI1	HIGH DENSITY	0.520		0.509		0.529	
D_DENSI2	INTERMEDIATE DENSITY	0.226		0.226		0.225	
REGION (DEFAULT ANDALUCIA)							
D_CCAA2	ARAGÓN	0.030		0.027		0.032	
D_CCAA3	ASTURIAS	0.025		0.029		0.021	
D_CCAA4	ISLAS BALEARES	0.024		0.026		0.022	
D_CCAA5	ISLAS CANARIAS	0.044		0.045		0.043	
D_CCAA6	CANTABRIA	0.013		0.014		0.012	
D_CCAA7	CASTILLA Y LEÓN	0.059		0.072		0.046	
D_CCAA8	CASTILLA LA MANCHA	0.043		0.045		0.042	
D_CCAA9	CATALUÑA	0.164		0.189		0.139	
D_CCAA10	COMUNIDAD VALENCIANA	0.112		0.134		0.091	
D_CCAA11	EXTREMADURA	0.023		0.018		0.028	
D_CCAA12	GALICIA	0.060		0.071		0.050	
D_CCAA13	COMUNIDAD DE MADRID	0.134		0.081		0.185	
D_CCAA14	REGION DE MURCIA	0.029		0.022		0.036	
D_CCAA15	NAVARRA	0.014		0.016		0.012	
D_CCAA16	PAÍS VASCO	0.050		0.049		0.051	
D_CCAA17	LA RIOJA	0.007		0.008		0.006	
N	SAMPLE SIZE	145598		71345		74253	

Note "IMPEXAC_2012" and "G2" are entered in logarithmic form in the regression models

TABLE A.2 LOGIT MODEL FOR THE PROBABILITY THAT A HOUSEHOLD REPORTS POSITIVE EXPENDITURES ON TOBACCO PRODUCTS (CONTAINS SMOKERS)

```
Logistic regression                          Number of obs   =     145377
                                             Wald chi2(44)   =   15450.23
Log pseudolikelihood = -68497672             Prob > chi2     =     0.0000
```

D_TABACO	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
D_ANOENC1	-3.061101	.1514705	-20.21	0.000	-3.357978	-2.764224
D_ANOENC2	-3.009373	.1562115	-19.26	0.000	-3.315542	-2.703204
D_ANOENC3	-3.042299	.1551699	-19.61	0.000	-3.346427	-2.738172
D_ANOENC4	-3.009603	.1548253	-19.44	0.000	-3.313055	-2.706151
D_ANOENC5	-3.022792	.1562454	-19.35	0.000	-3.329027	-2.716556
D_ANOENC6	-3.070869	.1615431	-19.01	0.000	-3.387488	-2.754251
D_ANOENC7	-3.118081	.1610929	-19.36	0.000	-3.433817	-2.802344
BURDEN_CIGS_2012	.0009875	.0007742	1.28	0.202	-.0005299	.0025049
BURDEN_RYO_2012	-.0011442	.0006823	-1.68	0.094	-.0024816	.0001931
LIMPEXAC_2012	.0740893	.0172912	4.28	0.000	.0401993	.1079794
LG2	.1745851	.0147569	11.83	0.000	.1456622	.203508
UC1	.7426751	.0180182	41.22	0.000	.7073601	.77799
D_COUPNOCHD	.2549671	.0235529	10.83	0.000	.2088044	.3011298
D_COUPCHD	.0737852	.0291633	2.53	0.011	.0166262	.1309442
D_OTHERFAM	.2884365	.0370321	7.79	0.000	.2158549	.361018
EDAD3645	-.1746198	.0256162	-6.82	0.000	-.2248266	-.124413
EDAD4655	.000704	.025916	0.03	0.978	-.0500905	.0514985
EDAD5665	-.2362891	.0279287	-8.46	0.000	-.2910284	-.1815498
EDAD6575	-.6704626	.0370409	-18.10	0.000	-.7430615	-.5978637
EDADGE76	-1.020732	.0400972	-25.46	0.000	-1.099321	-.9421431
D_OCUPADO	.1322123	.038813	3.41	0.001	.0561403	.2082844
D_PARADO	.3292941	.0478	6.89	0.000	.2356079	.4229803
D_RETIRADO	.1221993	.0336844	3.63	0.000	.056179	.1882196
D_EDUC2	-.0537797	.0202768	-2.65	0.008	-.0935214	-.0140379
D_EDUC3	-.1983007	.0256054	-7.74	0.000	-.2484863	-.148115
D_EDUC4	-.4964003	.0247278	-20.07	0.000	-.5448659	-.4479347
D_DENSI1	.0868737	.0189441	4.59	0.000	.0497439	.1240035
D_DENSI2	.0591854	.0210054	2.82	0.005	.0180156	.1003551
D_CCAA2	.1623065	.0348006	4.66	0.000	.0940987	.2305144
D_CCAA3	-.333397	.0374108	-8.91	0.000	-.4067208	-.2600733
D_CCAA4	-.3400912	.038484	-8.84	0.000	-.4155186	-.2646639
D_CCAA5	-.1862688	.070669	-2.64	0.008	-.3247775	-.0477602
D_CCAA6	-.2928475	.0403306	-7.26	0.000	-.3718939	-.2138011
D_CCAA7	-.4898732	.0310149	-15.79	0.000	-.5506612	-.4290852
D_CCAA8	-.1853966	.0345515	-5.37	0.000	-.2531162	-.117677
D_CCAA9	-.471075	.0283331	-16.63	0.000	-.5266068	-.4155431
D_CCAA10	-.5459097	.030357	-17.98	0.000	-.6054084	-.486411
D_CCAA11	.4496546	.037501	11.99	0.000	.376154	.5231553
D_CCAA12	-.5163701	.0320402	-16.12	0.000	-.5791678	-.4535724
D_CCAA13	.8123148	.0320828	25.32	0.000	.7494336	.8751959
D_CCAA14	.3525978	.0381126	9.25	0.000	.2778986	.4272971
D_CCAA15	-.396	.0347959	-11.38	0.000	-.4641988	-.3278013
D_CCAA16	.0537877	.0277471	1.94	0.053	-.0005956	.1081711
D_CCAA17	-.311643	.0409261	-7.61	0.000	-.3918567	-.2314293

