PN-ACT-499

EAST-WEST CENTER WORKING PAPERS

EAST-WEST CENTER

Population Series

No. 103, September 1998

The Determinants of Smoking and Drinking among Filipino Youth

Gerard Russo, Lita Domingo, and Midea Kabamalan

Gerard Russo is a Fellow with the Program on Population, East-West Center, and an Associate Professor of Economics at the University of Hawaii-Manoa. Before she passed away, **Lita Domingo** was a Professor with the University of the Philippines Population Institute. **Midea Kabamalan** is a doctoral student in the Department of Sociology, University of Hawaii-Manoa. This Working Paper is dedicated to Dr. Domingo's memory.

East-West Center Working Papers: Population Series are an unreviewed and unedited prepublication series reporting on research in progress. Please direct orders and requests to the East-West Center's Publication Sales Office. The price for Working Papers is $3.00 each plus postage. For surface mail, add $3.00 for the first title plus $0.75 for each additional title or copy sent in the same shipment. For airmail within the U.S. and its territories, add $4.00 for the first title plus $0.75 for each additional title or copy in the same shipment. For airmail elsewhere, add $7.00 for the first title plus $4.00 for each additional title or copy in the same shipment. Readers in developing countries may request single copies on a complimentary basis.

Established in 1969 as a unit of the East-West Center, the **Program on Population** conducts research and offers professional education focusing on population issues, with emphasis on the analysis of demographic and human-resource trends, their social and economic causes and consequences, and their policy implicarions in Asia, the Pacific, and the United States.

The Office of Population of the United States Agency for International Development (USAID) provided support for this publication under a cooperative agreement with the Program on Population of the East-West Center.

A

ABSTRACT

Using data from the 1994 Young Adult Fertility Survey (YAFS-II), we analyze cigarette smoking, and alcohol beverage consumption by young adults aged 15-24 years in the Philippines. We specify the probability that a youth will smoke or drink as functions of the individuals' age, sex, education, marital status and religion while controlling for region and urbanity of household residence. Other family and household characteristics, including father's educational attainment and mother's educational attainment, were found to be statistically insignificant and are excluded from the analysis. We use probit analysis to estimate these relations. Because the estimated effects and probabilities are nonlinear functions of the independent variables involving all the parameters of the model, we compute the approximate standard errors using a first-order Taylor series. Our results indicate socioeconomic and demographic differences in these behaviors.

In particular, statistically significant probability estimates indicate that smoking is negatively related to education, where smoking is defined as smoking regularly or occasionally. Among males aged 20-24, college graduates are approximately half as likely to smoke as individuals in the three lowest educational attainment categories — some high school (0.70 vs. 0.37), elementary graduates (0.70 vs. 0.37), and some elementary school or less (0.66 vs. 0.37) — *ceteris paribus*. The self-reported smoking prevalence among males is roughly ten to twelve times greater than the smoking rates of females. Nevertheless, among females aged 20-24, education still exhibits a negative impact on smoking prevalence with the most highly educated women smoking at approximately half the rate of females with only a elementary education (0.06 vs. 0.03) or with some high school (0.06 vs. 0.03).

Drinking, particularly occasional drinking, is a more common behavior and more uniform across levels of educational attainment. Consequently, the results tend to be insignificant. However, regular drinking exhibits a negative relation with education among males aged 20-24. Those who have attained a college or advanced degree are roughly one-third to one-fourth as likely to drink regularly as individuals with some college (0.11 vs. 0.04), high school graduates (0.12 vs. 0.04), some high school (0.18 vs. 0.04), elementary graduates (0.12 vs. 0.04), and some elementary education or less (0.16 vs. 0.04).

Self-reported smoking among males surveyed increases rapidly with age. Among male respondents aged 15 years only 2.7% report regular smoking while the regular-smoking prevalence among males aged 24 years is 38.4%. Self-reported regular smoking among females is considerably less with 0.0% smoking regularly at age 15 rising to 2.5% by age 24. If the smoking behavior of this male cohort is sustained, the Philippines can expect high mortality and morbidity for this segment of the male population when these individuals reach middle-age. While 81.0% of males aged 24 years drink at least occasionally only 14.2% do so regularly. Overall, the survey results indicate that smoking and drinking, particularly on a regular basis, is not a common risk behavior among females.

B

INTRODUCTION

Tobacco consumption is rising in many developing countries. Adult per capita consumption per year in the Philippines is expected to rise from 1.4 kilograms in 1990 to 1.6 kilograms in the year 2000 (World Bank 1993, p. 204). This contrasts with falling consumption in developed countries and stable consumption in the former socialist economies. New smokers and the resultant increased consumption will come from the young adult population. The Philippines 1994 Young Adult Fertility Survey (YAFS-II) provides information on the smoking behavior, as well drinking behavior, of young adults aged 15 to 24 years in 1994. We analyze these data with a view to identifying which groups are at greatest risk for smoking and drinking and which factors determine these risk behaviors.

Our analysis is based on a survey questions which are phrased, "Do you currently smoke?" and "Do you currently drink?" The questionnaire allows for three possible responses (i) "Yes, regularly," (ii) "Yes, occasionally," and (iii) "No." We choose to define smoking and drinking as any "yes" response. However , because regular smoking, and perhaps regular drinking, pose the greater risk of ultimate addiction and adverse health consequences, we also analyze these behaviors under this alternative definition.

We find, not surprisingly, that smoking and drinking increase dramatically between ages 15 and 24 and that males smoke and drink much more than females. In fact, among female respondents almost none admit to being regular smokers or drinkers. We also find that educational attainment is negatively related to smoking and, to a lesser extent, drinking. Whether this education effect is due to knowledge about the health consequences of smoking, socioeconomic class differences or simply a difference in responses rather than actual behavior is unclear. What is clear, however, is that self-reported smoking is twice as high for the lower educated than the higher educated for both males and females, other things held constant.

DATA

The YAFS-II Survey contains information on 10,879 eligible respondents aged 15-24 years. After screening this sample for missing data we analyze 10,671 observations, which includes 5124 males and 5547 females. Table 1 compares the smoking prevalence tabulated from these data with similar

data on Thailand for 1993. These data exhibit a similar age-sex pattern in the percentage of smokers and non-smokers. However, the distribution of smokers among regular and occasional smokers is quite different. For example, the percentage of males aged 20-24 years reporting that they smoke regularly is 29.73% for the Philippines in 1994 compared to 47.36% for Thailand in 1993 while occasional smokers account for 28.34% of males aged 20-24 years in the Philippines and only 6.46% of males aged 20-24 years in Thailand (see Figures 1 and 2). These differences may be due to the ambiguity in the meaning of "regularly" and "occasionally", linguistic differences within and between the two countries, and resultant differences in interpretation by the respondents. Nevertheless, the total percentage of smokers among males aged 20-24 years is quite similar in the two countries with a smoking prevalence rates of 58.07% and 53.82%, respectively, for the Philippines and Thailand.

