Cultural taste from father, mother or both: the case of Finland

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The main goal of this paper is to address the importance parents' cultural taste in explaining the cultural participation among adults in Finland. It is not known how this intergenerational transfer hypothesis is valid when the consumer is not young. Therefore we can form some research questions: Do middle-aged or older consumers inherit cultural tastes from their parents? How stable these intergenerational transfer effects are? Which form of parents' hobbies is most influential?

A constant elasticity of substitution (CES) utility function is used to describe the structure of consumer preferences. The linear demand system to be estimated using seemingly unrelated systems (SUR) method with two equations. If the intergenerational transfer hypothesis is valid, parents' interest towards movies, pop music, classical music and visual arts should have a positive impact on the demand for movies, rock or jazz music, classical music and art gallery visits, respectively.

The results indicate that intergenerational transfer hypothesis is valid. We do indeed inherit cultural habits and taste from our parents. We seem to visit similar cultural events that our parents do (did). The youngest age cohort is by far most influenced by parents' classical music interest. Visual arts and pop music interest of the parents seem to be second and third most influential hobbies when only the youngest ages are considered. Parents' pop music and sport hobbies are the most influential sources when the cultural and sport participation of the middle-aged are studied. Mother's visual arts interest and father's sport interest are most important roots of the cultural and sport participation decisions of the oldest age cohort. In general age, gender and education are important determinants of cultural participation. The youngest who have less family constraints are more active than middle-aged and more than 55 years old are more active participants except in the cases of movies at a cinema or rock music. Theater attendance, arts gallery visits and classical music concert visits increase after 45 years age. Visiting musicals is not sensitive to education while all other cultural events are elite in terms of education. The only exception is rock music concerts in which more educated seem to visit less than the reference group – students.

Women are more active in all cultural activities studied here. Most of the intergenerational transfer effects are not stable throughout the child's age. Only mother's classical music or visual art habits seem to have a stable and positive effect on the classical music concert participation and on the art gallery visits of the child regardless of the age. However, the father's corresponding classical music or visual art habits have a positive effect on the classical music concert participation or on the art gallery visits of a child when he/she is rather young.

Keywords: Intergenerational transfer, Cultural participation, Finland, CES, Finland

Introduction and motivation

The main goal of this paper is to address the importance parents' cultural taste in explaining the cultural participation among adults in Finland. It is well knows that some cultural tastes are influenced by parents' rather than a young consumer's social position, for example in Israel father's status has a positive relation with a taste for classical music, opera, blues and jazz (Katz-Gerro, Raz and Yaish 2007). Children from highly educated and wealthy parents are in reality more active in the cultural participation than children with low-educated and less wealthy parents (van Eijck 1997, Nagel 2010). Media behaviour, watching artistic programmes on television seems to be predicted by the parents' choices when the respondents were about 15 years old (Vettehen, Konig, Westerik and Beentjes 2012). Pop and rock music concert participation and the educational level of the mother seem to have a significant effect on the pop and rock participation of adolescents in Flanders while for the father these effects are not significant (Willekens and Lievens 2014). To the knowledge of the author, no such research has been done using the Finnish data and an economic model explaining the cultural participation with parents' cultural taste.

Many have used parents' education as a proxy for cultural capital. The idea is that a higher education is associated with the ability to understand and enjoy the symbolic message of cultural goods. Highly educated parents seem to transfer this ability to their children and therefore young consumers whose parents are highly educated consume more cultural events and performances that are more elitist, like classical music concerts and opera performances.

However, it is not known how this intergenerational transfer hypothesis is valid when the consumer is not young. Therefore we can form some research questions: Do middle-aged or older consumers inherit cultural tastes from their parents? How stable these intergenerational transfer effects are? Which form of parents' hobbies is most influential?

This study uses a data collected by Statistics Finland in 2007 focusing on cultural attitudes of the citizens in Finland excluding the Åland islands. A letter inquiry was sent to a randomly chosen 3000 individuals. In the

survey there are 1388 respondents meaning that the response rate is 46.3 %. The data allows studying how the intergenerational transfer explains cultural participation. Are there any differences between transfer from mother and from father? The data also allows us to study a similar intergenerational transfer hypothesis in the case of sport activity. In particular, the aim of this study is to provide an analysis on the effects of intergenerational transfer effects on their children's cultural events and sports participation.

