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# Media consumption and social stratification in the Nordic countries

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## Introduction

An interpretation often given by social researchers is that the Nordic societies are relatively weakly structured in terms of gender, income and class. A constant observation is that the Nordic countries show relative equality compared to other European nations, particularly in terms of poverty and other forms of economic inequality (e.g. Esping-Andersen 1990; Ferrera 1996; Norlund 2003). Also the key social institutions, such as the educational system, the labour market and income distribution systems, are considered to be by and large identical across the Nordic societies. In general, the countries are often seen as the welfare societies with universal rights of social benefits. Regarding these kinds of notions, the structural differences in the patterns of consumption and lifestyle are also expected to be small in comparison with many other countries (e.g. Katz-Gerro 2002; Räsänen 2006; Virtanen 2006).

This paper examines the patterns of media consumption in the Nordic countries. It is asked to what extent the Nordic countries, which have been characterised as the world's leading information societies, show similar patterns of media use with each other. The purpose is also to estimate the differences in the population level. Research interest is in television watching, radio listening, newspaper reading, and the use of the internet. The data consists of the Danish, Swedish, Norwegian and Finnish sections of the European Social Survey 2004 (ESS 2005).

First, research findings regarding socio-demographic and economic features of media consumption will be shortly reviewed. Research questions are dealt next. This is followed by the presentation of data, variables, and methods of analysis. The empirical part of the paper is divided into descriptive and explanatory sections. In conclusions, it is discussed whether the consumption of the new information and communication technology (ICT) is developing a similar mark of higher social status as in consumption connected with reading and other cultural activities. The results also suggest that there are some recognisable national characteristics attached to media consumption patterns.

## Structural features of media use

Preceding research literature indicates that media use patterns connect with the differences by population groups. These differences are naturally affected by a number of factors. However, the key socio-demographic variables included in the empirical analyses of mass media and communication technology use are gender and age. In addition, there are important socio-economic factors associated with all types of media and consumer technology use. Income and education can be regarded as the most significant variables.

Gender constructs the elementary framework for many consumer practices. In most studies, men are found to spend more time and money on consumer technologies than women (e.g. Henderson et al. 2002; Rice & Katz 2003; Wilska 2003). Following this, the use of technological appliances has been regarded as a 'masculine' rather than a 'feminine' activity. Similarly, the typical course of an individual's life is built to a large extent around age. A number of studies have shown that the mass media and various other consumer technologies are used differently by people of varying ages (e.g. Hargittai 1999; Cummings & Kraut 2002; Vihalemm 2006). For example, older people spend more time watching television than younger people (e.g. Gershuny 2000; Niemi & Pääkkönen 2002). Young people, on the other hand, are often potential early adopters of new technologies (e.g. Wilska 2003; Räsänen & Kouvo 2007).

Income is a relevant explanatory factor because using different technologies costs money. One constant finding in earlier studies has been that a high income is related to more frequent ICT use and a preference for more diverse media content (e.g. Chan & Goldthorpe 2007; Hendriks Vettehen et al. 2004). Education is relevant on similar grounds; better-educated individuals are

often better equipped to consume various media contents than those with less education (e.g. Attewell 2001; Parayil 2005; Räsänen 2006). A high level of education has also been associated with frequent use of various technological devices such as computers and mobile phones (e.g. Henderson et al. 2002; Robinson et al. 2002).

### Research questions

The Nordic countries share relatively similar infrastructures in terms of print and electronic media. Particularly the recent development of the ICT infrastructures has been identical across the countries. For instance whereas before the early 1990s there were either monopolies or only a few operators in each country, ten years later there were already many players within telecommunications, several network operators and internet service providers (Nordic Information Society Statistics 2002; 2005). Together with the vigorous economic growth during the late 1990s these changes have resulted a rapid increase in the supply of mobile phone and internet services. Moreover, the Nordic countries also started the establishment of digital television services in the late 1990s and early 2000, a way before most of the European countries.

