

# AN INTERNATIONAL ANALYSIS OF SMOKING CONTROL LEVELS IN RELATION TO HEALTH, SOCIAL AND ECONOMIC INDICATORS

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## ABSTRACT

The relationship was examined between government smoking control levels and eight health, social and economic indicators in 93 countries. Governmental smoking control levels were quantified by assigning a point to each control measure. The controls were as follows: health warning on cigarette package; tar, nicotine or carbon monoxide level indications on cigarette package; ban on advertising on TV or radio; and prohibiting sales to minors. The eight indicators were annual rate of population increase, infant mortality rate, population per hospital bed, number of TV sets per 1000 people, protein supply per capita per day, military expenditure as % of GNP, gross national product (GNP) and % of primary school enrollment. We analyzed predictors of the smoking control level using multiple linear regression analysis with these eight indicators. This regression model indicates that the higher the GNP is, the stronger the smoking control level is, and GNP alone accounts for 42% of the variance in smoking control levels. The set of eight indicators explained 49% of it. GNP had the largest partial regression coefficient in the standardized model. Therefore, a low GNP might be an important factor behind the difficulty in strengthening government controls on smoking.

Key Words: Smoking control level, Legislation, Regression analysis, World health

## INTRODUCTION

Since 1980 when the World Health Organization (WHO) proposed that governments should promote smoking control, with the slogan "Smoking or Health: The Choice is Yours," many governments have begun to control cigarette smoking in their countries. Although the levels of smoking control in the developed countries, especially the United States and the United Kingdom, have been published in recent years,<sup>1-9)</sup> little is known about the levels in the developing countries, where the smoking control levels would presumably be lower.

The Surgeon General of the United States issued a report on "Smoking and Health in the Americas" in 1992.<sup>9)</sup> The report said: "By the mid-1980s, an estimated 526,000 people in the Americas were dying each year of diseases that are directly attributable to smoking. The number continues to increase. Most of these deaths occur in Canada and the United States, where smoking has been a widespread, entrenched habit for over 60 years." It continued: "Other countries of the Americas face different circumstances. For some, still in the process of economic development, the prevalence of smoking is still low, and the problem may have a lower priority than more acute public health concerns. For others, further along in their development, diseases associated with smoking are already major causes of death, and the prevalence of smoking is high among young people in urban areas." Not only in the Americas, but throughout the world, the

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high prevalence of smoking among young people in many developing countries is ominous. Each country must deal with the smoking problem in its own political, economic, and cultural context. Nonetheless, the countries of the world face a common threat, even though they may be in differing stages of evolution.

Therefore, it is necessary to know the various smoking control levels, both in developed and developing countries, by areas of priority based on economic, social and health conditions. The aim of the present paper is to measure the relationship between smoking control levels and health, social and economic indicators in 93 countries.

## MATERIALS AND METHODS

We obtained data on levels of government control for 93 countries through a survey. Questionnaires were sent to 105 embassies in Tokyo in December of 1985, and 91 replies to the questionnaires were obtained (Appendix). Information on Iceland<sup>10)</sup> and the situation in Japan was added, and the total number of countries analyzed was 93.

As health, social and economic indicators in the 93 countries, we used the following eight criteria: 1) annual rate of population increase (%)<sup>11)</sup>; 2) infant mortality rate per 1,000 live births<sup>11)</sup>; 3) population per hospital bed (persons)<sup>11)</sup>; 4) number of TV sets per 1,000 inhabitants<sup>11)</sup>; 5) protein supply per capita per day (grams)<sup>11)</sup>; 6) military spending as % of GNP<sup>11)</sup>; 7) gross national product per capita (GNP; US dollars)<sup>12)</sup>; and 8) percentage of primary school enrollment (%).<sup>12)</sup>

Governmental smoking control levels were quantified by assigning a point value to each of the controls. One point was assigned to any health warning on cigarette packages, two points to a strong health warning and three points to an alternative health warning. The classification of warning level was the same as in the previous report.<sup>13)</sup> One point was assigned, respectively, to tar, nicotine, or carbon monoxide level indications on a cigarette package, to a ban on advertising on TV or radio, and to prohibiting sales to minors.

