5   Time spent on television in European countries

Cross-national comparisons and explanations

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This study aims to explain the variation in time spent on watching television in 15 European Union countries, using determinants defined at the individual level, and characteristics defined at the national level, such as the number of channels and nature of the television supply. The results of the multi-level analysis show that the number of channels in countries has no effect on time spent on television. Yet, the more diverse the programme supply on public broadcasting channels in different countries, the less time people spend on watching television. However, this relation decreases when more commercial channels are available to watch. This suggests that EU citizens, having commercial channels as alternatives, avoid a diverse programme supply in favour of commercial programme supply.

5.1   Introduction

The end of the nineteen-eighties saw a rapidly changing television landscape, in the Netherlands as well as in other European countries. In the Netherlands, the expansion of broadcasting time and programme supply coincided with an increase in the average time spent on television. The introduction of daytime television has also resulted in an increase of time spent on television (Huysmans & De Haan, 2004).

In other European countries, the number of available networks increased through distribution of television signals through satellite (Eurostat, 2003). This form of distribution offers, aside from the networks specifically aimed at the country itself, a large amount of free-to-air channels (European Audiovisual Observatory, 2003b). Differences in television landscapes and time spent on watching television appear to exist between European countries (Huysmans & De Haan, 2004; European Audiovisual Observatory, 2003b, 2006). Figure 5.1 shows that in many European countries the time spent on watching television has increased over the last decade.

Given these differences, the question arises whether a larger and distinct television supply is related to cross-national differences in the time people spend on television. To date there are some case studies of certain countries available (Becker & Schönbach, 1989; D'Haenens & Saeys, 2007). These studies merely take cross-national differences
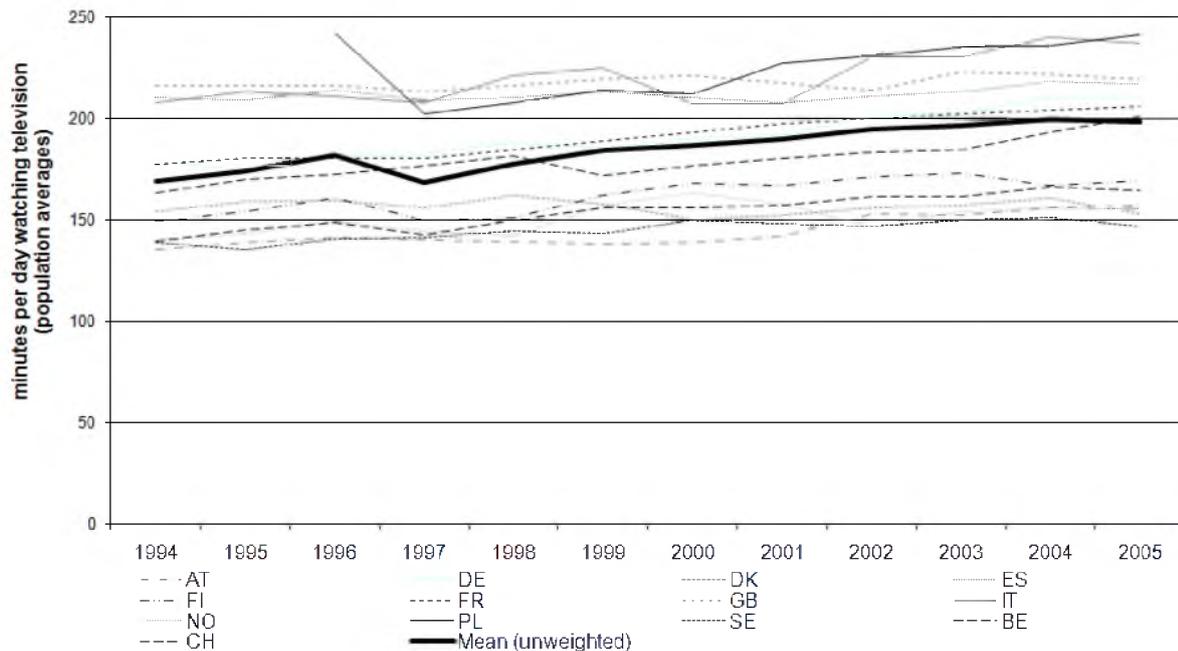
Figure 5.1 Time spent on watching television in European countries
Source: European Audiovisual Observatory (2006)

in the nature of the media landscape into account, in the qualitative sense. This study focuses on a systematic comparison of a large number of EU countries. Given the above mentioned outline, we arrive at the following research questions:

> Research Question 1: To what degree does the time spent on television differ between European countries?

> Research Question 2: Which cross-national characteristics of the television supply account for the degree of time spent on television?

> Research Question 3: Which individual characteristics, aside from the cross-national differences, account for the degree of time spent on television?

5.2   Theories and hypotheses

5.2.1   Contextual explanations

Research on (the explanations of) cross-national differences in time spent on media is rather meager. Consequently there are few contextual or macro-theoretical explanations. In this study the focus will be on the nature and composition of the television landscape and the television programme supply.

  In liberalised economic markets, demand and supply are supposed to concur to a large extent. Thus it seemed that in the Netherlands, the arrival of new channels provid-

ing more choices to the television audience, possibly with a better fit to specific demands, lead to a (sudden) rise in the time spent on television (Knulst, 1999). The rise in average time spent on television was explained by the expansion of the broadcasting time through more channels and the introduction of daytime television in the Netherlands. This observation seems to hold for other European countries as well (European Audiovisual Observatory, 2006; IP, 2006). When these longitudinal findings are translated to explain cross-national differences under the general proposition that there is a certain degree of concurrence between supply and demand, the hypothesis is as follows:

> Hypothesis 1: The more channels focus on the country in question, the more time people in the country spend on television.