*First, it is feasible to ask to what degree the countries show similar profiles in the use of different media.*

In addition to relatively similar ICT and media infrastructures, the Nordic countries are often seen as the welfare societies of social and economic equality. In comparison with the other European countries, a common feature for the Nordic countries is the strong interplay of state policies and other social institutions, such as the labour market and income distribution system. In this way the effective protective measures against poverty, universal social benefits and the prevalence of public over private welfare provisions are considered as their distinct features (e.g. Esping-Andersen 1990; Ferrera 1996). Following the principle of universalism, also economic and social inequalities within the societies are believed to be relatively small.

*Second, it is motivating to evaluate whether the countries show weak structural inequalities, measured as economic and socio-demographic differences in the media use patterns.*

According to many, one of the most important consequences of the diffusion of the new ICTs is that traditional forms of the mass media are at least partly being replaced by more advanced and more 'personalised' systems, designed to meet the needs of individual consumers (e.g. Fidler 1997; Cummings & Kraut 2002). In other words, newspaper and television for example can no longer be considered the primary sources of information and entertainment. Particularly the internet has become an important medium in these respects. It is not surprising that in recent time diary studies, a decline in watching television and other traditional mass media activities has been found among frequent internet users (e.g. Robinson et al. 2002; Gershuny 2003). As a main activity, also radio listening is continually losing its share compared to time spent on other media. At least in some population groups this is due to the increasing consumption of music via hand-held music players, mobile phones, and computers.

*Third, it is interesting to address how differentiated the media consumption patterns are between the economic and socio-demographic groups, and between the countries.*

The remaining sections of this paper deal with the effects of economic and socio-demographic factors on frequency of television watching, radio listening, newspaper reading, and the use of the internet. In order to examine how the patterns vary across the four countries, both cross-country and population-level differences have to be taken into consideration.

## Data and methods

This study focuses on comparing the differences in media use between population groups in Denmark, Sweden, Norway and Finland. The data employed in this study are the ESS survey data, collected by face-to-face interviews in 2004 (N=7211). The data represent the residential populations of these countries aged 15 and older. The total number of cases ranges from approximately two thousand cases from each country (see ESS 2005).

The frequencies of media use are used as the dependent variables. These variables include measures on a total of four different media: television, radio, newspaper, and the internet. Along with the respondents' country of residence, age, gender, education, and income are used as the independent variables. A detailed description of the original measures and the coding procedure is given in Appendix.

Age and gender are measured as respondent's year of birth and sex. Age is categorised into four groups reflecting a broad classification of phases distinguished in adult lives. In this way, the variable enables us to observe a possible non-linear impact of age cohorts or generations.

Education is measured as the duration of education in years. Despite the fact that this variable does not report degree earned or level of education, it provides a congruent measure since educational systems differ slightly from one Nordic country to another. The variable was categorized into four groups.

Income is measured as the income of household and it is based on subjective estimates of all wages and salaries. A discrete variable of twelve income brackets is included in the data. However, a variable that divides the respondents into households earning less or more than a thousand Euro a month is used in the analyses.

The methods of analysis include cross-tabulations (descriptive analysis) and the logistic regression models (explanatory analysis). Throughout the analysis, the multinomial logistic regression (MLR) procedure is utilised (e.g. Tabachnick and Fidell 2001, 521-523). The effects of the independent variables in the models are presented with the odd ratios ( $Exp\beta$ ). The odds ratio is the probability of being in one group divided by the probability of being in the other group. It indicates the increase (or decrease if the ratio is less than one) in the odds of being in the examined outcome category when the value of the independent increases by one unit. The statistical significances of the models are indicated in the tables by chi-square statistics ( $\chi^2$ ). Also the pseudo-coefficients of the determination, or explanation proportions, of the models are reported (Nagelkerke Pseudo  $R^2$ ).

As the ESS authorities suggest, the 'design' weights that correct the sampling differences between the countries are applied in each analysis (see ESS 2007 for details).

## Descriptive analysis

The first task in the analysis was to distinguish different types of media users from each other. Different user groups were approached with the use of three categories: 'non-users', 'infrequent users', and 'frequent users'. The first group consists of those respondents, who do not report using the given medium at all. The second consist of those who use the certain medium relatively seldom or who use it only for a short period at a time. Eventually, there are those who use the given medium often or who spend much time with it.