The points were totaled for each country, and countries were divided into five groups according to their total points: 0, 1, 2, 3, 4 or more.

For the statistical method, we employed regression analysis and multiple regression analysis after comparing the mean values of indicators by smoking control level. Since military expenditure and primary school enrollment were measured in percentages, we used angular transformation to achieve normality and equality of variances. In regression analysis, we computed the regression coefficient of the smoking control level on the value of the indicators.

In multiple regression analysis, the level of smoking control in the countries was taken as a dependent variable and the eight health, social and economic indicators were taken as independent variables. The eight variables were standardized to a mean of 0 and a standard deviation of 1 to compute the partial regression coefficients to evaluate the weight of the eight variables. Thus, the given control level was predicted on the basis of a set of indicators. A forward stepwise technique was used to select significant predictors.

## RESULTS

Table 1 shows the number of countries by smoking control level. The countries with four or more points (very strong smoking control) are the United States, East Germany, West Germany, Iceland, Norway, Sweden, the United Kingdom and Australia. No points, however, were

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awarded to three countries in Africa, three on the coast of the Caribbean Sea in North America, two in South America, one in the Middle and near East, one in southeast Asia, and one in Europe.

Table 1. Smoking Control Levels in Various Countries

| Category    | Point total | No. of countries surveyed |
|-------------|-------------|---------------------------|
| None        | 0           | 12                        |
| Few         | 1           | 33                        |
| Medium      | 2           | 25                        |
| Strong      | 3           | 15                        |
| Very strong | 4 or more   | 8                         |
| Total       |             | 93                        |

The mean values of the eight health, social, and economic indicators for each smoking control level are shown in Table 2. Indicators such as GNP, protein supply, percentage of primary school enrollment, and the number of TV sets in the countries with the "strong" control level had higher values than those in the countries with the "none" or "few" control levels. Conversely, indicators such as population increase, population per hospital bed, infant mortality rate, and military spending in the countries with the "strong" control level had lower values than in the countries with the "none" or "few" control levels.

The regression coefficients (slope  $b$ ), of which positive or negative sign indicates the increase or decrease of indicators mathematically, are also shown in Table 2.

With these eight variables, we analyzed predictors of smoking control level using multiple linear regression analysis, in which individual variables were selected by the stepwise technique.

The first model:

$$\text{Predicted (smoking control level)} = 2.019 + 0.002 \times (\text{GNP})$$

$$\text{Correlation coefficient (r)} = 0.65$$

$$\text{Coefficient of determination (r}^2\text{)} = 0.42$$

The model indicates that the higher the GNP is, the stronger the smoking control level is, and GNP alone accounted for 42% of the variation in the smoking control level. The other seven variables were added in a stepwise manner to the above model, exhausting all eight variables.

The final model:

$$\text{Predicted (Smoking control level)} = 4.3505 +$$

$$0.0011 \times (\text{GNP}) - 0.0050 \times (\text{Pop. in.})$$

$$- 0.0270 \times (\text{School}) - 0.0011 \times (\text{Pop./bed})$$

$$- 0.0029 \times (\text{Military}) + 0.0018 \times (\text{TV})$$

$$- 0.0030 \times (\text{Infant}) + 0.0004 \times (\text{Protein})$$

$$\text{Multiple correlation coefficient (R)} = 0.70$$

$$\text{Coefficient of determination (R}^2\text{)} = 0.49$$

The eight variables accounted for 49% of the variance in the smoking control level. The difference between the percent explained by GNP and that by a set of eight variables was 7 per cent. The partial regression coefficients are shown in Table 3, and GNP displayed the largest value.