TABLE A.3 LOGIT MODEL FOR THE PROBABILITY THAT A HOUSEHOLD REPORTS POSITIVE EXPENDITURES ON RESTAURANT SERVICES (HOUSEHOLDS WITHOUT SMOKERS)

```
Logistic regression                          Number of obs   =      71248
                                             Wald chi2(42)   =   10832.10
Log pseudolikelihood =  -29623738            Prob > chi2     =     0.0000
```

D_HOSTEL_A	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
D_ANOENC1	-7.37346	.2382302	-30.95	0.000	-7.840383	-6.906538
D_ANOENC2	-7.275062	.2374992	-30.63	0.000	-7.740552	-6.809572
D_ANOENC3	-7.320613	.2369267	-30.90	0.000	-7.78498	-6.856245
D_ANOENC4	-7.412896	.2360272	-31.41	0.000	-7.875501	-6.950291
D_ANOENC5	-7.322277	.235672	-31.07	0.000	-7.784185	-6.860368
D_ANOENC6	-7.3396	.2346586	-31.28	0.000	-7.799523	-6.879678
D_ANOENC7	-7.297927	.2347941	-31.08	0.000	-7.758115	-6.837739
LIMPEXAC_2012	.7957127	.0292716	27.18	0.000	.7383413	.853084
LG2	.6489551	.0241536	26.87	0.000	.6016149	.6962953
UC1	-.2114707	.0284388	-7.44	0.000	-.2672098	-.1557316
D_COUPNOCHD	-.2063923	.0356358	-5.79	0.000	-.2762373	-.1365473
D_COUPCHD	-.1713981	.0473594	-3.62	0.000	-.2642209	-.0785753
D_OTHERFAM	-.343226	.0630026	-5.45	0.000	-.4667089	-.2197431
EDAD3645	-.1757726	.0380074	-4.62	0.000	-.2502657	-.1012794
EDAD4655	-.1724464	.0400039	-4.31	0.000	-.2508527	-.0940401
EDAD5665	-.3400193	.0435084	-7.82	0.000	-.4252943	-.2547443
EDAD6575	-.5994854	.0590458	-10.15	0.000	-.7152131	-.4837577
EDADGE76	-.9119578	.0653443	-13.96	0.000	-1.04003	-.7838852
D_OCUPADO	.5466351	.0671433	8.14	0.000	.4150368	.6782335
D_PARADO	.2912618	.0854864	3.41	0.001	.1237115	.4588121
D_RETIRADO	.4482626	.0596771	7.51	0.000	.3312976	.5652277
D_EDUC2	.1631934	.0342108	4.77	0.000	.0961415	.2302452
D_EDUC3	.2734611	.0415766	6.58	0.000	.1919726	.3549497
D_EDUC4	.4570893	.039128	11.68	0.000	.3803999	.5337787
D_DENSI1	.0989427	.0297418	3.33	0.001	.0406499	.1572355
D_DENSI2	.0930523	.0330851	2.81	0.005	.0282068	.1578979
D_CCAA2	-.0658014	.0602669	-1.09	0.275	-.1839225	.0523196
D_CCAA3	-.1068028	.0586244	-1.82	0.068	-.2217045	.008099
D_CCAA4	.3423537	.0565412	6.05	0.000	.2315351	.4531724
D_CCAA5	.0632221	.0585168	1.08	0.280	-.0514688	.177913
D_CCAA6	-.4830815	.0633788	-7.62	0.000	-.6073016	-.3588614
D_CCAA7	-.3130291	.0497595	-6.29	0.000	-.4105043	-.2155023
D_CCAA8	-.474269	.0597887	-7.93	0.000	-.5914528	-.3570853
D_CCAA9	.2045084	.0429735	4.76	0.000	.1202819	.2887348
D_CCAA10	.0201285	.0464577	0.43	0.665	-.0709269	.111184
D_CCAA11	-.4889448	.0790344	-6.19	0.000	-.6438495	-.3340401
D_CCAA12	.0698393	.0488049	1.43	0.152	-.0258165	.1654951
D_CCAA13	.2832024	.0593123	4.77	0.000	.1669525	.3994524
D_CCAA14	-.2643225	.068702	-3.85	0.000	-.3989759	-.1296692
D_CCAA15	-.3572169	.0536275	-6.66	0.000	-.4623249	-.252109
D_CCAA16	.114308	.0449375	2.54	0.011	.0262321	.2023839
D_CCAA17	-.3505091	.0624787	-5.61	0.000	-.472965	-.2280531