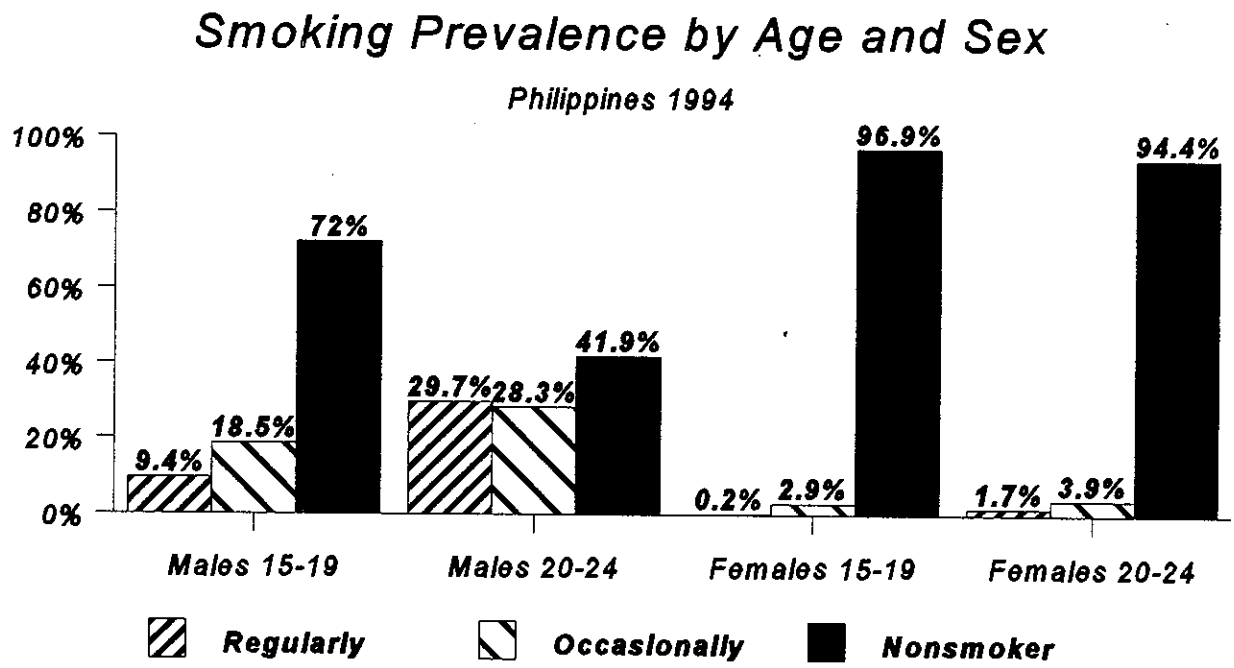

Figure 1 Source: YAFS—II

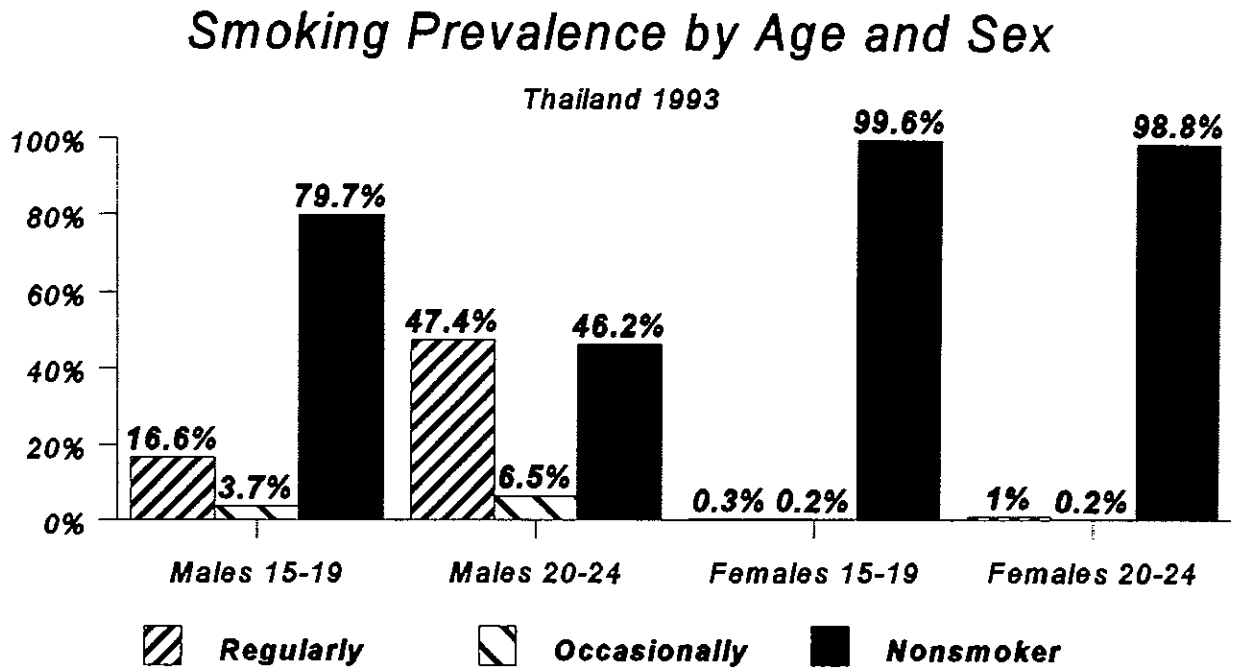

Figure 2 Source: Survey of Cigarette Smoking Behavior 1993.

In the Philippines, males report smoking and drinking at much higher rates than females (see Tables 1-6). Drinking is, however, more common for both males and females with over 80% of males aged 20-24 and nearly 21% of females aged 20-24 reporting at least occasional drinking. However, regular drinking is quite rare for females (see Table 2 and Figure 3). Because age-sex differences are quite pronounced, we conduct multivariate analyses on a four-way split sample with separate estimates for males aged 15-19 years, males aged 20-24 years, females aged 15-19 years, and females aged 20-24 years.

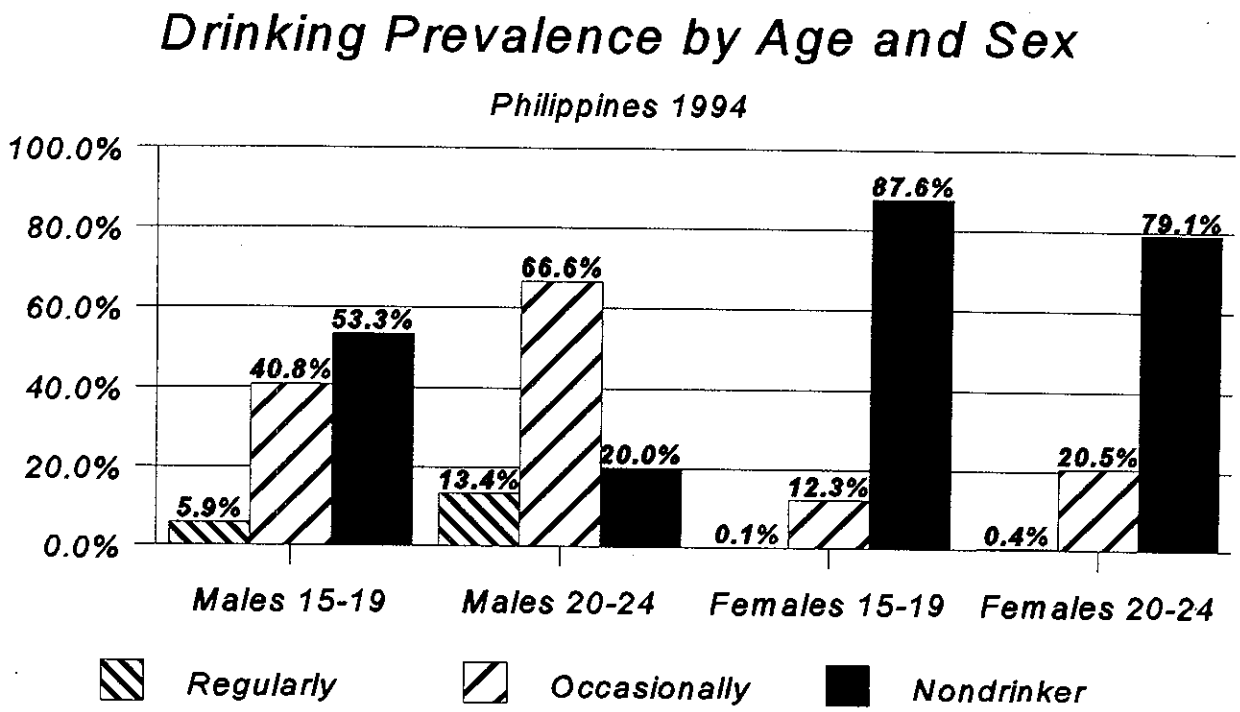

Figure 3 Source: YAFS-II

EMPIRICAL MODEL

The model implemented here is the standard Probit model (Amemiya 1985, 1982; Maddala, 1984; Greene 1993). We follow the literature on qualitative response models and assume an underlying response variable, y'_{ji}, is the difference in the utility generated by the two alternatives. For example, if the individuals' utility of smoking is greater than the utility associated with not smoking, then y'_{ji} is greater than zero and the choice indicator, y_{ji}, equals one. We further assume this difference, y'_{ji}, is a linear function of the exogenous variables plus a random error term.

Given this basic structure, we postulate that the probability that individual i will engage in a particular activity j (e.g., smoke or drink) is as follows:

$$Prob(y_{ji} = 1) = \Phi\left(\alpha_j + \beta_{j1} AGE_i + \beta_{j2}[AGE_i]^2 + \sum_{k=1}^{K} \gamma_{jk} EDUC_{ik} + \delta_j \bullet z_i \right)$$

where Φ is the standard normal cumulative distribution function, AGE_i is the age in years of individual i, $EDUC_{ik}$ is a zero-one indicator (dummy) variable for the educational attainment individual i in educational level k (e.g., high school graduate), and z is a vector of additional demographic and geographic variables including marital status, religion, urbanity and region.

The parameter estimates are obtained by maximum likelihood estimation using the 7.0 version of William Greene's LIMDEP™ software package (Greene 1995). Only the standardized coefficients are identified in the Probit model. Tables A1-A13 contain complete results of the estimations and are included in an appendix.

RESULTS

To facilitate exposition of the results we prepared a series of summary tables reporting predicted probabilities and the results of related hypotheses tests. This is particularly useful in that the individual probit coefficients only provide a qualitative indication of the estimated effects of the associated explanatory variables. To illustrate the effects quantitatively we compute predicted probabilities using the above equation. We evaluated this formula with the estimated probit coefficients for a respective equation (e.g., regular or occasional smoking for males aged 15-19, Table A1) and various values of the independent variables to generate a predicted probability for a hypothetical individual with given characteristics. We computed approximate standard errors by use of a first-order Taylor series (Amemiya 1985, p. 145; Greene 1993, pp. 218-222).

In the case of the dichotomous variables, we are interested in a procedure which generates a computed effect which is comparable to dummy variable coefficients in linear models. Due to the non-linearity of a distribution function, however, simple direct interpretation and statistical inference of dummy variable coefficients in the probit model will not render comparable effects. Instead we compute the differences in conditional predicted probabilities. For example, by setting the value of the dichotomous variable URBAN to the value 1 and by setting the values of the other explanatory variables to their respective means we compute the predicted probability that an urban male individual of mean age within 15-19 and with sample mean characteristics will smoke (see Table 33).

Following a similar procedure, with the URBAN variable set to 0, will generate the predicted probability that a rural individual with sample mean characteristics will smoke (see Table 33). The difference between the predicted probabilities is the effect of urbanity on smoking. This is an effect which is comparable in interpretation to dummy variable coefficients in linear models. We also test whether this difference is statistically significant.

AGE-SEX DIFFERENCES

Tabulated from the basic survey data, we can see from Figure 4 that there marked differences in smoking between males and females. It is also evident that smoking increases rapidly between the ages of 15 and 24 with smoking rates at age 24 roughly 5-6 times higher than age 15. Smoking among males increases from 12.7% at age 15 to 62.8% at age 24. For females the increase in smoking between ages 15 and 24 is from 1.1% to 6.1%. Again, this definition of smoking is based on any "yes" response. We fit these data with the above mentioned probit model estimated separately for males and females and split between ages 15-19 and 20-24.