Table 2. The Mean Value of the Indicators (Xi) by Smoking Control Level

| Number of nations | Mean values of indicators |            |               |               |                    |      | Regression coefficient of Yi on Xi (slope b) |
|-------------------|---------------------------|------------|---------------|---------------|--------------------|------|----------------------------------------------|
|                   | Smoking control level     |            |               |               |                    |      |                                              |
|                   | None<br>(Yi=1)            | Few<br>(2) | Medium<br>(3) | Strong<br>(4) | Very strong<br>(5) |      |                                              |
| Pop. increase     | 93                        | 2.3        | 2.2           | 2.3           | 1.8                | 0.5  | ** -0.4                                      |
| GNP               | 92                        | 158        | 168           | 393           | 773                | 1042 | ** 247                                       |
| Protein           | 89                        | 66         | 68            | 75            | 89                 | 102  | ** 9.3                                       |
| Pop./Bed          | 93                        | 600        | 704           | 386           | 261                | 110  | ** -161                                      |
| Infant            | 92                        | 75.4       | 85.3          | 54.7          | 49.2               | 9.0  | ** -17.6                                     |
| School            | 92                        | 79.8       | 70.3          | 77.1          | 81.5               | 95.0 | ** 4.6                                       |
| TV                | 87                        | 70         | 89            | 152           | 229                | 378  | ** 74                                        |
| Military          | 70                        | 7.4        | 4.3           | 5.4           | 5.3                | 4.2  | -0.3                                         |

1) The regression coefficient (slope b) was computed as follows;

$$\text{slope } b = \frac{\sum N_i(X_i - \bar{X})(Y_i - \bar{Y})}{\sum N_i(Y_i - \bar{Y})^2}$$

$N_i$  = number of nations

$X_i$  = value of indicators,  $\bar{X}$  = mean value of indicators,  $\bar{Y}$  = mean score

$Y_i$  = score given to smoking control level: none, 1; few, 2; medium, 3; strong, 4; very strong, 5

- 2) The units of the indicators; Pop. increase (% per year), GNP (dollars per capita), Protein (grams per capita per day), Pop./Hospital Bed (persons), Infant (mortality rate per 1,000 live births), School (% of enrollment), TV (number of TV sets per 1,000 inhabitants), Military (spending as % of GNP)
- 3) Mean values of Military and School were calculated using angular transformation.
- 4) Probability under the null hypothesis  $H_0: \beta=0$  (\*\*):  $p < 0.01$ , (\*):  $0.01 < p < 0.05$

Table 3. Partial Regression Coefficients of the Indicators in the Multiple Linear Regression Equation

| Indicator     | Partial regression coefficient | F-value           |
|---------------|--------------------------------|-------------------|
| Pop. increase | -0.051                         | 0.07              |
| GNP           | 0.416                          | 4.13 <sup>a</sup> |
| Protein       | 0.070                          | 0.17              |
| Pop./bed      | -0.126                         | 0.70              |
| Infant        | -0.114                         | 0.41              |
| School        | -0.377                         | 5.48 <sup>a</sup> |
| TV            | 0.229                          | 0.80              |
| Military      | -0.134                         | 1.48              |

a) Significance at the 5% level.

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Fig. 1 shows the relationship between the smoking control level and GNP. All but three countries with "strong" and "very strong" levels showed high GNP.