TABLE A.4 LOGIT MODEL FOR THE PROBABILITY THAT A HOUSEHOLD REPORTS POSITIVE EXPENDITURES ON RESTAURANT SERVICES (HOUSEHOLDS WITH SMOKERS)

```
Logistic regression                          Number of obs   =      74129
                                             Wald chi2(42)   =   15956.21
Log pseudolikelihood = -28937629             Prob > chi2     =     0.0000
```

D_HOSTEL_A	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
D_ANOENC1	-4.926241	.2383742	-20.67	0.000	-5.393446	-4.459036
D_ANOENC2	-4.740249	.2382062	-19.90	0.000	-5.207125	-4.273374
D_ANOENC3	-4.902072	.2374984	-20.64	0.000	-5.36756	-4.436583
D_ANOENC4	-4.962239	.2368454	-20.95	0.000	-5.426448	-4.498031
D_ANOENC5	-5.033212	.2369522	-21.24	0.000	-5.49763	-4.568794
D_ANOENC6	-4.945865	.2357585	-20.98	0.000	-5.407943	-4.483787
D_ANOENC7	-5.029976	.2361981	-21.30	0.000	-5.492916	-4.567036
LIMPEXAC_2012	.3676901	.0258353	14.23	0.000	.3170538	.4183264
LG2	.4445821	.0243344	18.27	0.000	.3968876	.4922765
UC1	.3675175	.0234913	15.64	0.000	.3214754	.4135596
D_COUPNOCHD	.1462711	.0394789	3.71	0.000	.0688939	.2236483
D_COUPCHD	.0228331	.0405182	0.56	0.573	-.0565811	.1022472
D_OTHERFAM	.147725	.052551	2.81	0.005	.0447269	.2507231
EDAD3645	-.0776058	.0364434	-2.13	0.033	-.1490336	-.006178
EDAD4655	.1475868	.0369295	4.00	0.000	.0752064	.2199672
EDAD5665	.3410895	.0424642	8.03	0.000	.2578611	.4243179
EDAD6575	.5581896	.0596888	9.35	0.000	.4412016	.6751776
EDADGE76	.8087092	.0679106	11.91	0.000	.6756068	.9418115
D_OCUPADO	.0556452	.0642765	0.87	0.387	-.0703344	.1816249
D_PARADO	-.1663528	.07214	-2.31	0.021	-.3077447	-.0249609
D_RETIRADO	-.1387256	.0628793	-2.21	0.027	-.2619667	-.0154845
D_EDUC2	.0348046	.0303311	1.15	0.251	-.0246432	.0942524
D_EDUC3	.1519938	.0385465	3.94	0.000	.076444	.2275436
D_EDUC4	.3376503	.0390847	8.64	0.000	.2610456	.4142549
D_DENSI1	.0581199	.0287752	2.02	0.043	.0017215	.1145183
D_DENSI2	.0639701	.0316272	2.02	0.043	.0019819	.1259582
D_CCAA2	.5452988	.0554936	9.83	0.000	.4365334	.6540641
D_CCAA3	-.2416066	.0562022	-4.30	0.000	-.351761	-.1314523
D_CCAA4	.2182152	.0605002	3.61	0.000	.0996369	.3367934
D_CCAA5	.2023053	.0541812	3.73	0.000	.0961121	.3084985
D_CCAA6	-.2502377	.0593039	-4.22	0.000	-.3664711	-.1340042
D_CCAA7	-.4663576	.0469392	-9.94	0.000	-.5583568	-.3743585
D_CCAA8	-.2548695	.048839	-5.22	0.000	-.3505923	-.1591468
D_CCAA9	.2923479	.0445305	6.57	0.000	.2050698	.379626
D_CCAA10	-.5382467	.0435637	-12.36	0.000	-.6236299	-.4528635
D_CCAA11	.4422995	.0517244	8.55	0.000	.3409216	.5436774
D_CCAA12	-.2905823	.0475693	-6.11	0.000	-.3838165	-.1973482
D_CCAA13	1.443469	.0550928	26.20	0.000	1.335489	1.551449
D_CCAA14	.6732206	.0550891	12.22	0.000	.5652479	.7811934
D_CCAA15	-.215199	.0532079	-4.04	0.000	-.3194847	-.1109134
D_CCAA16	.5954714	.0436622	13.64	0.000	.5098952	.6810477
D_CCAA17	.0048778	.0622704	0.08	0.938	-.1171698	.1269255

TABLE A.5 LOGIT MODEL FOR THE PROBABILITY THAT A HOUSEHOLD REPORTS POSITIVE EXPENDITURES ON BARS AND CAFETERIA SERVICES (HOUSEHOLDS WITHOUT SMOKERS)

```
Logistic regression                          Number of obs   =     71248
                                             Wald chi2(42)   =  13826.83
Log pseudolikelihood =  -27411724            Prob > chi2     =    0.0000
```