In general, it is known that varying amounts of time are devoted to different types of media. For example, people spend more than two hours a day watching television across Europe and US,

while time spent on newspaper and magazine reading is less than one hour (e.g. Gershuny 2000; Niemi & Pääkkönen 2002; Robinson et al. 2002). In addition, the original measures in ESS data are not identical with each other. This is why infrequent and frequent media users were classified by using slightly different criteria, depending on the medium in question (see Appendix).

Table 1 shows the proportions of media users by country. At first glance, we can observe that the overall patterns of television and radio use are similar across the countries. There is a small proportion of non-users in each country, but most respondents can be classified into the categories infrequent or frequent users. Concerning both media types, the proportion of frequent users is highest in Denmark. The Swedish respondents report the lowest proportion of frequent television watching and radio listening. On the other hand, newspaper reading and the internet use display somewhat different profiles. The share of those who do not read newspapers is highest in Denmark. The proportion of the internet non-users is highest in Finland. Norway has the highest share of frequent newspaper readers, Denmark the highest of frequent internet users.

<Table 1>

The findings indicate that there are certain cross-country differences in media use, which should be taken into account in the further analyses. The proportion of the frequent internet users is over 50 percent in each country, except for Finland. It thus seems that Finland represents a slightly less developed environment compared to other Nordic countries when it comes to internet use. In principle, this observation is consistent with the official statistics (e.g. Nordic Information Society Statistics 2005; Eurostat 2005). It is also interesting to address in more detail the structure of newspaper reading particularly in Denmark and Norway.

The differences in media use patterns among population groups were examined next. Table 2 shows variations by gender, age, education and income in all countries. The first observation is that the differences by gender are small in general. However, the use of the internet provides an exception. Male respondents appear to be considerably more often frequent internet users compared to females, and less often non-users. This finding is consistent with numerous studies examining the interplay between gender and ICT-use (Dutta-Bergman 2005, 104-105; Räsänen 2006; Wilska 2003). The fact that there is more internet material targeted at male users, such as pornography or sports, may partly explain the observed gender disparities.

<Table 2>

Differences by age indicate that particularly the proportions of frequent media use vary considerably between age groups. Newspaper reading and the internet use reveal the strongest differences. Older people are more likely to be frequent newspaper readers and, at the same time, much less likely to be frequent internet users, compared to younger people. The difference in television watching is considerable particularly between over 60-years-olds and other respondents. Radio listening does not show strong variation between age categories. Otherwise, the findings show that the patterns of media use are built to a large extent around age. A number of preceding studies have found that young and old people use the mass media and ICTs differently (Hendriks Vettehen et. al 2004, 421; Vihalemm 2006). As expected, older people are watching television more frequently than younger people. Young people, on the other hand, are often the most likely to be regular internet users.

Also educational attainment has considerable impact on media use. The strongest impact can be observed in the use of the internet. Those with many years of full-time education completed are less likely to be non-users than others, and more likely to be frequent users. Regarding other

media use variables, differences appear to be more ambiguous. Those with less educational attainment are watching television and listening to radio more frequently than others. Newspaper reading is not influenced strongly by education. Still, those who spend much time on newspaper reading are more likely to have completed less than nine years of education. At the same time, however, those who do not read newspapers at all are the least likely to be found among the most educated respondents.

Finally, income differences show that both non-use and frequent use patterns vary between income groups. Income has the strongest effect on the internet use, and the weakest on radio listening. Internet is less often used among those who live in households that earn less than one thousand euro a month. Television and newspaper shows the opposite; respondents from households that earn less spend time more time on these media. However, the effects of most of the other dependent variables are clearly stronger in this respect. Despite this, the findings point out that media use displays differences between the poor and well-off individuals.

Overall, the differences in the internet use and newspaper reading provide interesting information, but otherwise findings can be held fairly predictable. This means that the results are consistent with the existing research literature.

The selected socio-demographic and economic factors are connected with the media use patterns in most instances. Given the results, media use is a relevant social issue especially when it connects to the varying use frequencies. With the exception of the internet use, there are few respondents in the non-user categories. It is also likely that the variation indicated by Table 2 can be explained more sufficiently by utilising several independent variables at a time. Next, the distribution of frequent use patterns among the Nordic consumers will be examined in more detail.