However, television markets in European countries are not completely liberalised. The majority of the European countries have a dual broadcasting system, within which both commercial and public channels are active. The objectives of these commercial channels differ from those of public channels. Commercial channels' most important objective generally is maximising financial profit (Jacobson & Andréosso-O'Callaghan, 1996). Public broadcasting channels, however, mostly have social and cultural objectives. Therefore, providing impartial information, education, public debate, strengthening social cohesion and diversity are (perceived as) important objectives (Harrison & Woods, 2001).

In this framework, we can distinguish two models and two types of audience: the 'market model' and the 'public policy' model (Hellman, 2001). In the market model 're-flective diversity' plays a central role: the programme supply of commercial channels is supposed to be fine tuned as much as possible to the aggregated demand of consumers. In this model, the audience is regarded as a market (McQuail, 1997): commercial broadcasting companies, therefore, strive as much as possible for correspondence between the demand of the general public and their supply. This implies that where relatively more commercial channels are available in a country, the demand is better served. The hypothesis is thus as follows:

> Hypothesis 2: The higher the percentage of commercial channels in a country, the more time people in the country spend on television.

In the public policy model, public service broadcasting is regarded as aiming for social, political and cultural citizenship through the universal provision of quality, services and diversity of output, reflecting political, social and cultural diversity in society and foster social cohesion and inclusion (Harrison & Wessels, 2005; Van Cuilenburg & McQuail, 2003). Although this model has been under pressure from commercialisation in the market, public broadcasting companies still depart from a normative question: what programmes should be offered to the public? The preliminary answer to this question is based on programme regulations formulated for public broadcasting organisations. Criteria are, among others, equal access and the emphasis on distinction, which leads to a distinct type of supply (McQuail, 1992). In the public policy model it is therefore possible that a specific supply of programme types occurs without a corresponding demand. In this way, minorities are ensured of sufficient choices from the programme supply. This brings about a specific programme supply, tailored to the demand of specific

minorities for which it is intended. Furthermore, this minority programming is meant to stimulate public debate because people belonging to different groups come into contact with other types of programmes. This is called 'open diversity' (Van der Wurff, 2004, 2005; Van der Wurff, Van Cuilenburg & Keune, 2000).

Even though the expectation is that public broadcasting companies generally have a more diverse supply than commercial broadcasting companies, which is at least true for the Netherlands (Dutch Media Authority, 2004), public broadcasting companies can nonetheless differ between countries in the degree of open diversity of the programme supply. This may imply that the programme supply corresponds less with the demand of certain (larger) groups within the audience which, as a consequence may not (strongly) be interested in that specific programme supply. Then, it follows that in countries where public broadcasting companies offer a more diverse supply (open diversity), containing more programmes for specific minorities that are of less interest to other minorities, people in such countries spend less time on television. The hypothesis is thus as follows:

> Hypothesis 3: The larger the open diversity of the programme supply of public channels in a country, the less time people in the country spend on television.

Regulatory requirements for open diversity often puts public broadcasting companies in a difficult situation. After all, aside from the objective of a diverse supply, public broadcasting companies also often have the objective of reaching an audience of a certain size (Coppens & Saeys, 2006). Important programme categories that draw viewers to a channel are, for example, entertainment and sports. Nevertheless, offering these programmes does not contribute to more open diversity of the supply. This means that a higher degree of open diversity coincides with a higher discrepancy between supply and demand in the market (Van Cuilenburg, 1999; Van der Wurff, 2004). Commercial broadcasting companies, on the other hand, will strive for as many viewers as possible and more time spent on television because of their objective of profit maximisation. To realise this, their supply will concede to the demand from the 'market' as much as possible. This means that in countries where people, aside from the channels of public broadcasting companies, also have a choice from more commercial channels, they also have more possibilities to avoid a more diverse ('open diversity') and possibly more unpopular programme supply, such as that offered by public channels. The hypothesis is then as follows:

> Hypothesis 4: The higher the percentage of commercial channels in a country, the less negative the relation between the degree of open diversity of public channels and the time spent on television.

Picard (2001) argues that the degree to which there are financial means available to shape programme supply affects the quality of the television supply: the fewer financial means, the lower the quality of the supply. This lower quality manifests itself, among other things, in more reruns, less shooting on location, more call-in shows, fewer cameras and cheaper actors (Picard, 2001). This lower quality of the supply has consequences for the degree to which people spend time on television. The presumption, which incidentally has not been tested rigorously in the European context, is that the audience will

spend less time on television if the quality of the programme supply is limited. Here it should be noted that the relation between the television budget and quality also depends on the number of channels the budget is intended for. After all, in case the budget is to be distributed between many channels, this will result in a lower programme quality than in case the same budget is distributed over fewer channels. Given that for hypothesis 1 the number of channels has already been taken into account, the hypothesis can be formulated as follows:

> Hypothesis 5: The larger the television budget per channel in a country, the more time people in the country spend on television.