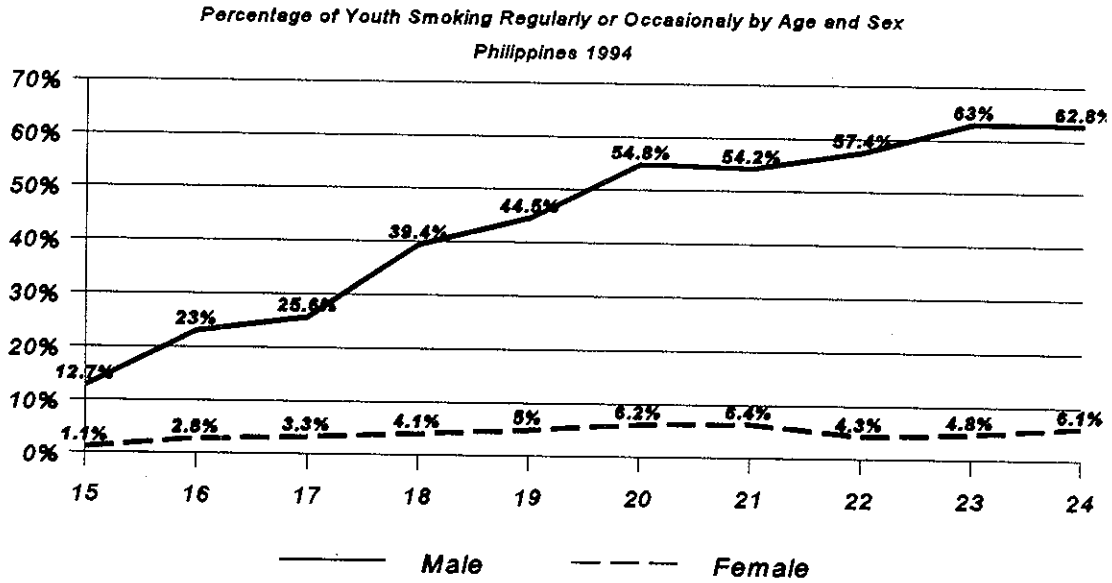

Figure 4 Source: YAFS-II

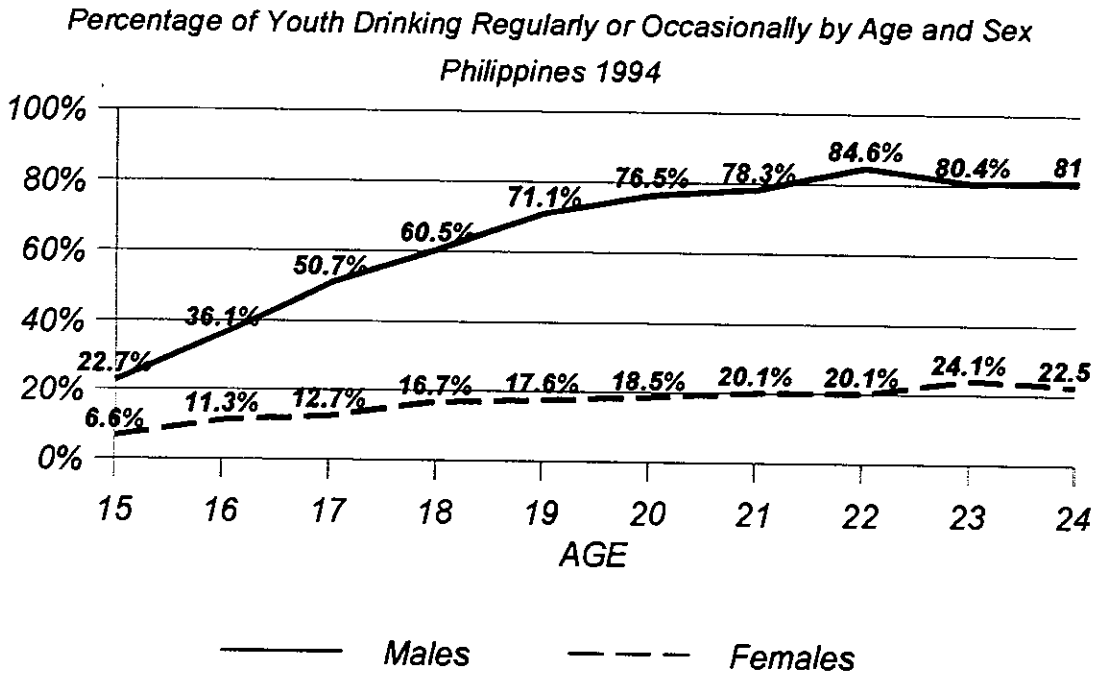

Figure 5 Source: YAFS-II

Drinking also rises rapidly between the ages of 15 and 24. Most of the increase in drinking behavior occurs by age 21. Drinking rates increase by approximately four-fold for males and three-fold for females between ages of 15 and 21 years. By age 24, 81 percent of males drink at least occasionally while only 22.5 percent of females report that they do so. However, regular drinking is quite rare among young adults in the Philippines especially among females. Less than 1% of females report that they drink regularly (see Table 6). Regular drinking for males increases from 1% at age 15 to approximately 15% by the earlier twenties (see Table 6).

THE IMPACT OF EDUCATION

Based on the frequencies of survey responses we defined seven categories for highest educational level completed: (i) "none or some elementary"; (ii) "elementary graduate"; (iii) "some high school"; (iv) "high school graduate"; (v) "some college"; (vi) "vocational"; (vii) "college graduate or above."

There are too few responses to analyze individuals with no education or advanced degrees separately. Therefore, these observations are grouped with individuals in the next closest categories, "some elementary" and "college graduate" respectively. Dummy variables are defined for six of the seven categories with individuals with no education or some elementary education treated as the omitted group for purposes of the regression analysis.

These data present a difficulty in analysis in that many respondents have yet to complete their desired educational level. This is particularly true for the younger respondents. To partially control for any bias this may generate, we include a dummy variable for current educational status which equals 1 if the respondent is currently enrolled in school and 0 otherwise.

The education effects are most striking for males aged 20-24 years. The age category 20-24 gives a clearer picture of the educational effects because most of the respondents have completed their education, while this is less so for those aged 15-19 years. Males aged 20-24 years who have attained a college degree or better are approximately half as likely to smoke as males aged 20-24 in the three lowest educational attainment categories — none or some elementary, elementary graduate, and some high school — with estimated probabilities of smoking equal to 0.37 vs. 0.66, 0.70 and 0.70, respectively (see Table 7 and Figure 6). The differences between the estimated probabilities for the highest and three lowest categories (0.29, 0.33 and 0.33) are significantly different from zero at .01 level (See table 12). Males aged 20-24 years who have attained a college degree or better are also less likely to smoke as males aged 20-24 in the next three educational attainment categories — vocational, some college, and high school graduate — with estimated probabilities of smoking equal to 0.37 vs. 0.50, 0.51 and 0.56, respectively (see Table 7 and Figure 6). The differences here also statistically significant.

Pair-wise hypotheses tests imply that there is no significant difference between the smoking probabilities for male individuals within the educational attainment categories of some high school, elementary graduate and none or some elementary education. In other words, the predicted probabilities for these groups 0.70, 0.70 and 0.66 respectively, are indistinguishable with these data. Likewise, pair-wise tests indicate no significant differences between the predicted probabilities within the next three educational attainment categories — vocational education, some college and high

school graduate. That is, the predicted probabilities 0.5, 0.51, 0.56, are not significantly different from each other (see Table 12). However, the differences between any pair 0.70, 0.70, 0.66 vs. 0.5, 051, 056 are significant.

To summarize, males age 20-24 years with a college degree or higher smoke significant less than males in any other educational category. The six other educational categories can be grouped in two sets of three with those attaining vocational school, some college or a high diploma smoking significantly less than males aged 20-24 years attaining some high school or less in education.

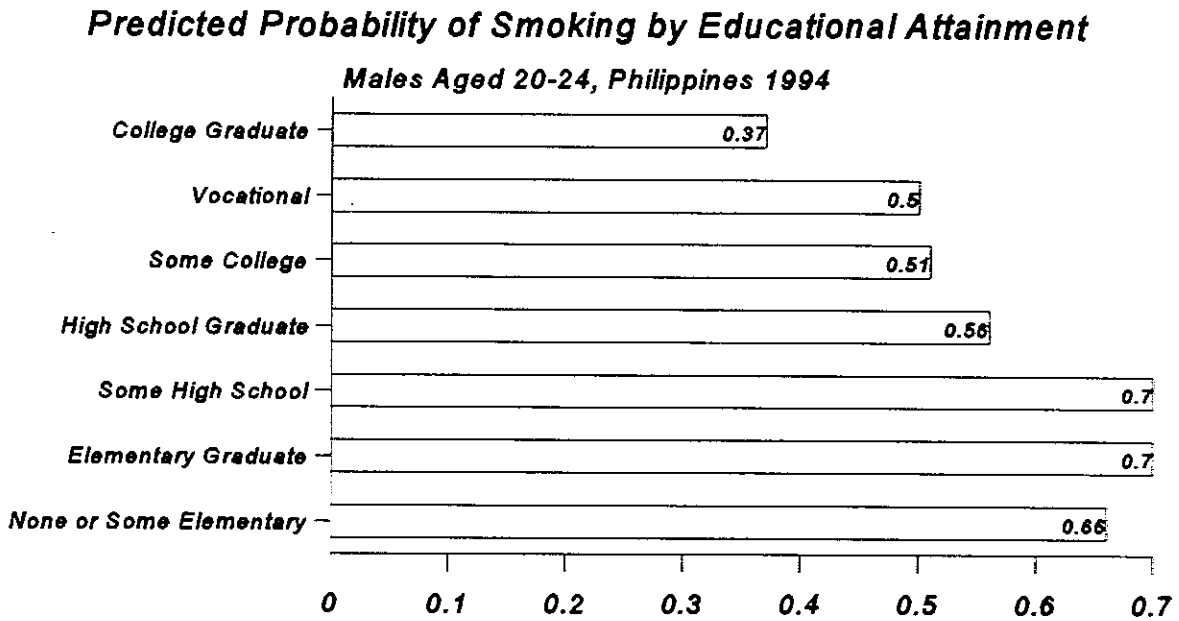

Figure 6 Smoking is defined as smoking regularly or occasionally

If we define smoking as smoking regularly only, we find a predicted probability of smoking equal to 0.15 for males aged 20-24 with a college degree or better, while the comparable probabilities are 0.35, 0.37, and 0.38 for those with none or some elementary education, elementary degree and some high school education, respectively (see Table 8 and Figure 7). Separate tests of the differences in probabilities between these same educational categories find statistically significant differences between the highest educational level and the three lowest education categories (see Tables 12 and 16). Via pair-wise comparison we find no significant differences between the smoking probabilities for males aged 20-24 with vocational training, some college, and high school diplomas with predicted smoking probabilities of 0.22, 0.23, and 0.25, respectively. Likewise, we find no significant differences between the smoking probabilities for males aged 20-24 with none or some elementary education, elementary degree and some high school education, with predicted smoking probabilities of 0.35, 0.37, and 0.38, respectively.

The effects of education on regular smoking for males aged 20-24 can be summarized as follows. There are three groups which can inferred — Group 1: college graduates; Group 2: vocational training, some college, and high school graduates; and Group 3: none or some elementary education, elementary degree and some high school education. Between these groups there are statistically significant differences. Moreover, the probability of smoking monotonically decreases as education attainment increases.