#### Explanatory analysis

In the further analysis, logistic regression models were employed on the combined data that includes all cases from each country. Models are used to predict an outcome of being a 'frequent user' from a set of independent variables. In order to do so, categories 'non-users' and 'infrequent users' were combined. This resulted in dichotomous dependent variables.

Table 3 shows the adjusted models for frequent television, radio, newspaper, and the internet consumption. Regarding television watching, all independents appear to be significant, except for gender. It is clear that education and age provide strong predictors, while income has somewhat weaker effect. The odds ratios by age indicate that over 60-years-old respondents are twice as likely to watch television frequently compared with other age groups. Differences between educational categories point out that those who have completed less than nine years of full-time education are the most likely to watch television frequently. The most educated respondents are nearly three times less likely of being among that user group. Respondents with low household income are also more likely to watch television more frequently than others (with the odds of 1.4). The model explains only nine percent of total variance though.

<Table 3>

Radio listening, on the other hand, is not strongly affected by any of the independents. Only age and education remain statistically significant. Respondents in the youngest and the second youngest age group are less likely to listen radio frequently when compared with the older respondents. The effect of education is significant only between the most and the least educated respondents. The respondents in the former category are about 1.7 times as likely to listen to the

radio frequently compared to the latter. Despite the differences by age and educational categories, this model has practically non-existent explanatory power (three percent).

Newspaper reading shows more interesting differences. In fact, all independent variables remain significant in the model. Effect of income, however, is relatively weak indicating that respondents with low income are likely to spend more time on newspaper reading than others. The effect of gender shows that males are almost 1.5 times more likely to read newspapers frequently than females. Educational differences appear to be systematic since the likelihood of frequent newspaper reading ascends gradually from the lowest income category to the second lowest, and so on. In this sense, newspaper reading shows an opposite 'cultural pattern' of consumption compared with television watching. In spite of that, it is evident that age has clearly the strongest impact here. Under 30-years-old respondents are 14 times less likely to read newspapers frequently when compared with over 60-years-olds. The second youngest age group has approximately eight times smaller odds of belonging to frequent category compared to the oldest. The model results with a satisfactory explanatory share of total variance (17 percent).

The last model shows the effects of independent variables on frequent internet use. Obviously, the strongest differences can be attributed to age and income. Under 30-years-olds are about twelve times more likely than over 60-years-olds to be frequent users. The most educated respondents, on the other hand, are 14 times more likely to belong to that category compared with the least educated. Results by gender indicate that men are 1.7 times more likely to be frequent internet users than women. Income difference is also interesting; respondents in the lowest income category are twice as less likely to be frequent users. The model explains as much as 38 percent of total variance.

The main-effect models were applied in order to compare the effects of economic and socio-demographic variables. On the basis of these results, we can conclude that the frequency of media use can be explained by the variables selected. In addition, the effects of independent variables appear to be different when different types of media are compared with each other. In general, age and education can be held as strong sources of variance.

However, the cross-country differences observed in Table 1 were not taken into account. In Table 4, two-way interactions between independent variables and country are displayed. The models are adjusted for the main-effects of economic and socio-demographic variables. The table reports the significances based on chi square statistics only.

<Table 4>

As the statistics show, the country interacts with income when explaining television watching. Age has an interaction with newspaper reading, and gender and education with the internet use. Investigation of radio shows that there are not any significant interactions. This means that regarding radio listening, there are no differences in the effects of economic and socio-economic variables between the countries.

A closer investigation of the parameters (not shown in Table 4) revealed that respondents earning less than a thousand Euro a month were in fact slightly more to watch television frequently in Finland when compared with other countries. However, the effect is barely significant (at  $p < 0.05$  level). Regarding newspaper reading, it was found that 30-44-years-old Finnish respondents are less likely than other 30-44-years-olds to be frequent newspaper readers. Despite the fact that the effect is not very strong, the finding is rather interesting in the context of Nordic societies. The analysis of internet use revealed two significant interactions. The interaction between gender

and country revealed that in Finland male users are less likely to be frequent users compared to other countries. This finding shows that while the proportion of users is lowest in Finland, the gender difference is not as strong as it is elsewhere.