The nature of the programme supply is not only dependant on the objectives of the channels, but also on the degree to which countries have their own viable television industry. The television industry is considerably dependant on the size of the internal market and language restrictions (Steemers, 2004). The smaller the internal markets, the higher the production costs of domestic productions related to the number of people that can be reached. Return on investment (earning back the production costs) through advertisement revenues is more difficult on a smaller internal market than on a larger internal market. This means that the smaller the population of a country, the more profitable it is to import programmes from abroad (De Bens & De Smaele, 2001). This line of reasoning also explains why commercial broadcasting companies broadcast considerably more American fiction than public broadcasting companies (De Bens & De Smaele, 2001). After all, profit maximisation is more important to commercial broadcasting companies than it is for public broadcasting companies. These imported programmes differ from domestic programmes in terms of language and culture. The expectation is that these imported programmes have less appeal for viewers than domestically produced programmes and will therefore be watched less. This expectation has been deduced from the general proposition of the social identity theory that individuals are more strongly inclined to identify with their cultural 'in-group' (Tajfel, 1981). The additional assumption that social identification can also be expressed in the time spent on domestic programme productions creates the following hypothesis:

> Hypothesis 6: The more broadcasting time is spent on foreign programmes, the less time people in the country spend on television.

5.2.2   Individual explanations: Time displacement

The time spent on television is substantially dependant on the available time budget people have: given a limited time budget, time spent on one activity is at the expense of time that could be spent on another activity (ceteris paribus). In this study we distinguish between media activities, social activities and work.

5.2.2.1   Time spent on other media as recreation

Aside from the time spent on television, people also spend time on other types of media in varying degrees. All types of media (television, radio, newspapers and Internet) provide, to a higher or lower degree, both entertainment and news. This means that all media types compete to some degree for the same leisure time available to people and

that time spent on the one medium type is done so at the expense of time spent on other media types (Huysmans & De Haan, 2004; Knulst, 1999). The hypothesis is thus as follows:

> Hypothesis 7: The more time people spend on other media types (i.e. newspapers, radio and Internet), the less time they spend on television.

Hypothesis 7 can be differentiated. Television is a medium that is mainly used in the evening, as is the use of Internet. However, reading newspapers and listening to the radio takes place mostly in the morning and in the afternoon (Huysmans, 2001). The observation that watching television and using the Internet both take place in the evening, implies that Internet competes more directly with time spent on television for the available time than the time spent on newspapers and radio. The hypothesis is then as follows:

> Hypothesis 8: The negative correlation between time spent on different media types and on television is stronger for Internet than for radio and newspapers.

5.2.2.2   Social Contacts and Activities as Recreation.

Time spent on television is at the expense of time spent on social activities. In some studies, different social activities in which people participate are related to time spent on television (De Hart & Breedveld, 2001; Hooghe, 2002; Putnam, 1995). On the one hand, it is presumed that people who live together with others, have less of a say in how available free time is spent (watching television or not) and, on the other hand, have less of a say in which programmes are watched (Walker, 1996). In both situations, people spend less time on television. The hypothesis is as follows:

> Hypothesis 9: The more people live in a household, the less time they spend on television.

Social activities can also take place outdoors. Research on the spending of time conducted in the US by Nie, Hillygus, and Erbring (2002) illustrates that the time spent on television has a negative correlation with time spent on friends and colleagues. A similar correlation is found in the Netherlands as well: the degree of time spent on social contacts correlates negatively with the time spent on audiovisual media (Huysmans & De Haan, 2004, p. 222). The hypothesis is thus as follows:

> Hypothesis 10: The more time people spend on friends, family and colleagues, the less time they spend on television.

Putnam (1995) postulates that there is an increasing degree of privatisation or individualisation of recreation. People stay home to be entertained privately by television, alone or with others. They do this at the expense of time that could be spent on active membership and volunteer work in organisations (Van den Broek, 2001, p. 47-48). Hooghe (2003) ascertains for the Belgian situation that membership of at least one organisation as well as time spent on volunteer work, does not show any relation with the time spent

on television. Aside from unscheduled time spent on social activities, Knulst (1999) distinguishes scheduled time: time people cannot spend freely, such as work time. This scheduled time imposes a greater restriction on leisure time. Knulst (1999) ascertains that unscheduled time is mainly occupied by time spent on television. This applies mainly to people who have a lot of unscheduled time: when people have little scheduled time, they spend more time on television. If one is tied up in work (scheduled time) or other diversions, this is done at the expense of time spent on television. The hypotheses are thus as follows:

Hypothesis 11: The more organisations people are members of, the less time they spend on television;

Hypothesis 12: The more organisations people do volunteer work for, the less time they spend on television;

Hypothesis 13: The more hours per week people work, the less time they spend on television.

5.2.2.3   Socio-Structural Characteristics.

Socio-structural characteristics also correlate with the time spent on television. These relations are mostly regarded under the general proposition that those social categories that have less free time will actually spend less time on television. Frissen (1992, p. 111) also interprets the positive correlation between age and the time spent on television in terms of available free time: the older people are, the more free time they have, which they can spend on watching television. People with higher education and a higher income mostly have jobs with a heavier workload and consequently spend less time on television (Frissen, 1992; Van den Bulck, 1996). Those who work and those who study have less free time to spend, which could explain why they spend less time on television than those who do not work (Huysmans & De Haan, 2004). Furthermore, workers and lower employees seem to spend more time on television than self-employed persons, independents and people in intermediate and higher professions (Peters, 1989), which can also be interpreted in terms of the available time budget. These characteristics, such as education, age and social class, seem to impose restrictions on the amount of free time that people have to spend and the manner in which they spend it. The hypotheses concerning these socio-structural characteristics are as follows:

Hypothesis 14: The older people are, the more time they spend on television.

Hypothesis 15: The lower educated people are, the more time they spend on television.

Hypothesis 16: The higher the income people have, the less time they spend on television.