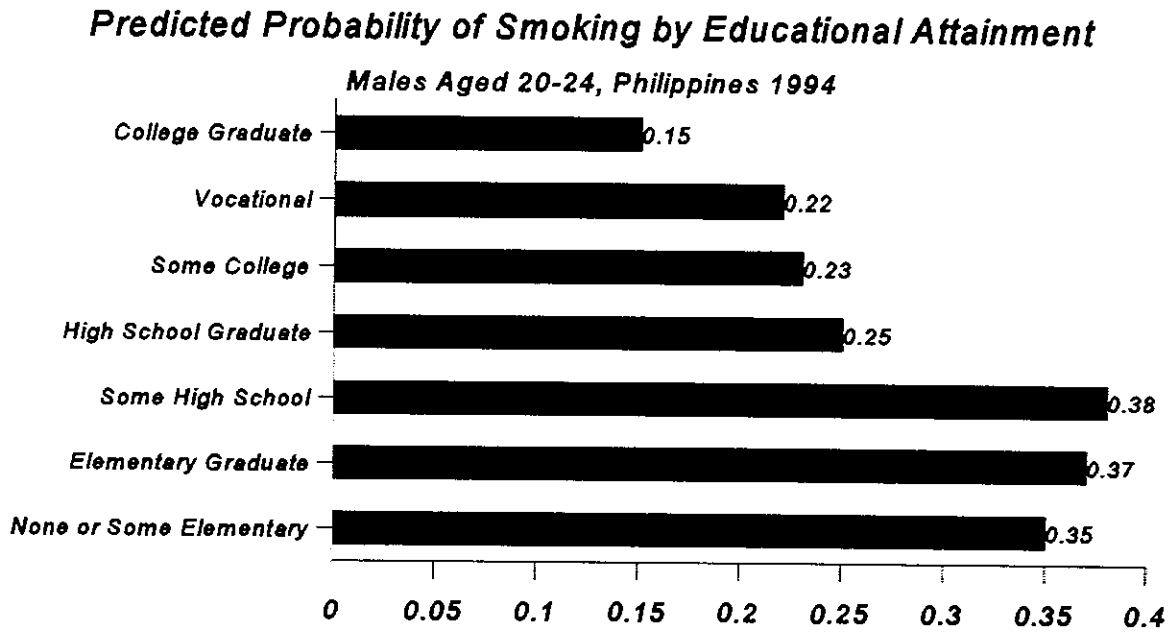

Figure 7 Smoking is defined as smoking regularly.

MARITAL STATUS

Controlling for age, sex and education, ever married individuals seem to smoke more than never married youth. The difference, however, is statistically insignificant except in the case of women aged 20-24. Among women aged 20-24, the probability of being a smoker (either occasionally or regularly) is more than double for ever married women (0.072 vs. 0.031). The difference (0.041) is significantly different from zero at the 0.01 level.

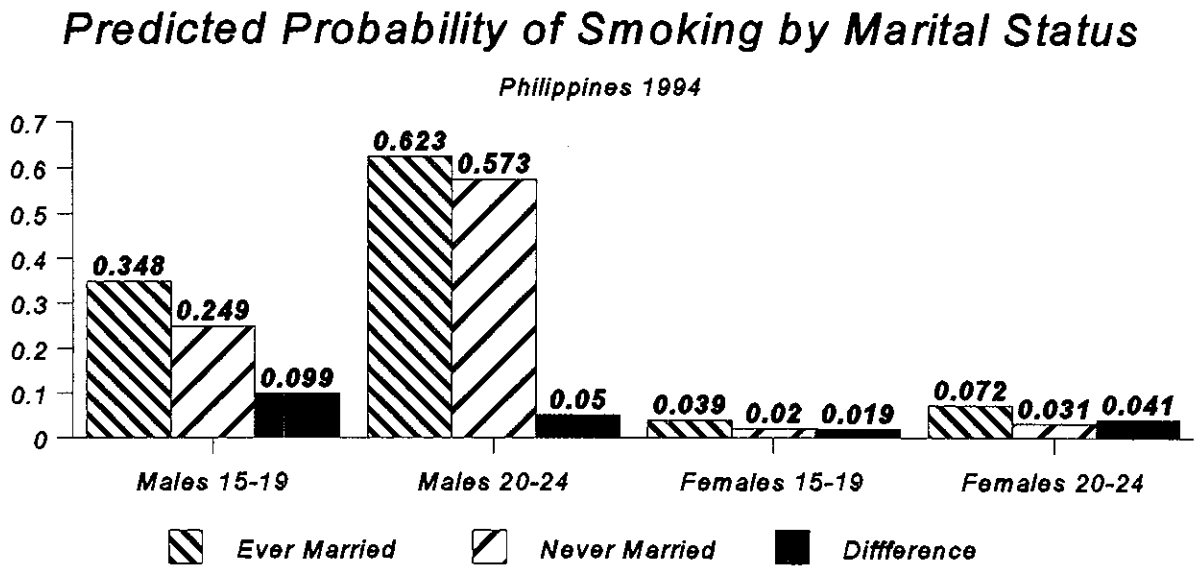

Figure 8

While ever married women aged 20-24 smoke significantly more than never married women, never married women aged 20-24 drink significantly more than ever married women. Other things held constant, the predicted probability that a never married women aged 20-24 will drink regularly or occasionally equals 0.225 vs. 0.167 for ever married women of the same age. The difference in predicted probabilities, 0.058, is significant at the 0.01 level.

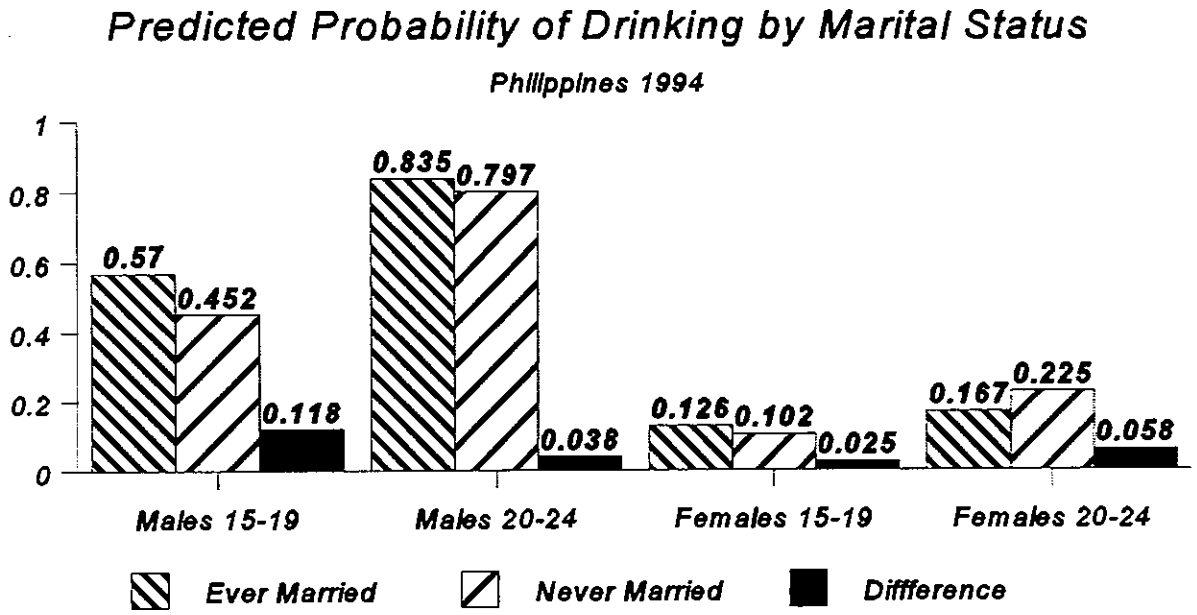

Figure 9

RELIGION

Catholics are more likely to report that they smoke regularly or occasionally than non-Catholics. The difference between predicted probabilities for Catholics and Non-Catholics is statistically significant for all age-sex groups (See Table 30 and Figure 10).

The differences in drinking behavior by religion are large and highly significant with Catholics much more likely to drink. Male Catholics probability of drinking is 0.15 more than that for male non-Catholics (see Table 32 and Figure 11). The difference between female Catholics and non-Catholics in probability of drinking is 0.06 (see Table 32 and Figure 11).