The interaction between education and country, on the other hand, revealed that the Danish respondents with less than 9 years of education are more likely to be frequent internet users compared to same group in other countries. This indicates that education is weaker determinant of internet use in Denmark. It is thus reasonable to notice that there are certain cross-country differences in the strengths of some of the socio-demographic variables. Some of these interactions require special attention in conclusions.

## Conclusions

When trying to define and understand consumption patterns, sociologists refer to such factors as individuals' age, education, income level, and so on. It is believed that these kinds of variables can predict consumption behaviour more effectively than various situational, psychological or need-based factors. Naturally, at the most abstract level, there are certain collective social norms and fashions that may lead consumers to consume in particular ways. But in order to understand the explanatory mechanisms behind consumption patterns, we typically draw to the more basic views on classes, social stratification, and structural effects.

The differences of cultural 'appreciation' or 'knowledge' adopted by certain educational or occupational classes are normally held as effect-mechanisms explaining the findings. Similar interpretations stressing some sort of boundary conditions may also be given in relation to age and gender. The consumption patterns of men and women and of people of different ages can reflect certain role expectations, for instance. In comparison, the effect-mechanisms related to income are somewhat more straightforward; the available economic resources simply control one's expenditure and the planning of future expenditure.

This paper focused on the differences in the media use patterns in the Nordic countries. The aim was to examine whether the basic social structures and the inequalities based on media use were interrelated. One of the key findings was that income strongly affects internet use frequencies in all countries. It is also clear that the patterns of internet use are strongly connected with youth. Older age groups are less likely to access the internet frequently. Television watching and newspaper reading, on the other hand, show the opposite trend: older people spend clearly more time on these media types compared to younger people. Radio listening appeared to be the only variable that was not explained effectively by any of the background variables.

In general, the disparities by population groups are important in the light of prevailing socio-demographic structures in the Nordic societies. The results suggest that certain media use patterns are introducing new types of structural inequalities. Particularly the role of the internet can be emphasised here. The analyses showed that the educational disparities in the internet use are similar with the disparities attached with newspaper reading. However, the effect of education on the internet use is clearly stronger. Newspaper reading is explained sufficiently by age. In this sense the new ICTs can be thought to reflect the identical structural conditions that are reflected by the more traditional forms of cultural consumption.

The results also indicated that the Nordic countries show differences in the examined media use patterns. In addition, variation was found in some of the socio-demographic effects between the countries. From the comparative perspective, the results thus suggest that the Nordic countries are not necessarily as homogenous with each other as many social researchers believe.

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<Appendix>

Table 1 Proportions of media users by country

	All (N)	Country (N)			
		Denmark	Sweden	Norway	Finland
<b>Non-users</b>					
<i>Television</i>	2,1% (148)	2,0% (29)	1,6% (31)	1,4% (25)	3,1% (63)
<i>Radio</i>	16,8% (1208)	12,0% (178)	20,5% (389)	13,1% (230)	19,9% (402)
<i>Newspaper</i>	10,0% (723)	23,1% (343)	8,3% (161)	4,6% (81)	6,8% (138)
<i>Internet</i>	32,2% (2319)	30,2% (447)	30,2% (558)	29,4% (517)	37,9% (767)
<b>Infrequent users</b>					
<i>Television</i>	60,6% (4370)	52,4% (779)	66,9% (1303)	66,4% (1080)	59,8% (1208)
<i>Radio</i>	40,7% (2938)	35,1% (521)	42,4% (862)	44,5% (784)	39,9% (807)
<i>Newspaper</i>	74,4% (5365)	63,9% (949)	78,7% (1533)	75,8% (1334)	76,6% (1549)
<i>Internet</i>	16,9% (1217)	12,6% (186)	19,7% (384)	14,8% (260)	19,1% (387)
<b>Frequent users</b>					
<i>Television</i>	37,4% (2698)	45,7% (679)	31,5% (614)	37,2% (655)	37,1% (750)
<i>Radio</i>	42,5% (3065)	52,9% (784)	37,1% (722)	42,4% (746)	40,2% (813)
<i>Newspaper</i>	15,6% (1126)	13,0% (193)	13,0% (253)	19,6% (345)	16,6% (335)
<i>Internet</i>	51,0% (3675)	57,3% (849)	50,1% (976)	55,8% (982)	42,9% (868)

Source: European Social Survey (ESS 2005).