Hypothesis 17: People without paid jobs spend more time on television than people with paid jobs or a study.

Hypothesis 18: Workers and lower employees spend more time on television than people in higher professions.

5.3 Method

5.3.1 Data

To test the hypotheses, data originating from different sources are used. Data about respondents were collected through the European Social Survey [ESS] (2004a, 2004b). In this survey, held in the winter of 2002-03, people from 22 countries were questioned about a large number of subjects, including time spent on different types of media. An important principle with the collection of data was a uniform manner of sampling and measuring instrumentation to reduce possible method effects (Jowell & the Central Coordinating Team, 2003). These procedures produced data of a high quality with a high response rate (N = 42.359; 22 countries). Data on the television supply in European countries originate from the European Audiovisual Observatory (2003b) and Eurostat (2003). As data on television supply are not available for all countries, 28,306 respondents from 15 countries are left after list-wise deletion.

5.3.2 Measurements

5.3.2.1 Dependant variable: Time spent on TV

The dependant variable time spent on television was operationalised by asking respondents how many hours they watched television on an average weekday, in approximately equal intervals of half an hour. The independant variables can be grouped by characteristics on the contextual or national level and by characteristics on the individual level.

5.3.2.2 Contextual characteristics as independent variables

Television supply. The number of channels as an indication of the offered broadcasting time per country consists of the total number of public and commercial channels which are specifically aimed at the general public, uncoded and regardless of the distribution techniques such as ether, cable or satellite (Eurostat, 2003). The percentage of commercial channels per country concerns the percentage of the total number of channels per country. The degree of open diversity of public broadcasting companies concerns the degree to which the programme supply is compiled heterogeneously in terms of programme categories. To this end Simpson's D_z has been calculated (Agresti & Agresti, 1977; cf. Hellman, 2001; McDonald & Dimmick, 2003), based on the percentages of annual broadcasting time spent on seven programme categories (information and educa-

tion, entertainment, fiction, sports, music, children's programmes, other) (European Audiovisual Observatory, 2003b). The more heterogeneous the programme supply, the higher the degree of open diversity.

The quality of the supply of public and commercial broadcasting organisations is significantly dependant on the spending budget of the broadcasting organisations. The total spending budget in a country is measured by calculating the sum of the profits of television license fees and state subsidies as far as public broadcasting companies are concerned and the income from television commercials for both public and commercial broadcasting companies, divided by the number of channels (Eurostat, 2003). Even though it concerns budgets for the year 2000 we believe that this is indicative of the quality of programmes in 2002. More so, because there is a time lag between the allocation of budgets to the production of television programmes and the television programmes actually being broadcasted. The amount of imported programme broadcasting time in hours concerns the broadcasting time spent on foreign programmes (European Audiovisual Observatory, 2003b).

5.3.2.3   Individual Characteristics as Independent Variables

Time spent on other media. Time spent on newspapers and time spent on the radio were operationalised by asking the respondents how much time they spend on these types of media on an average weekday, in approximately equal intervals of half an hour. Time spent on the Internet was operationalised by asking about the frequency with which the World Wide Web and e-mail are used, both at work and at home, using eight categories ranging from never to every day.

Time spent on social activities and work. The number of people in the household of the respondent was derived from the composition in the household in question. The degree of membership in organisations and clubs and volunteer work on behalf of organisations and clubs was measured by presenting a list of 12 types of organisations. It concerns organisations such as political parties, hobby and sports clubs and organisations aimed at profession and work. For each organisation it could be indicated whether one was a member or did volunteer work there in the last 12 months. This results in two indices ranging from 0 up to and including 12. The frequency with which one meets with friends, family members and colleagues (not for work or obligation) is a valid indication of the degree in which one spends time on friends, family and colleagues (seven categories varying from never to daily). The number of hours in which one performs paid work was measured by asking the respondent about the number of work hours, including paid and unpaid overtime.

Socio-structural characteristics. Education was measured by asking which highest education level the respondent has concluded with success, seven categories varying from *not concluded* to *academic education*. Age was measured by asking the respondents their birth year. The monthly net household income was measured by asking the respondents about the total net income of the household they are a part of. Only for Ireland and Hungary have country specific codes been used. In order to be able to make comparisons between countries, the mean income was set to one. Missing scores on household income were predicted and substituted through regression analysis of income on four variables (number of years of education, age, social class and marital status).

Daily activities. The nature of the daily activities concerns whether or not one has paid work or whether or not one studies. We distinguish working from non-working

people. For the respondents who were working at the time of the data collection, the profession was recoded to the nominal typology of Erikson, Goldthorpe, and Porto-carero (1979, 1983). For this the International Standard Classification of Occupations (ISCO) of the International Labour Office of the United Nations was used. To deduce the EGP categories of ISCO88 the procedures and standard modules of Ganzeboom, Luijkx, and Treiman (1989) and Ganzeboom and Treiman (1996) were used. Categories with less than four per cent of the respondents were combined with similar categories. We distinguish higher and lower managers, routine non-manual workers, self-employed persons, schooled manual workers, unschooled manual workers. This classification that originally contains ten categories, was reduced to six categories, and subsequently supplemented with five categories of non-workers: students and pupils, unemployed, pensioners and disabled people, houseworkers, others. The eleven categories of social position were treated as dummy variables in the subsequent analysis (Hardy, 1993). See Appendix for descriptive statistics of all variables.