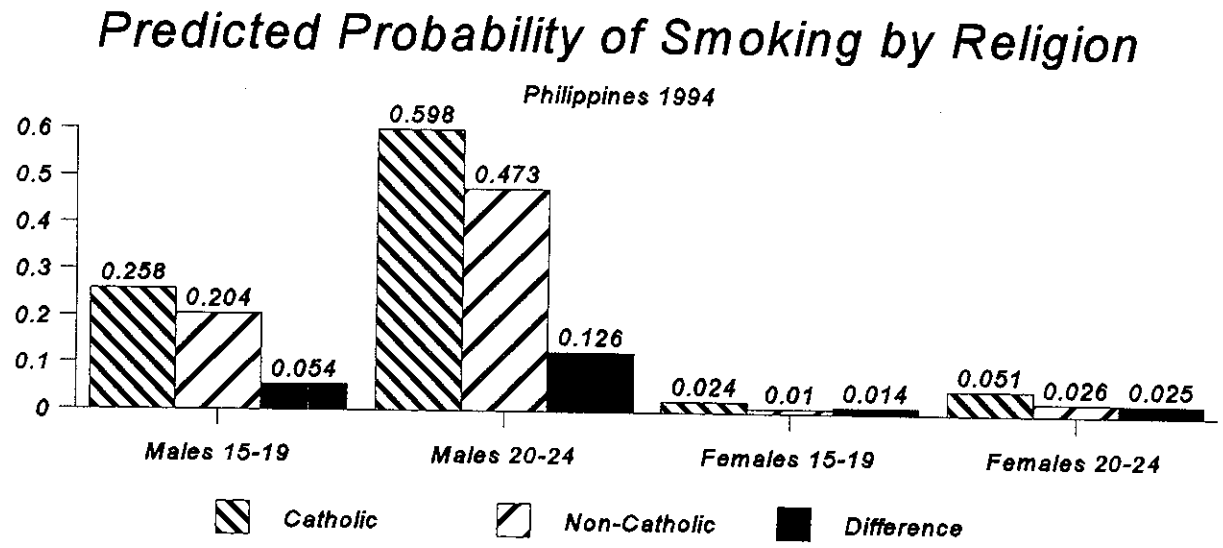

Figure 10

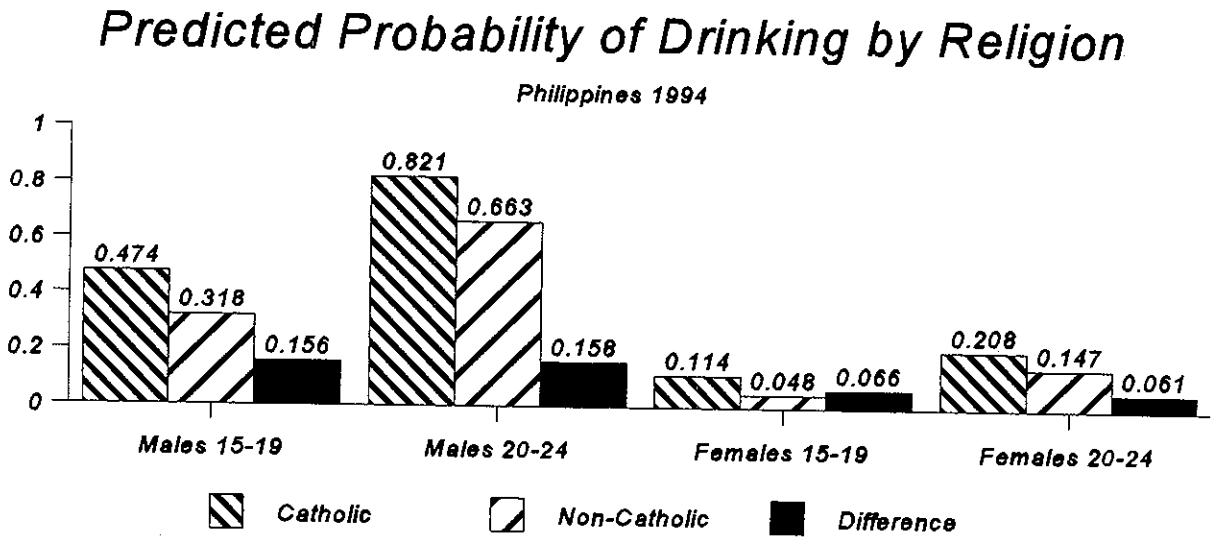

Figure 11

SUMMARY AND CONCLUSION

Smoking represents a significant health risk for young adult males in the Philippines. By age 24 more than 60% of males smoke at least occasionally. Among females smoking is a rarity with only 6% smoking by age 24. Self-reported smoking among males surveyed increases rapidly with age. Among male respondents aged 15 years only 2.7% report regular smoking while the regular-smoking prevalence among males aged 24 years is 38.4%. Self-reported regular smoking among females is considerably less with 0.0% smoking regularly at age 15 rising to 2.5% by age 24. If the smoking behavior of this male cohort is sustained, the Philippines can expect high mortality and morbidity for this segment of the male population when these individuals reach middle-age.

Smoking varies dramatically with education with the most educated smoking least. These education effects are most striking for males aged 20-24 years. The age category 20-24 gives a clearer picture of the educational effects because most of the respondents have completed their education, while this is less so for those aged 15-19 years. Males aged 20-24 years who have attained a college degree or better are approximately half as likely to smoke as males aged 20-24 in the three lowest educational attainment categories — none or some elementary, elementary graduate, and some high school — with estimated probabilities of smoking equal to 0.37 vs. 0.66, 0.70 and 0.70, respectively. The differences between the estimated probabilities for the highest and three lowest categories (0.29, 0.33 and 0.33) are significantly different from zero at .01 level. Males aged 20-24 years who have attained a college degree or better are also less likely to smoke as males aged 20-24 in the next three educational attainment categories — vocational, some college, and high school graduate — with estimated probabilities of smoking equal to 0.37 vs. 0.50, 0.51 and 0.56, respectively.

Drinking, particularly occasional drinking, is a more common behavior and more uniform across levels of educational attainment. While 81.0% of males aged 24 years drink at least occasionally only 14.2% do so regularly. Overall, the survey results indicate that smoking and drinking, particularly on a regular basis, is not a common risk behavior among females.

TABLE 1: Smoking Prevalence by Age and Sex: Philippines 1994 and Thailand 1993

	Philippines 1994				Thailand 1993			
	Males		Females		Males		Females	
Current Smoking Behavior	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Regularly	9.44%	29.73%	0.22%	1.70%	16.55%	47.36%	0.26%	0.97%
Occasionally	18.52%	28.34%	2.86%	3.91%	3.73%	6.46%	0.15%	0.18%
Non-Smoker	72.04%	41.93%	96.90%	94.39%	79.72%	46.17%	99.58%	98.84%

SOURCES: Thailand, *Report on the Survey of Cigarette Smoking Behavior 1993*, (Bangkok, Thailand: National Statistical Office). Philippines, YAFS-II.

TABLE 2: Drinking Prevalence by Age and Sex: Philippines 1994

	Males		Females	
Current Drinking Behavior	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Regularly	5.88%	13.41%	0.12%	0.43%
Occasionally	40.82%	66.64%	12.32%	20.50%
Non-Drinker	53.30%	19.95%	87.56%	79.07%

TABLE 3: Smoking Prevalence by Age and Sex: Actual and Predicted.[†, ‡]

	MALES		FEMALES	
AGE	Actual	Predicted	Actual	Predicted
15	12.7%	11.3% (1.2%)	1.1%	0.9% (0.3%)
16	23.0%	19.3% (1.0%)	2.8%	1.8% (0.3%)
17	25.6%	28.0% (1.4%)	3.3%	2.8% (0.5%)
18	39.4%	36.3% (1.4%)	4.1%	3.6% (0.6%)
19	44.5%	43.1% (2.3%)	5.0%	3.8% (0.9%)
20	54.8%	56.2% (2.4%)	6.2%	6.0% (1.1%)
21	54.2%	57.1% (1.5%)	6.4%	4.7% (0.6%)
22	57.4%	58.3% (1.7%)	4.3%	4.1% (0.7%)
23	63.0%	59.8% (1.6%)	4.8%	4.0% (0.6%)
24	62.8%	61.6% (2.5%)	6.1%	4.3% (1.0%)

NOTES: [†]Smoking is defined as reported smoking regularly or occasionally.
[‡]Approximate standard errors reported in parentheses.

TABLE 4: Smoking Prevalence by Age and Sex: Actual and Predicted. [†,‡]

	MALES		FEMALES	
AGE	Actual	Predicted	Actual	Predicted
15	2.7%	1.8% (0.5%)	0.0%	—
16	5.7%	4.1% (0.5%)	0.0%	—
17	7.6%	7.1% (0.8%)	0.1%	—
18	16.6%	10.5% (1.0%)	0.3%	—
19	17.2%	13.2% (1.6%)	0.7%	—
20	19.4%	20.7% (2.0%)	1.7%	1.5% (0.5%)
21	29.5%	26.2% (1.3%)	1.8%	1.0% (0.3%)
22	29.3%	30.1% (1.6%)	0.6%	0.9% (0.3%)
23	33.9%	31.9% (1.5%)	1.9%	1.1% (0.3%)
24	38.4%	31.7% (2.4%)	2.5%	1.8% (0.6%)

NOTES: [†] Smoking is defined as reported smoking regularly.
[‡] Approximate standard errors reported in parentheses.

TABLE 5: Drinking Prevalence by Age and Sex: Actual and Predicted.[†, ‡]

	MALES		FEMALES	
AGE	Actual	Predicted	Actual	Predicted
15	22.7%	23.7% (1.7%)	6.6%	7.0% (1.0%)
16	36.1%	36.8% (1.3%)	11.3%	9.5% (0.8%)
17	50.7%	49.2% (1.5%)	12.7%	11.6% (1.0%)
18	60.5%	59.5% (1.4%)	16.7%	13.0% (1.0%)
19	71.1%	67.1% (2.2%)	17.6%	13.5% (1.6%)
20	76.5%	77.6% (2.0%)	18.5%	16.1% (1.6%)
21	78.3%	81.0% (1.2%)	20.1%	18.4% (1.1%)
22	84.6%	82.4% (1.3%)	20.1%	20.4% (1.4%)
23	80.4%	82.0% (1.2%)	24.1%	22.1% (1.3%)
24	81.0%	79.7% (2.1%)	22.5%	23.4% (2.1%)

NOTES: [†] Drinking is defined as reported drinking regularly or occasionally.
[‡] Approximate standard errors reported in parentheses.

TABLE 6: Drinking Prevalence by Age and Sex: Actual and Predicted.[†, ‡]

	MALES		FEMALES	
AGE	Actual	Predicted	Actual	Predicted
15	1.2%	1.1% (0.4%)	0.1%	—
16	3.9%	2.7% (0.4%)	0.2%	—
17	5.5%	5.0% (0.7%)	0.1%	—
18	8.8%	7.4% (0.9%)	0.0%	—
19	11.8%	9.4% (1.4%)	0.2%	—
20	10.1%	8.6% (1.3%)	0.4%	—
21	12.6%	11.5% (1.0%)	0.9%	—
22	15.2%	13.3% (1.2%)	0.2%	—
23	15.6%	13.4% (1.1%)	0.6%	—
24	14.2%	11.8% (1.7%)	0.0%	—

NOTES: [†] Drinking is defined as reported drinking regularly.
[‡] Approximate standard errors reported in parentheses.