Table 2 Proportions of media users by different population groups

	Gender (N)		Age (N)				Education (N)				Income (N)	
	Men	Women	<30	30-44	45-60	>60	>15	13-15	9-12	<9	<1000	>1000
<b>Non-users</b>												
<i>Television</i>	2,1 (76)	2,0 (72)	2,9 (44)	1,8 (35)	1,7 (33)	2,0 (36)	2,8 (45)	1,6 (31)	1,7 (46)	2,5 (25)	4,6 (33)	1,6 (97)
<i>Radio</i>	15,3 (544)	18,2 (664)	23,2 (351)	16,3 (312)	13,6 (264)	15,2 (281)	15,8 (255)	14,9 (283)	18,3 (486)	17,3 (173)	23,2 (167)	15,5 (920)
<i>Newspaper</i>	9,1 (326)	10,9 (397)	17,3 (262)	11,3 (216)	6,6 (129)	6,3 (116)	7,7 (124)	10,2 (195)	10,7 (285)	10,9 (109)	15,6 (112)	8,6 (511)
<i>Internet</i>	29,2 (1040)	35,1 (1279)	8,2 (124)	14,1 (268)	29,6 (576)	73,3 (1350)	8,9 (144)	19,4 (370)	36,6 (973)	80,9 (811)	51,9 (374)	29,2 (1732)
<b>Infrequent users</b>												
<i>Television</i>	60,4 (2153)	60,7 (2217)	62,7 (950)	69,1 (1320)	66,4 (1292)	43,8 (808)	74,0 (1179)	64,6 (1230)	57,5 (1531)	39,6 (397)	46,1 (332)	62,7 (3720)
<i>Radio</i>	41,9 (1491)	39,7 (1447)	41,5 (628)	44,4 (849)	41,3 (803)	35,7 (658)	50,6 (818)	41,7 (794)	36,9 (982)	33,6 (337)	35,6 (256)	41,7 (2472)
<i>Newspaper</i>	73,3 (2611)	75,5 (2754)	78,5 (1187)	81,2 (1551)	78,4 (1527)	59,7 (1100)	76,0 (1229)	76,2 (1450)	75,6 (2013)	65,9 (662)	64,9 (467)	76,0 (4507)
<i>Internet</i>	15,0 (533)	18,8 (684)	16,9 (256)	18,6 (356)	21,1 (410)	10,6 (195)	14,4 (233)	19,5 (372)	19,7 (524)	8,5 (85)	14,9 (107)	17,3 (1024)
<b>Frequent users</b>												
<i>Television</i>	37,5 (1335)	37,3 (1363)	34,3 (520)	29,1 (556)	31,9 (622)	54,2 (1000)	23,2 (376)	33,8 (643)	40,8 (1085)	57,9 (581)	49,3 (355)	35,7 (2116)
<i>Radio</i>	42,9 (1572)	42,1 (1538)	35,3 (533)	39,2 (750)	45,1 (878)	49,1 (904)	33,6 (544)	43,4 (826)	44,8 (1193)	49,1 (492)	41,3 (297)	42,8 (2537)
<i>Newspaper</i>	17,6 (627)	13,7 (499)	4,2 (64)	7,5 (144)	14,9 (291)	34,0 (627)	16,4 (265)	13,6 (258)	13,6 (363)	23,2 (233)	19,6 (141)	15,4 (914)
<i>Internet</i>	55,9 (3463)	46,2 (3648)	74,9 (1133)	67,3 (1286)	49,3 (960)	16,1 (296)	76,7 (1241)	61,0 (1162)	43,7 (1161)	10,7 (107)	33,2 (239)	53,5 (3175)

Source: European Social Survey (ESS 2005).