5.3.3 Data Analysis

Both the hypotheses and the data are structured in a hierarchical manner: individuals (level 1) living in different countries (level 2). Therefore we use multi-level analysis (MLwiN) (Goldstein et al., 1998; Snijders & Bosker, 1999). The first model (baseline model) merely specifies the intercept, with the aim of determining variance on the individual level, followed by the estimation of the variance on national level to ascertain if the model fit improves. The third model, aside from the intercept, also contains the explanations on the national level. In order to test whether significant correlations on national level remain, the time spent on other media (model 4), time spent on social and work activities (model 5) and socio-structural characteristics (model 6) are added to the subsequent models. Table 5.1 shows the goodness-of-fit for all models.

From this table we gather that, taking the variance on individual level into account (model 1), the fit improves significantly when we estimate the variance on level 2 (Δ deviance = 1413.0; df = 1). From this we derive that multi-level analysis is valid. The addition of macro-characteristics (model 2) indicates a significant improvement of the fit (Δ deviance = 12.6; df = 5). As yet, the question remains which macro-characteristics are responsible for this. The addition of the interaction between two macro-characteristics (model 3) signifies an improvement of the fit which is not quite significant on the level of p <.05 (Δ deviance = 3.1; df = 1), but is so on a significance level of p < .10. How this interaction effect is to be interpreted will be discussed in the following sec-

Table 5.1 Goodness-of-fit of multi-level models for time spent on television

Model	Deviance	Δ deviance	Δ df	p
(0) Empty 1-level model	119757.0			
(1) Empty 2-level model	118344.3	1413.0	1	.00
(2) + main effects contextual characteristics	118331.7	12.6	5	.03
(3) + interaction heterogeneity and % commercial channels	118328.6	3.1	1	.08
(4) + time spent on other media	116880.4	1448.2	3	.00
(5) + social activities and number of hours paid work	115505.1	1375.3	5	.00
(6) + socio-structural individual characteristics	114750.1	755.0	13	.00

tion. The expansion of the model with the time spent on other media (model 4) indicates a significant improvement of the fit (Δ deviance = 1448.2; df = 3). Which media are responsible for this should become clear from regression coefficients presented later. The addition of time spent on social activities and paid work (model 5) also results in a significantly better fit (Δ deviance = 1375.3; df = 5). Expanding the model with socio-structural characteristics (model 6) produces a significant improvement of the fit (Δ deviance = 755.0; df = 13).

The initial conclusion is that all identified determinants contribute significantly to the explanation of the time spent on watching television. The following section is devoted to the interpretation of the empirical relations.

5.4 Results

Figure 5.2 shows the average time spent on television in 15 countries (model 1). Table 5.1 has already shown that there are significant differences in average time spent on television. On average, people spend the most time on television in Great Britain. In Ireland, the Netherlands, Spain, Denmark, Italy and Germany people also spend more than average time on television. France, Belgium and Poland spend the average amount of time. In some Northern European countries people spend relatively little time on television. In Austria and Switzerland people spend the least time on television.

Table 5.2 shows the results of the multi-level analysis explaining time spent on television in European countries. First, we look at the effects of the supply of television in these countries. We proposed to test the hypothesis, reasoning from an economical principle of demand and supply, that if the supply is larger and is better fine tuned to the demand, more time is spent on television. However, it appears that the number of channels that is offered in a country does not contribute significantly to the explanation of the
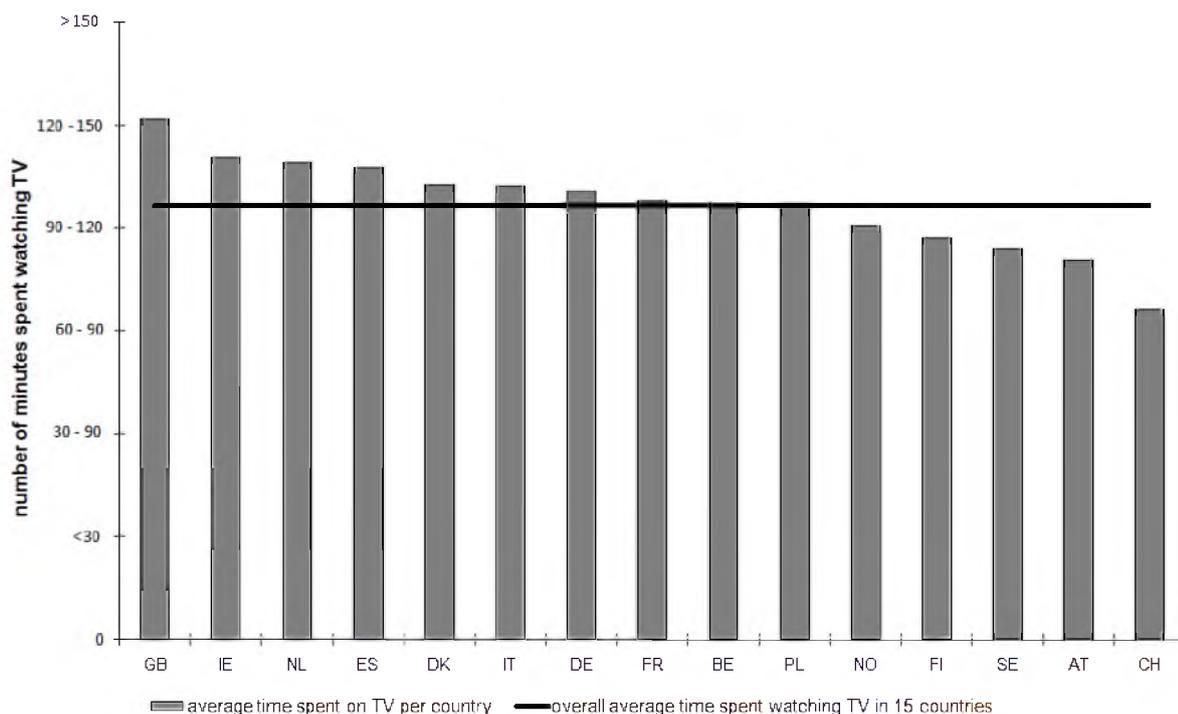