D_HOSTEL_B	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
D_ANOENC1	-5.743581	.2316379	-24.80	0.000	-6.197583	-5.289579
D_ANOENC2	-5.730321	.2308272	-24.83	0.000	-6.182734	-5.277908
D_ANOENC3	-5.703604	.2308679	-24.71	0.000	-6.156097	-5.251112
D_ANOENC4	-5.738483	.2295044	-25.00	0.000	-6.188304	-5.288663
D_ANOENC5	-5.704044	.2303069	-24.77	0.000	-6.155437	-5.25265
D_ANOENC6	-5.732272	.2297226	-24.95	0.000	-6.18252	-5.282024
D_ANOENC7	-5.621425	.2293755	-24.51	0.000	-6.070993	-5.171857
LIMPEXAC_2012	.5970127	.0301552	19.80	0.000	.5379097	.6561158
LG2	.6389214	.0239997	26.62	0.000	.5918828	.68596
UC1	.067592	.0341992	1.98	0.048	.0005629	.1346212
D_COUPNOCHD	.2519515	.0361772	6.96	0.000	.1810456	.3228575
D_COUPCHD	.2414447	.0564695	4.28	0.000	.1307665	.3521228
D_OTHERFAM	-.0525232	.0654223	-0.80	0.422	-.1807486	.0757023
EDAD3645	-.0944449	.0510624	-1.85	0.064	-.1945253	.0056355
EDAD4655	-.0519644	.0535206	-0.97	0.332	-.1568628	.052934
EDAD5665	-.2510979	.0542474	-4.63	0.000	-.3574208	-.1447751
EDAD6575	-.6145034	.0650378	-9.45	0.000	-.7419751	-.4870316
EDADGE76	-1.094468	.0666182	-16.43	0.000	-1.225037	-.9638988
D_OCUPADO	.6019007	.0566631	10.62	0.000	.4908431	.7129582
D_PARADO	.4137026	.0723202	5.72	0.000	.2719577	.5554476
D_RETIRADO	.4878714	.0425427	11.47	0.000	.4044892	.5712536
D_EDUC2	.1209155	.031508	3.84	0.000	.059161	.18267
D_EDUC3	.2403464	.0450337	5.34	0.000	.152082	.3286107
D_EDUC4	.3850748	.0438726	8.78	0.000	.2990862	.4710635
D_DENSI1	.0267286	.0312007	0.86	0.392	-.0344237	.0878808
D_DENSI2	-.0247155	.0347182	-0.71	0.477	-.0927619	.0433309
D_CCAA2	-.1416397	.0611773	-2.32	0.021	-.261545	-.0217344
D_CCAA3	-.0541945	.0616025	-0.88	0.379	-.1749331	.0665441
D_CCAA4	-.2790387	.0657018	-4.25	0.000	-.4078119	-.1502656
D_CCAA5	-.4678262	.0628235	-7.45	0.000	-.590958	-.3446944
D_CCAA6	-.5555397	.0630032	-8.82	0.000	-.6790237	-.4320558
D_CCAA7	.0989023	.0495779	1.99	0.046	.0017301	.1960732
D_CCAA8	-.321236	.0572794	-5.61	0.000	-.4335015	-.2089704
D_CCAA9	-.6133959	.0475205	-12.91	0.000	-.7065344	-.5202573
D_CCAA10	-.3531204	.0494991	-7.13	0.000	-.4501369	-.2561039
D_CCAA11	-.1157177	.0654123	-1.77	0.077	-.2439235	.0124881
D_CCAA12	-.007384	.050185	-0.15	0.883	-.1057449	.0909768
D_CCAA13	-.4264981	.0668846	-6.38	0.000	-.5575895	-.2954067
D_CCAA14	-.3738512	.0680272	-5.50	0.000	-.507182	-.2405204
D_CCAA15	-.2070278	.0567772	-3.65	0.000	-.318309	-.0957466
D_CCAA16	.0976288	.0519858	1.88	0.060	-.0042616	.1995191
D_CCAA17	-.0979372	.0686163	-1.43	0.153	-.2324226	.0365482

TABLE A.6 LOGIT MODEL FOR THE PROBABILITY THAT A HOUSEHOLD REPORTS POSITIVE EXPENDITURES ON BARS AND CAFETERIA SERVICES (HOUSEHOLDS WITH SMOKERS)

```
Logistic regression                          Number of obs   =      74129
                                             Wald chi2(42)   =   20287.87
Log pseudolikelihood = -9362759.1            Prob > chi2     =     0.0000
```