Table 3 Frequent media use in Nordic countries, logistic regression models

Main effects	Television, Exp $\beta$	Radio, Exp $\beta$	Newspaper, Exp $\beta$	Internet, Exp $\beta$
Gender, $\chi^2$	0,0 (ns)	1,1 (ns)	27,2***	78,6***
Male	(ns)	(ns)	1,45	1,68
Female (a)	1	1	1	1
Age, $\chi^2$	116,1***	49,8***	626,5***	770,4***
<30 years	0,52	0,58	0,07	12,38
30-44 years	0,48	0,73	0,12	5,86
45-60 years	0,49	(ns)	0,28	3,37
>60 years (a)	1	1	1	1
Education, $\chi^2$	142,9***	57,1***	47,4***	651,5***
>15 years	0,36	0,62	2,21	14,04
13-15 years	0,59	(ns)	1,71	5,85
9-12 years	0,76	(ns)	1,32	2,90
<9 years (a)	1	1	1	1
Income, $\chi^2$	13,0***	2,0 (ns)	7,0**	46,4***
<1000 Euro/month	1,36	(ns)	1,35	0,49
>1000 Euro/month (a)	1	1	1	1
$\chi^2$ (b)	458,7***	132,9***	704,0***	2189,9***
df	8	8	8	8
Pseudo $R^2$	.09	.03	.17	.38

Note: \*\*\* =  $p < 0.001$ ; \*\* =  $p < 0.01$ ; \* =  $p < 0.05$ ; (ns) =  $p > 0.05$ ; (a) = reference category; (b) = indicates the difference between the final model and a reduced model.

Source: European Social Survey (ESS 2005).

Table 4 Interactions between frequent media use and country, logistic regression models

Main effects + interactions	Television × country	Radio × country	Newspaper × country	Internet × country
Gender, $\chi^2$	4,8 (ns)	1,4 (ns)	0,62 (ns)	12,4**
Age, $\chi^2$	8,6 (ns)	12,7 (ns)	21,9**	7,6 (ns)
Education, $\chi^2$	11,6 (ns)	5,7 (ns)	10,8 (ns)	16,0*
Income, $\chi^2$	9,9*	3,9 (ns)	1,2 (ns)	1,7 (ns)
$\chi^2$ (a)	608,6***	264,5***	792,2***	2279,6***
df	35	35	35	35
Pseudo $R^2$	.12	.05	.19	.39

Note: \*\* =  $p < 0.01$ ; \* =  $p < 0.05$ ; (ns) =  $p > 0.05$ ; (a) = indicates the difference between the final model and a reduced model.

Source: European Social Survey (ESS 2005).

## APPENDIX

### Measures, original questions presented in the questionnaires, and the coding of variables

	Original question	Coding	
DEPENDENT MEASURES	Television watching	On an average weekday, how much time, in total, do you spend watching television?	1=No time at all, 2=Less than ½ hour; ½ hour to 1 hour; Up to 1½ hour; Up to 2 hours; 3=Up to 2½ hours; Up to 3 hours; More than 3 hours.
	Radio listening	On an average weekday, how much time, in total, do you spend listening to the radio?	1=No time at all, 2=Less than ½ hour; ½ hour to 1 hour; 3=Up to 1½ hour; Up to 2 hours; Up to 2½ hours; Up to 3 hours; More than 3 hours.
	Newspaper reading	On an average weekday, how much time, in total, do you spend reading the newspapers?	1=No time at all, 2=Less than ½ hour; ½ hour to 1 hour; 3=Up to 1½ hour; Up to 2 hours; Up to 2½ hours; Up to 3 hours; More than 3 hours.
	Internet use	How often do you use the Internet, the World Wide Web or e-mail – whether at home or at work – for your personal use?	1=Never; No access at home or at work, 2=Once a week; Several times a month; Once a month; Less than once a month, 3=Every day; Several times a week.
INDEPENDENT MEASURES	Country	Are you citizen of [country]?	Yes: 1=Denmark, 2 =Sweden, 3=Norway, 4=Finland.
	Education	How many years of full-time education have you completed (including compulsory/mandatory years of schooling)?	1=0-8 years, 2=9-12 years, 3=13-15 years, 4=Over 15 years.
	Age	Respondent's year of birth	Calculated from the year of birth: 1=15-29 years, 2=30-44 years, 3=45-60 years, 4=Over 60 years.
	Gender	Sex of respondent	1=Male, 2=Female.
	Income	If you add up the income from all sources, which of the following describes your household's total net income (if you don't know the exact figure, please give an estimate)?	Dichotomized from a twelve-point ordinal scale: 1=Less than 1000 Euro a month, 2=Over 1000 Euro a month.

Source: European Social Survey (ESS 2005).