Figure 5.2 Average time spent on television per country

time spent on television: the number of channels does not affect the time spent on television in the different countries. Thus, hypothesis 1 is rejected. This also applies to hypothesis 2: the relative number of commercial channels, of which we suspected that

Table 5.2 (part 1) Multi-level analysis of characteristics of the television supply, spending of time and socio-structural characteristics on the time spent on television

	Model 1		Model 2		Model3	
	B	SE	B	SE	B	SE
Intercept	0.007	(0.115)	0.002	(0.076)	–0.020	(0.070)
Contextual characteristics						
Number of channels			0.006	(0.004)	0.004	(0.004)
% commercial channels			–0.003	(0.015)	0.020	(0.018)
Diversity program supply public broadcasting channels			–3.918*	(1.484)	–3.853*	(1.339)
Budget (x 100 million)			0.002	(0.012)	0.000	(0.011)
Broadcasting time foreign programmes (x 1,000 hours)			0.015	(0.017)	0.020	(0.016)
Interaction diversity and % commercial channels					0.524*	(0.282)
Individual characteristics						
Time spent on other media						
Time spent on radio						
Time spent on newspapers						
Time spent on Internet						
Social contacts and activities						
Number of members of the household						
Time spent on friends, family and colleagues						
Membership in organisations						
Volunteer work in organisations						
Number of hours paid work						
Socio-structural characteristics						
Age						
Education						
Income						
Social position						
Higher professionals						
Lower professionals						
Routine non-manual workers						
Small independents						
Schooled workers						
Semi- and unschooled workers						
Students						
Unemployed						
Pensioners. disabled						
Working in the household						
Other						
Variance						
Individual level		3.821		3.821		3.821
(% explained)				0		0.0
National level		0.195		0.082		0.067
(% explained)				57.6		65.7

Note. All interval variables centered. Coefficients are unstandardised.
* p < .05, one-tailed.
a The significant intercept in model 6 emerges because categorical variables (social position) are also introduced, so that the intercept no longer stands for 'average respondent' in 'average country', but for 'higher professionals (reference category) that score average on other variables' in 'average country'.

their supply concurs better with the demand of the public, does not contribute to the explanation of cross-national differences in time spent on television.

Table 5.2 (part 2) Multi-level analysis of characteristics of the television supply, spending of time and socio-structural characteristics on the time spent on television

	Model 4		Model 5		Model 6[a]	
	B	SE	B	SE	B	SE
Intercept	−0.020	(0.070)	−0.022	(0.073)	−0.259*	(0.086)
Contextual characteristics						
Number of channels	0.002	(0.004)	0.003	(0.004)	0.001	(0.004)
% commercial channels	0.020	(0.018)	0.019	(0.019)	0.022	(0.019)
Diversity program supply public broadcasting channels	−3.519*	(1.328)	−3.389*	(1.395)	−3.192*	(1.386)
Budget (x 100 million)	0.004	(0.010)	0.001	(0.011)	0.004	(0.011)
Broadcasting time foreign programmes (x 1,000 hours)	0.013	(0.016)	0.020	(0.016)	0.019	(0.016)
Interaction diversity and % commercial channels	0.473*	(0.279)	0.536*	(0.293)	0.537*	(0.292)
Individual characteristics						
Time spent on other media						
Time spent on radio	0.027*	(0.004)	0.034*	(0.004)	0.025*	(0.004)
Time spent on newspapers	0.110*	(0.009)	0.096*	(0.009)	0.106*	(0.009)
Time spent on Internet	−0.162	(0.005)	−0.102	(0.005)	−0.044*	(0.006)
Social contacts and activities						
Number of members of the household			−0.097*	(0.008)	−0.080*	(0.009)
Time spent on friends, family and colleagues			−0.010	(0.008)	−0.001	(0.008)
Membership in organisations			−0.109*	(0.012)	−0.076*	(0.012)
Volunteer work in organisations			−0.120*	(0.018)	−0.120*	(0.018)
Number of hours paid work			−0.080	(0.003)	−0.048	(0.006)
Socio-structural characteristics						
Age					−0.004*	(0.001)
Education					−0.174*	(0.009)
Income					−0.029*	(0.016)
Social position						
Higher professionals						ref. cat.
Lower professionals					0.031	(0.048)
Routine non-manual workers					0.137*	(0.055)
Small independents					−0.067	(0.066)
Schooled workers					0.342*	(0.060)
Semi- and unschooled workers					0.205*	(0.057)
Students					−0.246*	(0.076)
Unemployed					0.507*	(0.081)
Pensioners. disabled					0.636*	(0.070)
Working in the household					0.290*	(0.069)
Other					−0.063	(0.095)
Variance						
Individual level		3.631		3.458		3.367
(% explained)		5.0		9.5		11.9
National level		0.066		0.073		0.072
(% explained)		66.3		62.5		63.1

Note. All interval variables centered. Coefficients are unstandardised.
* p < .05, one-tailed.
[a] The significant intercept in model 6 emerges because categorical variables (social position) are also introduced, so that the intercept no longer stands for 'average respondent' in 'average country', but for 'higher professionals (reference category) that score average on other variables' in 'average country'.