D_HOSTEL_B	Coef.	Robust Std. Err.	z	P>|z|	[95% Conf. Interval]	
D_ANOENC1	-4.592901	.4455684	-10.31	0.000	-5.466199	-3.719603
D_ANOENC2	-4.684929	.4460923	-10.50	0.000	-5.559254	-3.810604
D_ANOENC3	-4.540166	.4441908	-10.22	0.000	-5.410764	-3.669568
D_ANOENC4	-4.625906	.441691	-10.47	0.000	-5.491604	-3.760207
D_ANOENC5	-4.617991	.4421233	-10.45	0.000	-5.484537	-3.751446
D_ANOENC6	-4.637019	.4435238	-10.45	0.000	-5.50631	-3.767728
D_ANOENC7	-4.684779	.4422292	-10.59	0.000	-5.551532	-3.818026
LIMPEXAC_2012	.6232123	.052802	11.80	0.000	.5197223	.7267023
LG2	.6386932	.0471544	13.54	0.000	.5462723	.7311142
UC1	.4562794	.0544722	8.38	0.000	.3495158	.5630429
D_COUPNOCHD	.1111622	.0731566	1.52	0.129	-.0322221	.2545465
D_COUPCHD	.0506875	.0851597	0.60	0.552	-.1162225	.2175974
D_OTHERFAM	-.0330694	.0987252	-0.33	0.738	-.2265672	.1604284
EDAD3645	-.077242	.0793352	-0.97	0.330	-.2327361	.0782521
EDAD4655	.0889792	.0829555	1.07	0.283	-.0736106	.251569
EDAD5665	.0120142	.091543	0.13	0.896	-.1674067	.1914351
EDAD6575	.1281389	.1224536	1.05	0.295	-.1118658	.3681436
EDADGE76	.3466814	.1333485	2.60	0.009	.0853231	.6080397
D_OCUPADO	.2414289	.1178779	2.05	0.041	.0103925	.4724653
D_PARADO	-.1274424	.1256447	-1.01	0.310	-.3737015	.1188167
D_RETIRADO	-.0004494	.1067302	-0.00	0.997	-.2096368	.2087379
D_EDUC2	.0384047	.0623238	0.62	0.538	-.0837477	.1605572
D_EDUC3	-.0602501	.0834656	-0.72	0.470	-.2238397	.1033395
D_EDUC4	.1094226	.087182	1.26	0.209	-.061451	.2802962
D_DENSI1	-.0391454	.0608773	-0.64	0.520	-.1584628	.080172
D_DENSI2	-.0811632	.0670084	-1.21	0.226	-.2124972	.0501709
D_CCAA2	.2713739	.1201107	2.26	0.024	.0359612	.5067865
D_CCAA3	.0431046	.1259917	0.34	0.732	-.2038346	.2900437
D_CCAA4	.0546568	.1322176	0.41	0.679	-.2044849	.3137985
D_CCAA5	-.3462058	.0971086	-3.57	0.000	-.5365351	-.1558764
D_CCAA6	-.2327452	.1272816	-1.83	0.067	-.4822125	.0167222
D_CCAA7	.1859654	.1095431	1.70	0.090	-.0287352	.400666
D_CCAA8	-.1824437	.1065544	-1.71	0.087	-.3912865	.026399
D_CCAA9	-.2083557	.0905574	-2.30	0.021	-.385845	-.0308664
D_CCAA10	-.429185	.0901525	-4.76	0.000	-.6058808	-.2524893
D_CCAA11	.2257116	.1055098	2.14	0.032	.0189162	.4325071
D_CCAA12	.061566	.1066859	0.58	0.564	-.1475345	.2706665
D_CCAA13	.5513044	.1118665	4.93	0.000	.3320502	.7705587
D_CCAA14	.2749447	.1192041	2.31	0.021	.041309	.5085805
D_CCAA15	.0600021	.1242528	0.48	0.629	-.183529	.3035331
D_CCAA16	.7325348	.1096228	6.68	0.000	.5176781	.9473915
D_CCAA17	.1746459	.1600412	1.09	0.275	-.1390291	.4883208

TABLE A.7 REGRESSION MODEL FOR LOG EXPENDITURE ON RESTAURANT SERVICES FOR HOUSEHOLDS REPORTING POSITIVE EXPENDITURES ON RESTAURANT SERVICES (HOUSEHOLDS WITHOUT SMOKERS)

```
Linear regression                              Number of obs =    22907
                                               F( 42, 22865) =24705.52
                                               Prob > F      =   0.0000
                                               R-squared     =   0.9803
                                               Root MSE      =   1.0391

------------------------------------------------------------------------------
             |               Robust
LGHOSTEL_A_~2|    Coef.    Std. Err.     t    P>|t|    [95% Conf. Interval]
-------------+----------------------------------------------------------------
    D_ANOENC1|   5.187379   .2024267   25.63   0.000    4.790609    5.584149
    D_ANOENC2|   5.244093    .201487   26.03   0.000    4.849165    5.639021
    D_ANOENC3|   5.122284   .2000154   25.61   0.000     4.73024    5.514328
    D_ANOENC4|    5.11721   .1989374   25.72   0.000    4.727279    5.507141
    D_ANOENC5|   5.055282   .1985574   25.46   0.000    4.666096    5.444468
    D_ANOENC6|   5.068357   .1983821   25.55   0.000    4.679515      5.4572
    D_ANOENC7|   5.008295   .1979454   25.30   0.000    4.620309    5.396282
LIMPEXAC_2012|    .444224   .0223563   19.87   0.000    .4004041     .488044
          LG2|   .1805302   .0197955    9.12   0.000    .1417297    .2193307
          UC1|  -.0756223     .02139   -3.54   0.000   -.1175481   -.0336964
  D_COUPNOCHD|   .0717576   .0279702    2.57   0.010    .0169342    .1265811
    D_COUPCHD|   .0312129   .0349319    0.89   0.372   -.0372559    .0996818
   D_OTHERFAM|  -.0984526   .0532171   -1.85   0.064   -.2027616    .0058565
     EDAD3645|    .076116   .0259328    2.94   0.003     .025286    .1269461
     EDAD4655|   .1033973   .0280466    3.69   0.000    .0484241    .1583706
     EDAD5665|   .1736732    .031414    5.53   0.000    .1120997    .2352467
     EDAD6575|   .1488904   .0454698    3.27   0.001    .0597665    .2380144
     EDADGE76|   .1741127   .0578131    3.01   0.003     .060795    .2874304
    D_OCUPADO|   .2002318   .0581355    3.44   0.001    .0862823    .3141814
     D_PARADO|   .1424677   .0726877    1.96   0.050   -5.14e-06    .2849405
    D_RETIRADO|   .0583229   .0563473    1.04   0.301   -.0521216    .1687674
      D_EDUC2|   .0105989   .0306949    0.35   0.730   -.0495653    .0707631
      D_EDUC3|   .0208043   .0338434    0.61   0.539    -.045531    .0871395
      D_EDUC4|    .016576     .03227    0.51   0.607   -.0466754    .0798274
     D_DENSI1|  -.1097762   .0234496   -4.68   0.000   -.1557389   -.0638134
     D_DENSI2|  -.0350454   .0255439   -1.37   0.170   -.0851132    .0150224
      D_CCAA2|  -.2536433   .0523714   -4.84   0.000   -.3562949   -.1509918
      D_CCAA3|   .1131087    .046061    2.46   0.014    .0228259    .2033914
      D_CCAA4|     .00511     .04238    0.12   0.904   -.0779576    .0881777
      D_CCAA5|   .0227623   .0437218    0.52   0.603   -.0629353    .1084599
      D_CCAA6|   .0171921   .0557536    0.31   0.758   -.0920889     .126473
      D_CCAA7|  -.1567855   .0409783   -3.83   0.000   -.2371057   -.0764653
      D_CCAA8|  -.1088199   .0532051   -2.05   0.041   -.2131056   -.0045343
      D_CCAA9|   .1031648   .0324584    3.18   0.001    .0395441    .1667854
     D_CCAA10|  -.0785176    .035896   -2.19   0.029   -.1488762    -.008159
     D_CCAA11|  -.1498966   .0710173   -2.11   0.035   -.2890952   -.0106979
     D_CCAA12|  -.0136216   .0386198   -0.35   0.724    -.089319    .0620758
     D_CCAA13|   .0063328   .0435653    0.15   0.884   -.0790582    .0917238
     D_CCAA14|  -.1238919   .0609336   -2.03   0.042   -.2433258    -.004458
     D_CCAA15|  -.0364992   .0422962   -0.86   0.388   -.1194025    .0464042
     D_CCAA16|  -.0342264   .0345069   -0.99   0.321   -.1018623    .0334095
     D_CCAA17|   .0694997   .0513606    1.35   0.176   -.0311706    .1701701
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TABLE A.8 REGRESSION MODEL FOR LOG EXPENDITURE ON RESTAURANT SERVICES FOR HOUSEHOLDS REPORTING POSITIVE EXPENDITURES ON RESTAURANT SERVICES (HOUSEHOLDS WITH SMOKERS)