TABLE 7: Predicted Probabilities of Reported Smoking by Educational Attainment. †, ‡

	MALES		FEMALES	
EDUCATION COMPLETED	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
None or Some Elementary	0.32786*** (0.03168)	0.65867*** (0.03499)	0.02657** (0.01244)	0.06701*** (0.02224)
Elementary Graduate	0.33849*** (0.02992)	0.69977*** (0.03060)	0.03957*** (0.01267)	0.06273*** (0.01560)
Some High School	0.28980*** (0.01512)	0.70016*** (0.02581)	0.02238*** (0.00501)	0.06358*** (0.01393)
High School Graduate	0.20392*** (0.01508)	0.56303*** (0.02229)	0.01729*** (0.00438)	0.05083*** (0.00960)
Some College	0.16143*** (0.01907)	0.51017*** (0.03042)	0.02060*** (0.00638)	0.03525*** (0.00942)
Vocational	0.14534** (0.05678)	0.49761*** (0.04615)	0.00998 (0.01201)	0.03100** (0.01131)
College Graduate or Above	—	0.36805*** (0.04074)	—	0.03015*** (0.01131)

NOTES: † Smoking is defined as reported smoking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 8: Predicted Probabilities of Regular Smoking by Educational Attainment.[†,‡]

	MALES		FEMALES	
EDUCATION COMPLETED	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19[§] Years	Aged 20-24 Years
None or Some Elementary	0.09906*** (0.01886)	0.34998*** (0.03497)	—	0.03723** (0.01651)
Elementary Graduate	0.10392*** (0.01806)	0.37143*** (0.03197)	—	0.02070** (0.00871)
Some High School	0.07213*** (0.00882)	0.38421*** (0.02789)	—	0.01742** (0.00718)
High School Graduate	0.04543*** (0.00751)	0.24465*** (0.01932)	—	0.00763** (0.00351)
Some College	0.02656*** (0.00754)	0.23121*** (0.02642)	—	0.01153** (0.00537)
Vocational	0.00476 (0.00709)	0.21607*** (0.03880)	—	0.00522 (0.00594)
College Graduate or Above	—	0.14901*** (0.02916)	—	0.00888 (0.00569)

NOTES:
[†] Smoking is defined as reported smoking regularly.
[‡] Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
[§] Insufficient number of regular smokers among the female respondents aged 15-19 to estimate this effect.

TABLE 9: Predicted Probabilities of Reported Drinking by Educational Attainment. †, ‡

EDUCATION COMPLETED	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
None or Some Elementary	0.41797*** (0.03400)	0.81489*** (0.02907)	0.08056*** (0.01980)	0.17901*** (0.03380)
Elementary Graduate	0.46046*** (0.03206)	0.82316*** (0.02556)	0.07835*** (0.01644)	0.23103*** (0.02732)
Some High School	0.45341*** (0.01657)	0.80241*** (0.02242)	0.09309*** (0.00954)	0.24133*** (0.02471)
High School Graduate	0.44283*** (0.01926)	0.80146*** (0.01806)	0.10093*** (0.01058)	0.18040*** (0.01678)
Some College	0.48372*** (0.02797)	0.81993*** (0.02294)	0.15744*** (0.01875)	0.18858*** (0.02055)
Vocational	0.53285*** (0.09659)	0.74889*** (0.04045)	0.08823** (0.04431)	0.15561*** (0.03156)
College Graduate or Above	0.53589** (0.23824)	0.78089*** (0.03599)	0.13084* (0.07256)	0.20453*** (0.02602)

NOTES: † Drinking is defined as reported drinking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 10: Predicted Probabilities of Reported Drinking by Educational Attainment. [†,‡]

	MALES		FEMALES [§]	
EDUCATION COMPLETED	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
None or Some Elementary	0.05198*** (0.01379)	0.15590*** (0.02624)	—	—
Elementary Graduate	0.03912*** (0.01063)	0.12411*** (0.02173)	—	—
Some High School	0.05171*** (0.00756)	0.18063*** (0.02184)	—	—
High School Graduate	0.02786*** (0.00588)	0.11780*** (0.01458)	—	—
Some College	0.03123*** (0.00856)	0.10579*** (0.01827)	—	—
Vocational	—	0.05230** (0.02133)	—	—
College Graduate or Above	0.02831 (0.04172)	0.04451*** (0.01691)	—	—

NOTES:
[†] Drinking is defined as reported drinking regularly.
[‡] Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
[§] Insufficient number of regular drinkers among the female respondents to estimate these effects.

TABLE 11: Differences in Predicted Probabilities of Regular or Occasional Smoking Between Educational Levels: Males Aged 15-19 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above §
None or Some Elementary	—	n/s	n/s	-0.12393*** (0.03516)	-0.16642*** (0.03949)	-0.18252*** (0.06572)	—
Elementary Graduate		—	n/s	-0.13456*** (0.03324)	-0.17706*** (0.03772)	-0.19315*** (0.06458)	—
Some High School			—	-0.08588*** (0.02158)	-0.12837*** (0.02451)	-0.14447** (0.05911)	—
High School Graduate				—	-0.04249* (0.02334)	n/s	—
Some College					—	n/s	—
Vocational						—	
College Graduate or Above							—

NOTES:
† Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
§ Insufficient number of smokers in this category to estimate the effect.
n/s indicates that the difference is not statistically significant.

TABLE 12: Differences in Predicted Probabilities of Regular or Occasional Smoking Between Educational Levels: Males Aged 20-24 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	-0.09565** (0.04086)	-0.14850*** (0.04964)	-0.16106*** (0.05815)	-0.29062*** (0.05375)
Elementary Graduate		—	n/s	-0.13674*** (0.03699)	-0.18960*** (0.04628)	-0.20216*** (0.05529)	-0.33172*** (0.05057)
Some High School			—	-0.13713*** (0.03363)	-0.19000*** (0.04107)	-0.20254*** (0.05281)	-0.33210*** (0.04831)
High School Graduate				—	n/s	n/s	-0.19498*** (0.04585)
Some College					—	n/s	-0.14212*** (0.05268)
Vocational						—	-0.12956** (0.06024)
College Graduate or Above							—

NOTES: † Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.

TABLE 13: Differences in Predicted Probabilities of Regular or Occasional Smoking Between Educational Levels: Females Aged 15-19 Years.[†, ‡]

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above[§]
None or Some Elementary	—	n/s	n/s	n/s	n/s	n/s	—
Elementary Graduate		—	n/s	-0.02280* (0.01311)	n/s	-0.02959* (0.01742)	—
Some High School			—	n/s	n/s	n/s	—
High School Graduate				—	n/s	n/s	—
Some College					—	n/s	—
Vocational						—	
College Graduate or Above							—

NOTES: [†] The values reported are the differences between the column heading and row heading.
[‡] Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
[§] Insufficient number of smokers in this category to estimate the effect.
n/s indicates not significant.

TABLE 14: Differences in Predicted Probabilities of Regular or Occasional Smoking Between Educational Levels: Females Aged 20-24 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	n/s	n/s	n/s	n/s
Elementary Graduate		—	n/s	n/s	n/s	n/s	-0.03259* (0.01919)
Some High School			—	n/s	-0.02832* (0.01707)	n/s	-0.03343* (0.01814)
High School Graduate				—	n/s	n/s	n/s
Some College					—	n/s	n/s
Vocational						—	n/s
College Graduate or Above							—

NOTES:
† Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.

TABLE 15: Differences in Predicted Probabilities of Regular Smoking Between Educational Levels: Males Aged 15-19 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above §
None or Some Elementary	—	n/s	n/s	-0.05363*** (0.01969)	-0.07250*** (0.02103)	-0.09430*** (0.02018)	—
Elementary Graduate		—	n/s	-0.05848*** (0.01866)	-0.07736*** (0.02012)	-0.09916*** (0.01935)	—
Some High School			—	-0.02670** (0.01112)	-0.04557*** (0.01148)	-0.06737*** (0.01126)	—
High School Graduate				—	-0.01887** (0.01017)	-0.04068*** (0.01013)	—
Some College					—	-0.02180** (0.01018)	—
Vocational						—	
College Graduate or Above							—

NOTES:
† Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
§ Insufficient number of smokers in this category to estimate the effect.
n/s indicates not significant.

TABLE 16: Differences in Predicted Probabilities of Regular Smoking Between Educational Levels: Males Aged 20-24 Years.[†,‡]

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	-0.10533*** (0.03905)	-0.11878** (0.04679)	-0.13392** (0.05231)	-0.20097*** (0.04545)
Elementary Graduate		—	n/s	-0.12678*** (0.03167)	-0.14023*** (0.04450)	-0.15537*** (0.05001)	-0.22242*** (0.04278)
Some High School			—	-0.13956*** (0.03311)	-0.15300*** (0.04019)	-0.16814*** (0.04755)	-0.23520*** (0.04017)
High School Graduate				—	n/s	n/s	-0.09564*** (0.03428)
Some College					—	n/s	-0.08220** (0.04061)
Vocational						—	n/s
College Graduate or Above							—

NOTES: [†] Values reported are the differences between the column heading and row heading.
[‡] Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.

TABLE 17: Differences in Predicted Probabilities of Regular Smoking Between Educational Levels: Females Aged 20-24 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	-0.02960* (0.01655)	n/s	-0.03201* (0.01741)	n/s
Elementary Graduate		—	n/s	n/s	n/s	n/s	n/s
Some High School			—	n/s	n/s	n/s	n/s
High School Graduate				—	n/s	n/s	n/s
Some College					—	n/s	n/s
Vocational						—	n/s
College Graduate or Above							—

NOTES: † Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.

TABLE 18: Differences in Predicted Probabilities of Regular/Occasional Drinking Between Educational Levels: Females Aged 15-19 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	n/s	0.07689*** (0.02887)	n/s	n/s
Elementary Graduate		—	n/s	n/s	0.07909*** (0.02672)	n/s	n/s
Some High School			—	n/s	0.06435*** (0.02166)	n/s	n/s
High School Graduate				—	0.05651*** (0.02036)	n/s	n/s
Some College					—	n/s	n/s
Vocational						—	n/s
College Graduate or Above							—

NOTES: † Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
n/s indicates that the difference is not statistically significant.

TABLE 19: Differences in Predicted Probabilities of Regular/Occasional Drinking Between Educational Levels: Females Aged 20-24 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	n/s	n/s	n/s	n/s
Elementary Graduate		—	n/s	n/s	n/s	-0.07543* (0.04190)	n/s
Some High School			—	-0.06092** (0.02562)	n/s	-0.08572** (0.04044)	n/s
High School Graduate				—	n/s	n/s	n/s
Some College					—	n/s	n/s
Vocational						—	n/s
College Graduate or Above							—

NOTES: † Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
n/s indicates that the difference is not statistically significant.

TABLE 20: Differences in Predicted Probabilities of Regular Drinking Between Educational Levels: Males Aged 15-19 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational §	College Graduate or Above
None or Some Elementary	—	n/s	n/s	-0.02412* (0.01450)	n/s	—	n/s
Elementary Graduate		—	n/s	n/s	n/s	—	n/s
Some High School			—	-0.02385*** (0.00911)	-0.02048* (0.01098)	—	n/s
High School Graduate				—	n/s	—	n/s
Some College					—	—	n/s
Vocational						—	n/s
College Graduate or Above							—

NOTES:
† Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
§ Insufficient number of drinkers in this category to estimate the effect.
n/s indicates that the difference is not statistically significant.