Regarding the nature of the supply we proposed to test the hypothesis that if it is more diverse, and consequently concurs less with what people mostly want to watch, they spend less time on television. It appears that the degree of diversity of the programme supply on the public channels has a negative effect on the degree of time spent on television ($b = -3.918$): the more diverse the public programme supply, the less time Europeans spend on watching television. The finding does not support hypothesis 3.

Aside from the main effects of diversity and the relative number of commercial channels, we expected that both interact: the negative effect of diversity on the time spent on television applies especially if commercial channels offer relatively few alternatives (hypothesis 4). The results show that the negative effect of diversity on the time spent on television ($b = -3.853$) indeed becomes less negative as more commercial channels are offered ($b = 0.524$).

The hypothesis that a larger budget and with that a higher programme quality coincides with more time spent on television is not supported: none of the concerning parameters are significant. Hypothesis 5 is therefore also rejected. The hypothesis that foreign programmes reduce the time spent on television, appears not to be supported. The share of foreign programmes on television, programmes that presumably appeal less to the national identity of viewers (hypothesis 6), appears not to affect the time spent on television.

After having mapped the effects of explanations on the contextual level, we will now look at explanatory factors on the individual level. Thus we take the effects of time spent on other media into consideration. In hypothesis 7 we stated that as people spend more time on other media, they will do so at the expense of time spent on television. This applies especially to media that are either similar in a functional manner or are used at about the same time of day (hypothesis 8). On the whole we have to reject hypothesis 7: the time spent on radio as well as on newspapers appears to have a positive effect on the time spent on television, while we expected a negative relation. The time spent on Internet, on the other hand, has a negative effect on the time spent on television. Both are used mainly in the evening: the more one uses Internet , the less time one spends on television. This effect is in accordance with hypothesis 8.

Next we look at the effects of time spent on social activities and work on the time spent on television. The number of people one shares the household, and subsequently the television with appears to show a negative effect ($b = 0.097$) in accordance with hypothesis 9. The time spent on friends, family and colleagues, on the other hand, does not appear to have a significant effect on the time spent on television, refuting hypothesis 10. The number of memberships in organisations has, a negative relation with the time spent on television ($b = -0.109$), confirming hypothesis 11. Moreover, the time devoted to volunteer work for these organisations appears to have a negative effect on the time spent on television as well ($b = -0.120$), supporting hypothesis 12. From this model it appears that the number of hours of paid work one performs is unrelated to the time one spends on television ($b = -0.080$), refuting hypothesis 13. In this model, the relations on the individual as well as contextual level established in previous models remain practically unchanged.

In the last model we look at the effects that socio-structural characteristics have on the time spent on television. Age appears, in contrast to hypothesis 14, to show a negative relation with the time spent on television ($b = -0.004$). Education appears, in accordance with hypothesis 15, to have a negative relation with the time spent on television

(b = –0.174), which also applies to income (b = –0.029), in accordance with hypothesis 16. As far as different social classes are concerned, it appears that people without paid work (i.e. the unemployed, pensioners and the disabled, and people working in the household) spend more time on television as opposed to higher professionals (hypothesis 17). Students, however, form an exception to this: they spend relatively less time on television. Schooled and unschooled workers appear to spend more time on television than higher professionals (hypothesis 18). Lower professionals and self-employed persons do not differ significantly from higher professionals in the amount of time they spend on television.

5.5   Conclusion and Discussion

In this study we have searched for differences between European countries in the degree to which people spend time on watching television. There appeared to be clear cross-national differences: the most time was spent on television in Great Britain and the least time in Switzerland. The subsequent question was: how can the differences in time spent on television be explained? The explanations were sought on the level of cross-national differences in the television supply and on the level of individual differences. From the results of the multi-level analysis it appears that the number of channels does not offer an explanation for the time Europeans spent on television: a larger number of channels does not explain the degree to which people in different countries spend more or less time on television.

Even though the extent of supply does not have an effect, the nature of the programme supply does indeed appear to have an effect on the time spent on television: the more diverse the supply on the public broadcasting channels, the less time people in different countries spend on television. This relation is weaker (i.e., less negative) in countries where relatively more commercial channels are available. The interpretation of this finding is that, given the PSBs' supply, people select solely the programmes that they really want to watch, and avoid programmes that they do not want to watch. This suggests that there remain fewer programmes that are worth watching with a more diverse supply of the public channels than with a less diverse supply. Data from the European Audiovisual Observatory (2003a, 2003b) show that audiences prefer fictional and entertainment programmes, which can be found more on commercial channels than on PSB channels. The two other explanations for cross-national differences in time spent on television, i.e. the financial budget and the broadcasting time spent on foreign programmes, are not supported.

The third question that was brought up concerns the individual characteristics of people that explain why more or less time is spent on television. As far as time spent on other media is concerned, it appears that television only encounters competition from the time spent on Internet. For the Dutch and Swedish situations it is known that both are used mainly in the evening and in private (Huysmans, 2001). The time spent on radio and newspapers, on the other hand, is not at the expense of the time spent on television, substantiating that reading newspapers and listening to the radio occurs at different times during the day, i.e. mainly in the morning and afternoon and less in the evening. As far as time spent on social contacts and activities is concerned, it appears that these are all done at the expense of time spent on television. Only the time spent on family,

friends and colleagues does not appear to show a relation with the time spent on television.