```
Linear regression                          Number of obs =   54925
                                           F( 42, 54883) =25469.62
                                           Prob > F      =  0.0000
                                           R-squared     =  0.9386
                                           Root MSE      =  1.637

             --------------------------------------------------------------------
             |              Robust
LGHOSTEL_A_~2|    Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+------------------------------------------------------------------
   D_ANOENC1 |  2.066913    .201217    10.27   0.000    1.672527     2.4613
   D_ANOENC2 |  1.952746    .201257     9.70   0.000     1.55828    2.347211
   D_ANOENC3 |  1.708397   .2014559     8.48   0.000    1.313542    2.103252
   D_ANOENC4 |  1.579312   .2006321     7.87   0.000    1.186071    1.972552
   D_ANOENC5 |  1.431409   .2010897     7.12   0.000    1.037272    1.825546
   D_ANOENC6 |  1.411152   .2007861     7.03   0.000     1.01761    1.804694
   D_ANOENC7 |  1.321179   .2007892     6.58   0.000    .9276312    1.714728
LIMPEXAC_2012|  .6860972   .0200562    34.21   0.000     .646787    .7254075
         LG2 |  .3601086   .0203867    17.66   0.000    .3201506    .4000665
         UC1 |  .1027872   .0145083     7.08   0.000    .0743509    .1312236
 D_COUPNOCHD | -.1524836   .0347925    -4.38   0.000   -.2206772    -.08429
   D_COUPCHD | -.1042495    .031126    -3.35   0.001   -.1652567   -.0432424
  D_OTHERFAM | -.2328392   .0371101    -6.27   0.000   -.3055753   -.1601031
    EDAD3645 | -.1967427   .0286752    -6.86   0.000   -.2529464   -.140539
    EDAD4655 | -.1399808   .0272201    -5.14   0.000   -.1933324   -.0866293
    EDAD5665 | -.1562479   .0303058    -5.16   0.000   -.2156475   -.0968484
    EDAD6575 | -.4689944   .0450874   -10.40   0.000   -.5573659   -.3806228
   EDADGE76  | -.7760397   .0519837   -14.93   0.000   -.8779281   -.6741512
   D_OCUPADO |  .2558336   .0539508     4.74   0.000    .1500896    .3615776
    D_PARADO | -.0349021   .0639054    -0.55   0.585   -.1601571    .0903529
   D_RETIRADO|  .0070374   .0543584     0.13   0.897   -.0995055    .1135803
     D_EDUC2 |  .0514393   .0237941     2.16   0.031    .0048028    .0980759
     D_EDUC3 |  .0992687   .0275635     3.60   0.000    .0452441    .1532933
     D_EDUC4 |  .2059388   .0271251     7.59   0.000    .1527735    .2591041
    D_DENSI1 |  .0420083   .0239624     1.75   0.080   -.0049582    .0889748
    D_DENSI2 |  .0823168   .0267395     3.08   0.002    .0299072    .1347263
     D_CCAA2 |  .2807649   .0375836     7.47   0.000    .2071009     .354429
     D_CCAA3 |  .3719521   .0569323     6.53   0.000    .2603643    .4835399
     D_CCAA4 |  .6977147   .0474463    14.71   0.000    .6047197    .7907097
     D_CCAA5 |  -.144433   .0529016    -2.73   0.006   -.2481206   -.0407454
     D_CCAA6 | -.7192593    .080006    -8.99   0.000   -.8760717    -.562447
     D_CCAA7 |  .2699699   .0432415     6.24   0.000    .1852163    .3547235
     D_CCAA8 |  .2259446   .0449425     5.03   0.000     .137857    .3140322
     D_CCAA9 |  .7209666   .0347778    20.73   0.000    .6528018    .7891313
    D_CCAA10 |  .6534408   .0367089    17.80   0.000    .5814911    .7253904
    D_CCAA11 | -1.798537   .0616698   -29.16   0.000   -1.919411   -1.677664
    D_CCAA12 |  .5851415   .0424237    13.79   0.000    .5019908    .6682922
    D_CCAA13 |  .7196513   .0310959    23.14   0.000    .6587031    .7805995
    D_CCAA14 | -.9295859   .0587948   -15.81   0.000   -1.044824   -.8143476
    D_CCAA15 |  .0879601   .0523023     1.68   0.093   -.0145527    .190473
    D_CCAA16 |  .6354202   .0322432    19.71   0.000    .5722232    .6986171
    D_CCAA17 |  -.362737   .0770188    -4.71   0.000   -.5136944   -.2117795
             --------------------------------------------------------------------
```

TABLE A.9 REGRESSION MODEL FOR LOG EXPENDITURE ON BARS AND CAFETERIA SERVICES SERVICES FOR HOUSEHOLDS REPORTING POSITIVE EXPENDITURES ON BARS AND CAFETERIA SERVICES (HOUSEHOLDS WITHOUT SMOKERS)