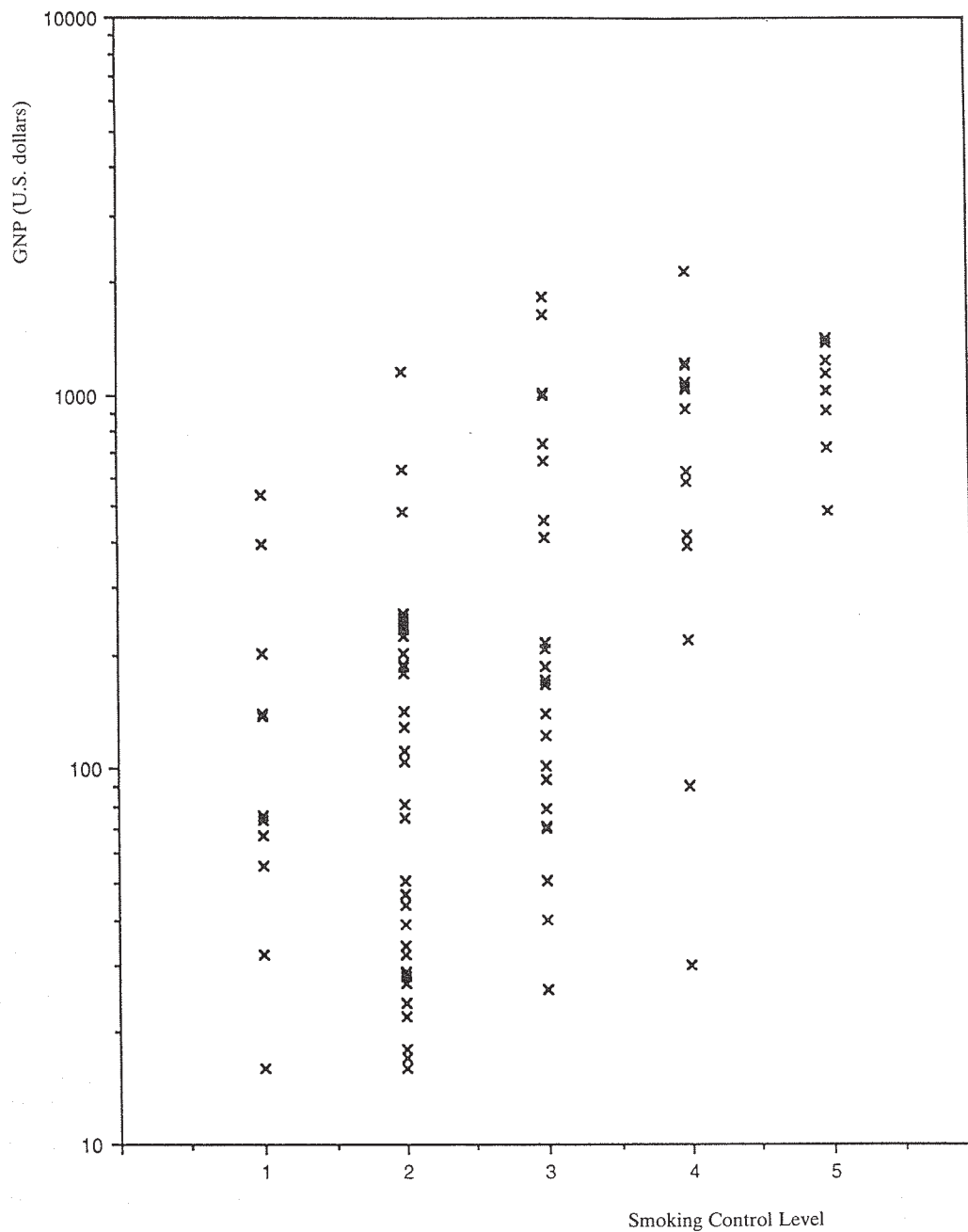


Fig. 1. Relationship between GNP and smoking control level

## DISCUSSION

There are many factors that influence the smoking control level in the nations of the world. Some governments have thought that tobacco sales will benefit the nation's economy, without realizing the adverse effects of smoking on health. Even if they know the adverse effects, some of them must face more pressing issues such as communicable diseases and malnutrition.

GNP and percentage of primary school enrollment were selected as indicators because of the report<sup>14)</sup> that consumption of tobacco reduces GNP, and school serves an important role in educating children about the risk of smoking. Military expenditures as % of GNP were selected after a report<sup>15)</sup> that military spending correlates with infant mortality rate in 141 countries. Besides GNP, school enrollment and military spending, we selected five items from the Statistical Yearbook of the United Nations.<sup>11)</sup>

Further work is required to analyze the relationship between the control level and the indicators related directly to it, such as the smoking rate, tobacco-related morbidity and mortality, and tobacco revenues in each country.

The present study made it clear that countries with a high GNP had stricter smoking control than those with a low GNP. As reflected in the literature,<sup>6,14)</sup> smoking has become an issue of great importance in developing countries with a low GNP.