Of the socio-structural characteristics, people with a higher education or a higher income as well as people in certain social positions, appear to spend less time on television. Notable is the negative correlation between age and the time spent on television, given that it is presumed that the elderly spend much more time on television than young people. For the sake of completeness, we observe that pensioners do spend more time on television, which is in accordance with the expectation that was deduced on their time budget.

Against the background of the results, a number of conclusions can be formulated. A larger supply of channels does not induce time spent on watching television. Scheduled activities are a strongly limiting factor in watching more or precisely less television: within the available 24 hours per day, people have to complete a large number of activities which are done at the expense of time that can be spent on television. This means that the idea that the television acts as a sponge that soaks up available time also applies to this cross-national comparison (Knulst, 1999). If people have more available (unscheduled) time, then it is very likely that this will be occupied with watching television.

That the supply of channels is unrelated to time spent on television, means that the ratio of supply and demand, i.e. the profusion (Van Cuilenburg, 2005), becomes increasingly skewed (cf. Vergeer, Eisinga & Franses, submitted). If we translate these results to the longitudinal development of expansion of the number of channels available to the audience, an increase in profusion may lead to increasing fragmentation of the audience along these channels (Picard, 2001). After all, in the event that viewers divide their time more or less equally among all these channels, they will watch the same programmes to a continuously lesser degree. This, in turn, leads to people sharing less experiences amongst each other, which is regarded as detrimental to the cohesion in society. Moreover, the increasing fragmentation of the audience could possibly have an economic effect. Through the decrease of the *average time spent per channel*, the relative effectiveness of advertisement in reaching a substantial audience size decreases. If a proportional decrease of advertisement fees coincides therewith, this leads to less advertisement revenues and with that to a smaller budget for programme production. This may result in a lower quality of the programmes, which manifests itself in, for example, more reruns of old programmes, more extensive use of programme formats, and more often cheaply hired amateurs (real life shows) instead of professional actors (Picard, 2001). If quality were a reason for viewers to tune in to programmes, this subsequently leads to less time spent on television. As yet we see, however, that the time spent on television is spread unevenly across channels. The national public channels still draw many viewers and with that the most viewing time (European Audiovisual Observatory, 2003a). This suggests that people still encounter enough shared experiences through a limited number of channels. However, the subsequent question is whether viewers receive it from the diverse public channels or from the more homogenous commercial channels.

A diverse supply on public channels is generally characterised by a lot of news and educational programmes, at the expense of fiction and entertainment programmes. The commercial channels, on the other hand, are characterised precisely by a large supply of fiction and entertainment (European Audiovisual Observatory, 2003b). It seems that

people, given a diverse public supply, turn to commercial channels. Commercial channels aim to appeal as much as possible to the most important preferences of the general public in order to realise their objective of profit maximisation. Given that these preferences lie mainly with fiction and entertainment, it is plausible that viewers predominantly choose the commercial channels. Although diversity is considered of great importance for the balance of the supply, stimulating public debate and putting people in contact with other views (McQuail, 1992; Van der Wurff, 2005) the question now arises as to what extent striving for a diverse supply is still effective if it appears that people avoid these programmes? In a time when public channels are pressured by strong competition with commercial channels, it seems that public channels, in order to preserve their reason for existence, have to take the preferences of the viewers more into account. However, this may result in a discussion on the PSB's legitimacy. For instance, the question arises whether it is politically, socially or economically feasible to maintain a public broadcasting system with a diverse supply if fewer people watch PSB programmes? After all, public broadcasting systems cost a lot of money which is brought in by taxpayers. In the Netherlands it has already been proposed that the Public Broadcasting System can function with one channel less (vvd, 2006). In addition, the question arises whether public service broadcasting distinguishes itself sufficiently from the commercial channels to call itself a public service or that its programming increasingly mimics commercial programming (Meier, 2003), because public channels are only able to reach sufficient viewers when they take audience's preferences more into account? Commercial broadcasters could argue first of all that a (practically) identical programme supply can just as well be financed commercially and public financing is therefore unnecessary. In a European Union that strives for liberalised markets to attain a common good, governments, trying to protect national public broadcasting increasingly face the difficulty of producing diverse programme supply as well as obtaining a substantial market share of viewers at the same time.

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Appendix Descriptive statistics

	M	SD	N
National characteristics			
Number of channels	57.73	50.97	15
% commercial channels	81.42	15.96	15
Diversity program supply public broadcasting channels	.77	.06	15
Budget (€ × 100 million)	16.982	19.55	15
Broadcasting time foreign programmes (× 1,000 hours)	15.44	7.71	15
Individual characteristics			
Time spent on media			
Time spent on television	4.23	2.01	28306
Time spent on radio	3.21	2.61	28306
Time spent on newspapers	1.54	1.28	28306
Time spent on Internet	3.23	2.55	28306
Social contacts and activities			
Number of members of the household	2.75	1.41	28306
Time spent on friends, family and colleagues	5.12	1.48	28306
Membership in organisations	.69	1.12	28306
Volunteer work in organisations	.31	.72	28306
Number of hours paid work	4.21	4.49	28306
Socio-structural characteristics			
Age	46.66	18.12	28306
Education	2.98	1.45	28306
Income	.97	.74	28306
Social position			
Higher professionals	.09	.29	28306
Lower professionals	.13	.34	28306
Routine non-manual workers	.08	.28	28306
Small independents	.04	.21	28306
Schooled workers	.06	.24	28306
Semi- and unschooled workers	.09	.28	28306
Students	.08	.28	28306
Unemployed	.05	.21	28306
Pensioners, disabled	.23	.42	28306
Working in the household	.12	.32	28306
Other	.02	.14	28306