```
Linear regression                              Number of obs =   50266
                                               F( 42, 50224) =41628.63
                                               Prob > F      =  0.0000
                                               R-squared     =  0.9750
                                               Root MSE      =  1.0834
```

	Robust					
LGHOSTEL_B_~2	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
D_ANOENC1	3.486572	.1356658	25.70	0.000	3.220665	3.752478
D_ANOENC2	3.533906	.1354061	26.10	0.000	3.268508	3.799304
D_ANOENC3	3.474263	.1350623	25.72	0.000	3.20954	3.738987
D_ANOENC4	3.493864	.1342922	26.02	0.000	3.230649	3.757078
D_ANOENC5	3.489823	.1342374	26.00	0.000	3.226717	3.75293
D_ANOENC6	3.50282	.1341226	26.12	0.000	3.239938	3.765702
D_ANOENC7	3.481683	.1340446	25.97	0.000	3.218954	3.744412
LIMPEXAC_2012	.3748159	.015788	23.74	0.000	.3438711	.4057606
LG2	.3017586	.0136539	22.10	0.000	.2749968	.3285203
UC1	.1052819	.0161648	6.51	0.000	.0735987	.1369651
D_COUPNOCHD	-.0173141	.0197477	-0.88	0.381	-.0560197	.0213916
D_COUPCHD	-.0378148	.0260781	-1.45	0.147	-.0889282	.0132985
D_OTHERFAM	-.087653	.0358832	-2.44	0.015	-.1579845	-.0173214
EDAD3645	-.102294	.0207982	-4.92	0.000	-.1430587	-.0615293
EDAD4655	.0578304	.0215887	2.68	0.007	.0155163	.1001446
EDAD5665	-.0380113	.0239061	-1.59	0.112	-.0848675	.0088449
EDAD6575	-.2842682	.0319539	-8.90	0.000	-.3468982	-.2216381
EDADGE76	-.4321675	.0352248	-12.27	0.000	-.5012086	-.3631264
D_OCUPADO	.3085103	.0365909	8.43	0.000	.2367916	.3802289
D_PARADO	.083482	.0471448	1.77	0.077	-.0089223	.1758864
D_RETIRADO	.2620052	.0334687	7.83	0.000	.1964061	.3276042
D_EDUC2	.0151282	.0185739	0.81	0.415	-.0212769	.0515333
D_EDUC3	-.0450815	.0226275	-1.99	0.046	-.0894316	-.0007314
D_EDUC4	-.0814514	.0216101	-3.77	0.000	-.1238075	-.0390954
D_DENSI1	.0022411	.0162015	0.14	0.890	-.0295139	.0339962
D_DENSI2	-.0339285	.0183305	-1.85	0.064	-.0698566	.0019995
D_CCAA2	-.3451757	.0327236	-10.55	0.000	-.4093143	-.2810371
D_CCAA3	-.1378753	.0310199	-4.44	0.000	-.1986746	-.077076
D_CCAA4	-.3797564	.0329534	-11.52	0.000	-.4443454	-.3151675
D_CCAA5	-.398461	.0335084	-11.89	0.000	-.4641378	-.3327842
D_CCAA6	-.1666899	.0333251	-5.00	0.000	-.2320073	-.1013724
D_CCAA7	-.1906059	.0254062	-7.50	0.000	-.2404024	-.1408094
D_CCAA8	-.2061462	.0337887	-6.10	0.000	-.2723725	-.1399199
D_CCAA9	-.4957559	.0238897	-20.75	0.000	-.54258	-.4489319
D_CCAA10	-.1479191	.0248308	-5.96	0.000	-.1965877	-.0992504
D_CCAA11	-.0392801	.0380336	-1.03	0.302	-.1138264	.0352662
D_CCAA12	-.3889911	.0259721	-14.98	0.000	-.4398967	-.3380854
D_CCAA13	-.4306844	.0330358	-13.04	0.000	-.4954351	-.3659338
D_CCAA14	-.1862192	.0383846	-4.85	0.000	-.2614535	-.1109849
D_CCAA15	-.0998975	.0289645	-3.45	0.001	-.1566683	-.0431267
D_CCAA16	-.1768484	.0241932	-7.31	0.000	-.2242673	-.1294294
D_CCAA17	-.1519378	.0313667	-4.84	0.000	-.2134169	-.0904586

TABLE A.10 REGRESSION MODEL FOR LOG EXPENDITURE ON BARS AND CAFETERIA SERVICES SERVICES FOR HOUSEHOLDS REPORTING POSITIVE EXPENDITURES ON BARS AND CAFETERIA SERVICES (HOUSEHOLDS WITH SMOKERS)