TABLE 21: Differences in Predicted Probabilities of Regular Drinking Between Educational Levels: Males Aged 20-24 Years. †, ‡

EDUCATION COMPLETED	None or Some Elementary	Elementary Graduate	Some High School	High School Graduate	Some College	Vocational	College Graduate or Above
None or Some Elementary	—	n/s	n/s	n/s	n/s	-0.10360*** (0.03387)	-0.11139*** (0.03113)
Elementary Graduate		—	0.05653* (0.02971)	n/s	n/s	-0.07181** (0.03046)	-0.07960*** (0.02736)
Some High School			—	-0.06283** (0.02562)	-0.07485** (0.02952)	-0.12834*** (0.03052)	-0.13613*** (0.02760)
High School Graduate				—	n/s	-0.06551** (0.02558)	-0.07330*** (0.02195)
Some College					—	-0.05349* (0.02828)	-0.06128** (0.02537)
Vocational						—	n/s
College Graduate or Above							—

NOTES: † Values reported are the differences between the column heading and row heading.
‡ Approximate standard errors in parentheses.
*** significantly different from zero at the .01 level.
** significantly different from zero at the .05 level.
* significantly different from zero at the .10 level.
n/s indicates that the difference is not statistically significant.

TABLE 22: CURRENT EDUCATION EFFECT: Predicted Probabilities of Smoking by Current Educational Status.[†,‡]

CURRENT EDUCATION STATUS	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Enrolled	0.20358***	0.41699***	0.02250***	0.06099***
	(0.01098)	(0.03279)	(0.00408)	(0.01727)
Not Enrolled	0.33624***	0.61345***	0.02026***	0.04334***
	(0.01732)	(0.01331)	(0.00518)	(0.00550)
Difference	-0.13266***	-0.15146***	0.00224	0.01765
	(0.02219)	(0.03804)	(0.00656)	(0.01934)

NOTES:
† Smoking is defined as reported smoking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 23: CURRENT EDUCATION EFFECT: Predicted Probabilities of Smoking by Current Educational Status. †, ‡

CURRENT EDUCATION STATUS	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 § Years	Aged 20-24 Years
Enrolled	0.03617*** (0.00497)	0.15488*** (0.02358)	—	0.00829 (0.00567)
Not Enrolled	0.11455*** (0.01202)	0.31266*** (0.01303)	—	0.01288*** (0.00312)
Difference	-0.07839*** (0.01331)	-0.15778*** (0.02942)	—	-0.00458 (0.00685)

NOTES:
† Smoking is defined as reported smoking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular smokers among the female respondents aged 15-19 to estimate this effect.

TABLE 24: CURRENT EDUCATION EFFECT: Predicted Probabilities of Drinking by Current Educational Status. †, ‡

CURRENT EDUCATION STATUS	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Enrolled	0.40659***	0.74851***	0.09597***	0.22057***
	(0.01375)	(0.02887)	(0.00778)	(0.02722)
Not Enrolled	0.52919***	0.81856***	0.11785***	0.19289***
	(0.01845)	(0.01045)	(0.01231)	(0.01018)
Difference	-0.12259***	-0.07005**	-0.02188	0.02769
	(0.02537)	(0.03297)	(0.01546)	(0.03093)

NOTES: † Drinking is defined as reported drinking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 25: CURRENT EDUCATION EFFECT: Predicted Probabilities of Drinking by Current Educational Status. †, ‡

CURRENT EDUCATION STATUS	MALES		FEMALES §	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Enrolled	0.02964*** (0.00468)	0.08207*** (0.01715)	—	—
Not Enrolled	0.06146*** (0.00918)	0.12528*** (0.00938)	—	—
Difference	-0.03182*** (0.01046)	-0.04321** (0.02084)	—	—

NOTES:
† Drinking is defined as reported drinking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular drinkers among the female respondents to estimate this effect.

TABLE 26: MARRIAGE EFFECT: Predicted Probabilities of Smoking by Marital Status.[†,‡]

MARITAL STATUS	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Ever Married	0.34811*** (0.07133)	0.62298*** (0.02448)	0.03925*** (0.01271)	0.07209*** (0.00934)
Never Married	0.24939*** (0.00868)	0.57324*** (0.01296)	0.02053*** (0.00319)	0.03102*** (0.00532)
Difference	0.09872 (0.07159)	0.04973* (0.02806)	0.01872 (0.01261)	0.04107*** (0.01114)

NOTES:
† Smoking is defined as reported smoking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 27: MARRIAGE EFFECT: Predicted Probabilities of Smoking by Marital Status. †, ‡

MARITAL STATUS	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 § Years	Aged 20-24 Years
Ever Married	0.11107*** (0.03858)	0.34406*** (0.02369)	—	0.01844*** (0.00487)
Never Married	0.05788*** (0.00510)	0.25926*** (0.01158)	—	0.00817*** (0.00272)
Difference	0.05320 (0.03820)	0.08480*** (0.02618)	—	0.01027* (0.00551)

NOTES:
† Drinking is defined as reported smoking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular smokers among the female respondents aged 15-19 to estimate this effect.

TABLE 28: MARRIAGE EFFECT: Predicted Probabilities of Drinking by Marital Status. †, ‡

	MALES		FEMALES	
MARITAL STATUS	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Ever Married	0.57003*** (0.08272)	0.83472*** (0.01854)	0.12603*** (0.02204)	0.16698*** (0.01278)
Never Married	0.45184*** (0.00992)	0.79717*** (0.01042)	0.10147*** (0.00633)	0.22538*** (0.01305)
Difference	0.11819 (0.08335)	0.03755* (0.02164)	0.02456 (0.02267)	-0.05840*** (0.01911)

NOTES: † Drinking is defined as reported drinking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 29: MARRIAGE EFFECT: Predicted Probabilities of Drinking by Marital Status. †, ‡

	MALES		FEMALES §	
MARITAL STATUS	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Ever Married	0.07062** (0.03146)	0.11265*** (0.01534)	—	—
Never Married	0.03939*** (0.00434)	0.11660*** (0.00865)	—	—
Difference	0.03123 (0.03118)	-0.00394 (0.01717)	—	—

NOTES:
† Drinking is defined as reported drinking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular drinkers among the female respondents to estimate this effect.

TABLE 30: RELIGION EFFECT: Predicted Probabilities of Smoking by Religion. †,‡

	MALES		FEMALES	
RELIGION	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Catholic	0.25815*** (0.00931)	0.59840*** (0.01194)	0.02418*** (0.00357)	0.05084*** (0.00537)
Non-Catholic	0.20366*** (0.02235)	0.47264*** (0.03368)	0.01002** (0.00459)	0.02583*** (0.00873)
Difference	0.05449** (0.02413)	0.12576*** (0.03573)	0.01416*** (0.00535)	0.02501** (0.01003)

NOTES: † Smoking is defined as reported smoking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 31: RELIGION EFFECT: Predicted Probabilities of Smoking by Religion. †, ‡

	MALES		FEMALES	
RELIGION	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 § Years	Aged 20-24 Years
Catholic	0.05695*** (0.00530)	0.28821*** (0.01126)	—	0.01380*** (0.00294)
Non-Catholic	0.06994*** (0.01398)	0.19754*** (0.02739)	—	0.00491 (0.00370)
Difference	0.01298 (0.01441)	0.09067*** (0.02943)	—	0.00889** (0.00453)

NOTES:
† Smoking is defined as reported smoking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular smokers among the female respondents aged 15-19 to estimate this effect.

TABLE 32: RELIGION EFFECT: Predicted Probabilities of Drinking by Religion. †, ‡

	MALES		FEMALES	
RELIGION	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Catholic	0.47440*** (0.01055)	0.82112*** (0.00915)	0.11446*** (0.00677)	0.20761*** (0.00968)
Non-Catholic	0.31789*** (0.02605)	0.66291*** (0.03152)	0.04842*** (0.01087)	0.14711*** (0.01986)
Difference	0.15652*** (0.02817)	0.15820*** (0.03282)	0.06603*** (0.01247)	0.06051*** (0.02204)

NOTES:
† Drinking is defined as reported drinking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 33: RELIGION EFFECT: Predicted Probabilities of Drinking by Religion. †, ‡

	MALES		FEMALES §	
RELIGION	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Catholic	0.04356*** (0.00474)	0.11841*** (0.00820)	—	—
Non-Catholic	0.01988*** (0.00724)	0.09634*** (0.01979)	—	—
Difference	0.02368*** (0.00814)	0.02206 (0.02107)	—	—

NOTES:
† Smoking is defined as reported drinking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular drinkers among the female respondents to estimate this effect.

TABLE 34: URBAN-RURAL EFFECT: Predicted Probabilities of Smoking by Urbanity.[†,‡]

	MALES		FEMALES	
URBANITY	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Urban	0.26264***	0.58269***	0.02542***	0.05614***
	(0.01210)	(0.01602)	(0.00440)	(0.00730)
Rural	0.23286***	0.58696***	0.01627***	0.03276***
	(0.01272)	(0.01855)	(0.00387)	(0.00624)
Difference	0.02978*	-0.00427	0.00916*	0.02338**
	(0.01799)	(0.02623)	(0.00545)	(0.00994)

NOTES:
[†] Smoking is defined as reported smoking regularly or occasionally.
[‡] Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 35: URBAN-RURAL EFFECT: Predicted Probabilities of Smoking by Urbanity. †, ‡

	MALES		FEMALES	
URBANITY	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 § Years	Aged 20-24 Years
Urban	0.06123***	0.27422***	—	0.02153***
	(0.00684)	(0.01482)		(0.00435)
Rural	0.05444***	0.28112***	—	0.00398**
	(0.00688)	(0.01729)		(0.00181)
Difference	0.00679	-0.00670	—	0.01755***
	(0.00926)	(0.02427)		(0.00445)

NOTES:
† Smoking is defined as reported smoking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular smokers among the female respondents aged 15-19 to estimate this effect.