From the standpoint of GNP, Japan was numbered among the nations with "strong" smoking curbs. Japan was, however, at the "medium" smoking control level, with only two points assigned to health warning on cigarette packages and prohibiting sales to minors. Most countries at the "medium" level had two points assigned to health warning and ban on advertising on TV or radio instead of prohibiting sales to minors. Japan is considered liberal in that the government permits tobacco advertising on TV and radio.

The smoking control level was influenced more by GNP than the following factors: population increase; infant mortality rate; population per hospital bed; number of TV sets; protein supply and school enrollment.

We will further investigate the change in the relationship between GNP and the smoking control level in each country.

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## Appendix. Summary of National Legislation to Control Smoking

|                             | Package information             | Package information required by law | Health warning | Tar level | Nicotine level | Carbon monoxide level | Others | Ban on advertising (TV, radio) | Prohibiting sales, etc. to young people by law | Age limit for purchase of tobacco |
|-----------------------------|---------------------------------|-------------------------------------|----------------|-----------|----------------|-----------------------|--------|--------------------------------|------------------------------------------------|-----------------------------------|
|                             | Contents of package information |                                     |                |           |                |                       |        |                                |                                                |                                   |
|                             | 1                               | 2                                   | 3              | 4         | 5              | 6                     | 7      | 8                              | 9                                              | 10                                |
| AFRICA                      |                                 |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Algeria                     | -                               | -                                   | -              | -         | -              | -                     | -      | X                              | -                                              | 16                                |
| Central African Republic    | -                               | -                                   | -              | -         | -              | -                     | -      | X                              | -                                              | -                                 |
| Egypt                       | X                               | X                                   | 2              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Ethiopia                    | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Gabon                       | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Ghana                       | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | X                                              | 18                                |
| Guinea                      | X                               | ?                                   | ?              | X         | X              | X                     | X      | -                              | X                                              | 19                                |
| Ivory Coast                 | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Kenya                       | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Liberia                     | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | 18                                |
| Libyan Arab Jamahiriya      | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Madagascar                  | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Morocco                     | -                               | -                                   | -              | -         | -              | -                     | -      | ?                              | X                                              | 17                                |
| Nigeria                     | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Rwanda                      | -                               | ?                                   | -              | -         | -              | -                     | -      | X                              | -                                              | -                                 |
| Senegal                     | -                               | -                                   | -              | -         | -              | -                     | -      | ?                              | X                                              | 18                                |
| Somalia                     | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| South Africa                | X                               | -                                   | -              | X         | X              | -                     | -      | -                              | -                                              | -                                 |
| Sudan                       | X                               | X                                   | 1              | -         | -              | -                     | -      | X                              | -                                              | -                                 |
| Tunisia                     | -                               | -                                   | -              | -         | -              | -                     | -      | X                              | -                                              | 20+                               |
| Uganda                      | -                               | -                                   | -              | -         | -              | -                     | -      | X                              | -                                              | -                                 |
| United Republic of Tanzania | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Zaire                       | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | 19                                |
| Zambia                      | N.A.                            |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Zimbabwe                    | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| NORTH AMERICA               |                                 |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Canada                      | X                               | X                                   | 1              | X         | X              | -                     | -      | -                              | X                                              | 16                                |
| Costa Rica                  | X                               | X                                   | 1              | -         | -              | -                     | -      | X                              | -                                              | 16                                |
| Cuba                        | X                               | -                                   | 1              | -         | -              | -                     | -      | X                              | -                                              | 16                                |
| Dominican Republic          | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| El Salvador                 | X                               | -                                   | ?              | -         | -              | -                     | -      | -                              | X                                              | -                                 |
| Guatemala                   | X                               | -                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | 19                                |
| Haiti                       | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Honduras                    | ?                               | ?                                   | -              | -         | -              | -                     | -      | ?                              | -                                              | -                                 |
| Mexico                      | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | 18                                |
| Nicaragua                   | X                               | ?                                   | 1              | -         | -              | -                     | -      | X                              | X                                              | 18                                |
| Panama                      | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | X                                              | 18                                |
| United States               | X                               | X                                   | 3              | -         | -              | -                     | -      | X                              | *1)                                            | *1)                               |
| SOUTH AMERICA               |                                 |                                     |                |           |                |                       |        |                                |                                                |                                   |
| Argentina                   | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Bolivia                     | X                               | X                                   | 1              | -         | -              | -                     | -      | X                              | -                                              | -                                 |
| Brazil                      | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | X                                              | 18                                |
| Chile                       | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Colombia                    | X                               | X                                   | 1              | -         | -              | -                     | -      | *2)                            | X                                              | -                                 |
| Ecuador                     | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | 16                                |
| Paraguay                    | -                               | -                                   | -              | -         | -              | -                     | -      | -                              | -                                              | 16                                |
| Peru                        | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Uruguay                     | X                               | X                                   | 1              | -         | -              | -                     | -      | -                              | -                                              | -                                 |
| Venezuela                   | X                               | X                                   | 1              | -         | -              | -                     | -      | X                              | -                                              | -                                 |



