Smoking and tobacco seen through the statistical lens

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1. Introduction

This paper reviews the results of the survey about smoking and use of moist snuff, domestic consumption of smoking tobacco and moist snuff, prices, taxes and attempted smuggling etc. in Sweden, Norway, Denmark and Finland, 1970 - 1997. No attempt has been made at testing hypotheses about any causal relationships that may or may not be evident in the statistics.

2. Definitions adopted and source material used

The real tobacco content of a Cigarette is calculated at 0.65 grams, and of a cigars or cigarillos at 2 grams. Needless to say, this method of measurement has drawbacks when analysing time series data because the composition of tobacco in manufactured products is different over the years.

For practical reasons the more convenient statistics of “tax paid sales for retailing” have been used in estimating domestic consumption of tobacco products instead of the idealistic and more desirable “production plus imports less exports plus/minus statistical adjustments”. Incidentally, this is the best-practised method of estimating domestic tobacco consumption in national accounting in most countries. The domestic consumption estimates on a per capita basis are obtained by dividing the annual tax paid sales figures by the population aged 15 + as at year-end. This is a useful indicator in measuring the overall impact of tobacco intake on the health of the reference population.

Daily smokers are defined as smokers who have smoked any kind of smoking tobacco at least once a day. Smoking prevalence refers to the frequency rate of daily smokers and is expressed as a percentage. The number of individuals in the population who have smoked any kind of smoking tobacco at least once a day is divided by the reference population (smokers as well as non-smokers) and multiplied by 100. Daily users of moist snuff refer to the percentage of the reference population who use moist snuff at least once a day.

The estimates of smoking prevalence and the daily users of moist snuff are based on sample surveys of self-declared replies to questionnaires. The surveys give reliable results of the situation surveyed but they are not designed to reveal information about the behavioural patters of the respondents. The results are expressed as frequency rates of smoking and use of moist snuff in the reference population and its sub-groups e.g. age, sex, socio-economic status, nationality etc.

3. The highlights of the Nordic statistics of smoking 1970-1997

Smoking prevalence among adults in Sweden has reached a record low 19.3 %. Thus, Sweden becomes the first country in the world to break the World Health Organisation (WHO) targeted goal of reducing daily smoking to less than 20 % before the end of this decade. The record breaking 19.3 % smoking prevalence for Sweden (age group 16-84) in 1997 can be compared with 24 % for Finland (age group 15-64), 32 % for Denmark (age group 13+) and 34 % for Norway (age group 16-74). The breakdown by sex; 22.2 of women and 16.8 % of men in Sweden were daily smokers. The corresponding figures for Finland was
20 for women and 30 % for men. Roughly 33 % of adult males and females are daily smokers in Norway and Denmark. Daily smoking rates are shown in figures 1-2.

![Figure 1 Smoking prevalence 1997, women …](chart1.png) ![Figure 2 … and men](chart2.png)

Moist snuff usage has reached new heights in Sweden. It is now higher than cigarette intake measured in terms of real tobacco content. The decline in per capita cigarette tobacco intake was from 1061 grams in 1970 to 676 grams in 1997 whilst moist snuff intake per capita increased from 405 grams in 1970 to 760 grams in 1997. Seen in a different way, 19 % of adult males (aged 16-84) in Sweden used moist snuff on a daily basis in 1997 compared with 17 % in 1970 whilst only 17 % of adult males were daily smokers in 1997 compared with 29 % in 1970.

The statistics convey two significant changes: Firstly, the decline in smoking prevalence among adults in Sweden to a record low 19.3 % is a noteworthy achievement. Secondly, the shift in demand from cigarette smoking to moist snuff among adult males in Sweden needs to be underlined.

4. Concluding remarks

One of the main aims of this research was to check the overall quality of the data as seen through the statistical lens, and to raise questions that would require a more research in the future. Statistical diversity is shaped by national requirements, political needs and costs involved in compiling. From this diversity one has to create harmonised concepts that are relevant to the subject area before gathering data. Smoking is an important area of research that requires statistical attention. After all, the aim of statistics is to provide timely, reliable and comparable data.

References


FRENCH RESUMÉ

Cette étude fait un compte-rendu des résultats d'une enquête concernant l'usage du tabac à fumer et à mâcher, la consommation intérieure du tabac à fumer et à mâcher, les prix, les impôts, les tentatives de contrebande etc. en Suède, Norvège, Danemark et Finlande, 1970-1997. On ne s'est pas efforcé de vérifier les hypothèses concernant toute relation causale pouvant ou non apparaître dans les statistiques.