TABLE 36: URBAN-RURAL EFFECT: Predicted Probabilities of Drinking by Urbanity. †,‡

	MALES		FEMALES	
URBANITY	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Urban	0.44420*** (0.01368)	0.80962*** (0.01263)	0.10841*** (0.00823)	0.20693*** (0.01233)
Rural	0.46859*** (0.01524)	0.79954*** (0.01499)	0.09483*** (0.00899)	0.18287*** (0.01373)
Difference	0.02438 (0.02129)	0.01009 (0.02107)	0.01358 (0.01215)	0.02406 (0.01938)

NOTES:
† Drinking is defined as reported drinking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.

TABLE 37: URBAN-RURAL EFFECT: Predicted Probabilities of Drinking by Urbanity. †, ‡

URBANITY	MALES		FEMALES §	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Urban	0.04256*** (0.00581)	0.12380*** (0.01092)	—	—
Rural	0.03568*** (0.00560)	0.10328*** (0.01147)	—	—
Difference	0.00688 (0.00753)	0.02052 (0.01643)	—	—

NOTES:
† Drinking is defined as reported drinking regularly.
‡ Approximate standard errors reported in parentheses.
*** indicates significantly different from zero at the .01 level.
** indicates significantly different from zero at the .05 level.
* indicates significantly different from zero at the .10 level.
§ Insufficient number of regular drinkers among the female respondents to estimate this effect.

TABLE 38: Predicted Probabilities of Smoking by Region. †, ‡

REGION	MALES		FEMALES	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Metro Manila §	0.21782 (0.02677)	0.57887 (0.03413)	0.05016 (0.01204)	0.11941 (0.02079)
Ilocos	0.18320 (0.02447)	0.55355 (0.04387)	0.00289*** (0.00359)	0.03884*** (0.01473)
Cagayan Valley	0.18031 (0.03918)	0.59563 (0.05433)	0.01499** (0.01189)	0.04596** (0.02465)
Central Luzon	0.25313 (0.02644)	0.56579 (0.03559)	0.02791 (0.00894)	0.04813*** (0.01275)
South Luzon	0.28242* (0.02422)	0.54235 (0.03140)	0.03428 (0.00971)	0.02590*** (0.00915)
Bicol	0.26555 (0.03269)	0.61105 (0.04659)	0.01745** (0.00886)	0.04892** (0.01800)
Western Visayas	0.29799** (0.02596)	0.55036 (0.03329)	0.02310* (0.00781)	0.04722*** (0.01456)
Central Visayas	0.28240 (0.03043)	0.56593 (0.04078)	0.01863** (0.00828)	0.04085*** (0.01506)
Eastern Visayas	0.16616 (0.03444)	0.46760 (0.05763)	0.00444*** (0.00575)	0.02302*** (0.01604)
Western Mindanao	0.37585*** (0.04068)	0.71706** (0.04241)	0.06215 (0.01850)	0.04074*** (0.01926)
Northern Mindanao	0.22688 (0.02870)	0.59200 (0.04458)	0.02292* (0.00903)	0.01434*** (0.00958)
Southern Mindanao	0.27969 (0.03258)	0.63528 (0.04120)	0.02552 (0.01119)	0.07016 (0.02171)
Central Mindanao	0.29166 (0.04289)	0.70833** (0.04872)	0.01249** (0.00916)	0.03730*** (0.01818)
Cordillera Administrative Region	0.27306 (0.06888)	0.51608 (0.08416)	0.02506 (0.02158)	0.05125* (0.03150)

NOTES:
† Smoking is defined as reported smoking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
§ Omitted group.
*** indicates significantly different from the omitted group at the .01 level.
** indicates significantly different from the omitted group at the .05 level.
* indicates significantly different from the omitted group at the .10 level.

TABLE 39: Predicted Probabilities of Smoking by Region. †, ‡

REGION	MALES		FEMALES ¶	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Metro Manila §	0.09441 (0.01940)	0.36797 (0.03443)	—	—
Ilocos	0.03116*** (0.01001)	0.15741*** (0.03156)	—	—
Cagayan Valley	0.02723*** (0.01405)	0.24547** (0.04687)	—	—
Central Luzon	0.08919 (0.01723)	0.37926 (0.03518)	—	—
South Luzon	0.06270 (0.01253)	0.22486*** (0.02616)	—	—
Bicol	0.02686*** (0.01014)	0.30295 (0.04253)	—	—
Western Visayas	0.03921** (0.01111)	0.16938*** (0.02605)	—	—
Central Visayas	0.08512 (0.01808)	0.27441* (0.03656)	—	—
Eastern Visayas	0.02980*** (0.01407)	0.16267*** (0.04041)	—	—
Western Mindanao	0.13902 (0.02798)	0.43574 (0.04631)	—	—
Northern Mindanao	0.06675 (0.01679)	0.22484*** (0.03777)	—	—
Southern Mindanao	0.07475 (0.01796)	0.38182 (0.04174)	—	—
Central Mindanao	0.04988* (0.01799)	0.33434 (0.04924)	—	—
CAR	0.04670 (0.03031)	0.15893*** (0.06253)	—	—

NOTES: † Smoking is defined as reported smoking regularly. ‡ Approximate standard errors reported in parentheses. § Omitted group. *** indicates significantly different from the omitted group at the .01 level. ** indicates significantly different from the omitted group at the .05 level. * indicates significantly different from the omitted group at the .10 level. ¶ Insufficient number of regular smokers among the female respondents to estimate these effects.

TABLE 40: Predicted Probabilities of Drinking by Region. †, ‡

REGION	MALES Aged 15-19 Years	MALES Aged 20-24 Years	FEMALES Aged 15-19 Years	FEMALES Aged 20-24 Years
Metro Manila §	0.43620	0.75274	0.16001	0.25486
	(0.03268)	(0.02979)	(0.02043)	(0.02686)
Ilocos	0.31148***	0.71331	0.05304***	0.10617***
	(0.02946)	(0.03881)	(0.01529)	(0.02394)
Cagayan Valley	0.40265	0.87019**	0.01715***	0.05080***
	(0.05074)	(0.03578)	(0.01248)	(0.02664)
Central Luzon	0.52180*	0.83951**	0.07793***	0.13863***
	(0.03077)	(0.02606)	(0.01495)	(0.02099)
South Luzon	0.47427	0.77884	0.11899	0.19608*
	(0.02705)	(0.02576)	(0.01732)	(0.02349)
Bicol	0.33401**	0.77690	0.07158***	0.18952
	(0.03510)	(0.03864)	(0.01782)	(0.03335)
Western Visayas	0.49198	0.86491***	0.09685**	0.17901**
	(0.02820)	(0.02186)	(0.01501)	(0.02478)
Central Visayas	0.57929***	0.85825**	0.22539*	0.26554
	(0.03385)	(0.02864)	(0.02748)	(0.03550)
Eastern Visayas	0.40040	0.76890	0.12346	0.30796
	(0.04729)	(0.04869)	(0.03068)	(0.05256)
Western Mindanao	0.44184	0.83591*	0.18968	0.28294
	(0.04206)	(0.03399)	(0.02966)	(0.04438)
Northern Mindanao	0.48927	0.80949	0.13534	0.30694
	(0.03451)	(0.03521)	(0.02138)	(0.04055)
Southern Mindanao	0.49923	0.81499	0.12030	0.22524
	(0.03722)	(0.03266)	(0.02356)	(0.03422)
Central Mindanao	0.49080	0.82933	0.06540***	0.25219
	(0.04839)	(0.03892)	(0.02077)	(0.04317)
CAR	0.55546	0.74691	0.02459***	0.19797
	(0.07587)	(0.07184)	(0.02098)	(0.05583)

NOTES:
† Drinking is defined as reported drinking regularly or occasionally.
‡ Approximate standard errors reported in parentheses.
§ Omitted group.
*** indicates significantly different from the omitted group at the .01 level.
** indicates significantly different from the omitted group at the .05 level.
* indicates significantly different from the omitted group at the .10 level.

TABLE 41: Predicted Probabilities of Drinking by Region. †, ‡

REGION	MALES		FEMALES ¶	
	Aged 15-19 Years	Aged 20-24 Years	Aged 15-19 Years	Aged 20-24 Years
Metro Manila §	0.03350 (0.01090)	0.14228 (0.02450)	—	—
Ilocos	0.01001* (0.00573)	0.06351** (0.02073)	—	—
Cagayan Valley	0.02171 (0.01449)	0.12091 (0.03569)	—	—
Central Luzon	0.04651 (0.01224)	0.05796*** (0.01619)	—	—
South Luzon	0.04891 (0.01114)	0.07590** (0.01623)	—	—
Bicol	0.02600 (0.01062)	0.13070 (0.03043)	—	—
Western Visayas	0.03191 (0.00966)	0.04932*** (0.01515)	—	—
Central Visayas	0.09265*** (0.01892)	0.27068*** (0.03580)	—	—
Eastern Visayas	0.04357 (0.01840)	0.05057*** (0.02366)	—	—
Western Mindanao	0.09411** (0.02335)	0.23385* (0.03917)	—	—
Northern Mindanao	0.03645 (0.01226)	0.14900 (0.03156)	—	—
Southern Mindanao	0.06487 (0.01752)	0.16703 (0.03129)	—	—
Central Mindanao	0.05025 (0.01920)	0.28044 (0.04701)	—	—
CAR	—	0.07537 (0.04453)	—	—

NOTES: † Smoking is defined as reported drinking regularly. ‡ Approximate standard errors reported in parentheses. § Omitted group.
*** indicates significantly different from the omitted group at the .01 level.
** indicates significantly different from the omitted group at the .05 level.
* indicates significantly different from the omitted group at the .10 level.
¶ Insufficient number of regular drinkers among the female respondents to estimate these effects.

REFEERENCES

Amemiya, T. *Advanced Econometrics*. Harvard University Press, Cambridge, Massachusetts, 1985.

Amemiya, T. Qualitative response models: A survey. *Journal of Economic Literature* , Vol. 19, 1483-1536, 1981.

Maddala, G. S. *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge University Press, Cambridge, 1983.

Greene, W. H. *Econometric Analysis* (2nd edition). Macmillan, New York, 1993.

Greene, W. H. *LIMDEP Version 7.0 User's Manual*. Econometric Software, Inc., Bellport, New York, 1995.

National Statistics Office. *Report of the Survey of Cigarette Smoking Behavior 1993*. National Statistics Office, Office of the Prime Minister, Bangkok, Thailand.

World Bank. *World Development Report 1993: Investing in Health*. Oxford University Press, New York, NY, 1993.