```
Linear regression                          Number of obs =    71057
                                           F( 42, 71015) =93746.94
                                           Prob > F      =   0.0000
                                           R-squared     =   0.9795
                                           Root MSE      =   1.0358
```

LGHOSTEL_B_~2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf. Interval]	
D_ANOENC1	3.290247	.1204033	27.33	0.000	3.054256	3.526237
D_ANOENC2	3.259483	.1200316	27.16	0.000	3.024222	3.494745
D_ANOENC3	3.210409	.1202443	26.70	0.000	2.97473	3.446087
D_ANOENC4	3.163601	.1198291	26.40	0.000	2.928737	3.398466
D_ANOENC5	3.105626	.119885	25.91	0.000	2.870652	3.3406
D_ANOENC6	3.057152	.1195461	25.57	0.000	2.822842	3.291462
D_ANOENC7	3.041074	.1194231	25.46	0.000	2.807005	3.275143
LIMPEXAC_2012	.4282047	.0120133	35.64	0.000	.4046587	.4517508
LG2	.3202702	.011904	26.90	0.000	.2969383	.3436021
UC1	.2393479	.0088354	27.09	0.000	.2220306	.2566652
D_COUPNOCHD	−.0892762	.0199899	−4.47	0.000	−.1284563	−.050096
D_COUPCHD	−.0605675	.0176741	−3.43	0.001	−.0952087	−.0259263
D_OTHERFAM	−.1155495	.0225695	−5.12	0.000	−.1597858	−.0713133
EDAD3645	−.1268153	.0158404	−8.01	0.000	−.1578626	−.0957681
EDAD4655	.0091415	.0156379	0.58	0.559	−.0215087	.0397916
EDAD5665	−.0174468	.0175558	−0.99	0.320	−.0518562	.0169626
EDAD6575	−.2823162	.0270157	−10.45	0.000	−.3352668	−.2293655
EDADGE76	−.541969	.0332024	−16.32	0.000	−.6070457	−.4768923
D_OCUPADO	.2670669	.0352204	7.58	0.000	.198035	.3360987
D_PARADO	.148464	.0396481	3.74	0.000	.0707538	.2261743
D_RETIRADO	.1658352	.0358207	4.63	0.000	.0956267	.2360438
D_EDUC2	.024756	.013781	1.80	0.072	−.0022548	.0517668
D_EDUC3	−.0115306	.0159426	−0.72	0.470	−.042778	.0197168
D_EDUC4	−.0031871	.0155277	−0.21	0.837	−.0336214	.0272472
D_DENSI1	.0108	.0131811	0.82	0.413	−.015035	.0366349
D_DENSI2	−.0394549	.014476	−2.73	0.006	−.0678278	−.011082
D_CCAA2	−.0550921	.0208586	−2.64	0.008	−.0959749	−.0142092
D_CCAA3	.0169907	.0272729	0.62	0.533	−.0364641	.0704456
D_CCAA4	−.1652027	.0272656	−6.06	0.000	−.2186432	−.1117622
D_CCAA5	−.4702803	.0298333	−15.76	0.000	−.5287534	−.4118072
D_CCAA6	−.3373155	.0398771	−8.46	0.000	−.4154745	−.2591566
D_CCAA7	.1023924	.021272	4.81	0.000	.0606993	.1440855
D_CCAA8	.0058453	.0226556	0.26	0.796	−.0385597	.0502503
D_CCAA9	−.3981703	.0196243	−20.29	0.000	−.4366339	−.3597067
D_CCAA10	−.0006432	.0207708	−0.03	0.975	−.0413538	.0400675
D_CCAA11	−.3797393	.0316592	−11.99	0.000	−.4417913	−.3176872
D_CCAA12	−.1618751	.0221629	−7.30	0.000	−.2053143	−.1184359
D_CCAA13	−.2437639	.0172006	−14.17	0.000	−.2774771	−.2100508
D_CCAA14	−.3670118	.0311758	−11.77	0.000	−.4281163	−.3059073
D_CCAA15	−.0021111	.0265753	−0.08	0.937	−.0541986	.0499763
D_CCAA16	.0926327	.017309	5.35	0.000	.0587071	.1265583
D_CCAA17	−.1388118	.0341948	−4.06	0.000	−.2058336	−.07179