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|                              | 1    | 2 | 3  | 4 | 5 | 6 | 7 | 8   | 9 | 10  |
|------------------------------|------|---|----|---|---|---|---|-----|---|-----|
| ASIA                         |      |   |    |   |   |   |   |     |   |     |
| Bangladesh                   | N.A. |   |    |   |   |   |   |     |   |     |
| Burma                        | -    | - | -  | - | - | - | - | X   | - | -   |
| China                        | -    | ? | -  | - | - | - | - | X   | - | 17  |
| India                        | X    | X | 1  | - | - | - | - | X   | - | -   |
| Indonesia                    | -    | - | -  | - | - | - | - | *3) | - | -   |
| Iran                         | X    | - | 1  | - | - | - | - | X   | - | 16  |
| Iraq                         | N.A. |   |    |   |   |   |   |     |   |     |
| Israel                       | -    | - | -  | - | - | - | - | -   | - | -   |
| Japan                        | X    | - | 1* | - | - | - | - | -   | X | 19  |
| Jordan                       | X    | X | 1  | - | - | - | - | X   | - | 20+ |
| Korea, Republic of           | X    | - | 1  | - | - | - | - | -   | - | 20+ |
| Kuwait                       | X    | X | 2  | - | - | - | - | -   | - | 16  |
| Lao People's Democratic Rep. | N.A. |   |    |   |   |   |   |     |   |     |
| Lebanon                      | N.A. |   |    |   |   |   |   |     |   |     |
| Malaysia                     | X    | X | 1  | - | - | - | - | X   | - | -   |
| Mongolia                     | X    | - | ?  | - | - | - | - | X   | ? | 16  |
| Nepal                        | -    | - | -  | - | - | - | - | X   | - | -   |
| Oman                         | X    | - | 2  | - | - | - | - | X   | - | 20+ |
| Pakistan                     | X    | X | 1  | - | - | - | - | -   | - | 18  |
| Philippines                  | -    | - | -  | - | - | - | - | -   | - | -   |
| Qatar                        | N.A. |   |    |   |   |   |   |     |   |     |
| Saudi Arabia                 | X    | X | 2  | - | - | - | - | X   | - | 20+ |
| Singapore                    | X    | X | 1  | - | - | - | - | X   | - | -   |
| Sri Lanka                    | N.A. |   |    |   |   |   |   |     |   |     |
| Syrian Arab Emirates         | X    | 1 | X  | - | - | - | - | X   | - | 18  |
| Thailand                     | X    | X | 1  | - | - | - | - | -   | - | -   |
| Turkey                       | X    | X | 1  | - | - | - | - | X   | - | -   |
| United Arab Republic         | X    | X | 1  | X | - | X | X | -   | X | 18  |
| Viet Nam                     | -    | - | -  | - | - | - | - | X   | - | -   |
| Yemen Arab Republic          | -    | - | -  | - | - | - | - | X   | - | 20+ |
| EUROPE                       |      |   |    |   |   |   |   |     |   |     |
| Austria                      | X    | X | -  | X | X | - | - | X   | X | 18  |
| Belgium                      | X    | X | 1  | X | X | - | - | X   | - | -   |
| Bulgaria                     | X    | X | 1  | - | - | - | - | X   | X | 19  |
| Czechoslovakia               | X    | X | 1  | - | - | - | - | X   | X | 18  |
| Denmark                      | -    | - | -  | - | - | - | - | X   | - | -   |
| Finland                      | X    | X | 1  | - | - | - | - | X   | X | 16  |
| France                       | X    | X | 1  | X | X | - | - | X   | - | -   |
| German Dem. Rep.             | X    | X | 2  | - | - | - | X | -   | X | 18  |
| Germany, Fed. Rep.           | X    | X | 1  | X | X | - | - | X   | X | 16  |
| Greece                       | -    | - | -  | - | - | - | - | -   | - | -   |
| Hungary                      | X    | X | 1  | - | - | - | - | X   | - | -   |
| Iceland                      | X    | X | 3  | - | - | - | - | X   | X | 16  |
| Ireland                      | X    | X | 2  | - | - | - | - | X   | X | 16  |
| Italy                        | -    | - | -  | - | - | - | - | X   | - | -   |
| Netherlands                  | X    | X | 1  | X | X | - | - | X   | - | -   |
| Norway                       | X    | X | 3  | - | - | - | - | X   | - | 16  |
| Poland                       | X    | X | 1  | - | - | - | - | X   | X | 18  |
| Portugal                     | X    | X | 1  | X | X | - | - | X   | - | -   |
| Romania                      | -    | ? | -  | - | - | - | - | X   | - | -   |
| Spain                        | X    | X | 1  | - | - | - | - | -   | - | 18  |
| Sweden                       | X    | X | 3  | - | - | - | - | X   | - | -   |
| Switzerland                  | X    | X | 1  | - | - | - | - | -   | X | 20+ |
| United Kingdom               | X    | - | 3  | X | X | - | - | X   | X | 18  |
| Yugoslavia                   | -    | - | -  | - | - | - | - | X   | - | -   |
| OCEANIA                      |      |   |    |   |   |   |   |     |   |     |
| Australia                    | X    | X | 1  | - | - | - | - | X   | X | 16  |
| Fiji                         | X    | - | 1  | - | - | - | - | -   | - | 16  |
| Nauru                        | N.A. |   |    |   |   |   |   |     |   |     |
| New Zealand                  | X    | X | 1  | - | - | - | - | X   | - | -   |
| Papua New Guinea             | X    | X | 1  | - | - | - | - | -   | X | 20+ |
| USSR                         |      |   |    |   |   |   |   |     |   |     |
| USSR                         | X    | X | 1  | - | - | - | - | X   | - | 17  |

**Glossary and Symbols Used in Summary**

|                                     |                                                                                                             |                   |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------|
| Package information                 | X: required                                                                                                 | -: not required   |
| Package information required by law | X: yes                                                                                                      | -: no             |
| Contents of package information     | X: required                                                                                                 | -: not required   |
| Health warning                      | -: none<br>1: health warning (*: weak warning)<br>2: strong health warning<br>3: alternative health warning |                   |
| Ban on advertising                  | X: ban                                                                                                      | -: no ban         |
| Prohibiting sales                   | X: prohibiting                                                                                              | -: no prohibiting |
| N.A.:                               | No answer                                                                                                   |                   |
| Age limit:                          | 20+ 20, 21, and 22                                                                                          |                   |
| United States:                      | *1) Prohibits sales, etc. to young people.<br>Age limit for purchase of tobacco varies from state to state. |                   |
| Colombia:                           | *2) Advertising of tobacco is banned on radio, but permitted on TV.                                         |                   |
| Indonesia:                          | *3) Advertising of tobacco is permitted by private radio stations, but banned on government TV and radio.   |                   |