Literature review

Cultural taste or cultural consumption is associated with consumer's own education, income and profession (Seaman 2006, 419). Performing arts audiences are elite in terms of education and income. Relatively high educated and wealthy seem to consume more highbrow arts. Different terminologies have been used to classify the tastes. In cultural sociology often the classification into highbrow and lowbrow has been used. For example Bihagen and Katz-Gerro (2000) show that women are more active in highbrow consumption (opera, dance or theatrical performances) whereas men are active in lowbrow consumption such as watching television (entertainment, sport). Another classification which focuses on the variety of cultural consumption has received more attention, according to the omnivore – univore hypothesis the main line of classification does not lie between highbrow and lowbrow. Rather, the omnivore engage in both high art and popular culture and they are more inclusive and the univore are more one-sided and exclusive (Warde, Wright and Gayo-Cal 2008). Based on several studies Peterson (2005) as summary concludes that highly educated and middle class seem to participate both in high and popular culture. In Finland women and older age groups are more involved in highbrow except movies at a cinema (Purhonen, Gronow and Rahkonen 2011). Moreover Purhonen et al (2011) point out that education - but not income - is highly important determinant in highbrow culture consumption. However, younger and highly educated do not seem to engage in highbrow culture as highly educated older Finns do.

If cultural consumption is a normal good from the point of economic view, higher incomes result in higher demand but lost income due to time spent in these leisure activities should decrease the demand. The impact of personal incomes on the demand for time-consuming arts consumption has two channels, the direct income effect and the indirect substitution effect. The adverse effect of rising wages on demand is the negative substitution effect, the time needed for consumption is more expensive in terms of lost income. This substitution effect is called the Linder's effect (Linder 1970). This adverse effect of rising wages has been given

less attention in the literature. Løyland and Ringstad (2009) using a Norwegian data suggest that Linder's disease is important and cannot be ignored in the case of sports. The writer of this study has also shown that adverse effect is valid in the case of sports, movies at a cinema and classical music concerts (Suominen 2015). The income – leisure approach proposes that time-consuming sport participation varies positively with incomes and negatively with earnings per hour. If the lost income aspect has not been taken into account, the insignificance of income variable, which has been reported in some studies (Seaman 2006 or Purhonen et al 2011, Palma, Palma and Aguado 2013) can be rationalized. Indeed, Seaman emphasizes that the role of education is much stronger than the role of income.

The theory of socialisation used by sociologists and educationalists explains how individuals inherit habits and norms from parents, friends and school (Handel 2006). Parents influence their children's behaviour by giving them support and guidance. The active involvement of parent serves to advance their children's cultural interest (Banks 2012). In a society habits, norms and manners become accepted as these are learned not just from parents but also from friends and school. Children are open to primary socialisation as they learn the values and habits from their parents and friends. The secondary socialisation takes place in schools and leisure time activities as pupils and friends must act according to the school and leisure time rules. When a children spends plenty of time outside home, the role of schoolmates and friends becomes more important. Adolescents and young adults reading habits, the reading of fiction is strongly influenced by the parents' reading habits. Students whose parents are enthusiastic readers seem to read a lot more than their schoolmates whose parents read less (Nagel and Verboord 2012). The influence of parents' reading habits is rather stable. The intergenerational transfer is valid in the case of reading in the Netherlands, however, any household income variable is not included as an explanatory variable. The intergenerational transfer hypothesis that focuses on primary socialization has received a lot of empirical support (van Eijck 1997, Katz-Gerro, Raz and Yaish 2007, Oskala, Keaney, Chan and Bunting 2009, Nagel 2010, Vettehen, Konig, Westerik and Beentjes 2012, Palma, Palma and Aguado 2013 and Willekens and Lievens 2014). However, the focus in most studies is adolescents or young adults, and it is not known how this intergenerational transfer hypothesis is valid in the case of older, that is middle aged person or pensioners.

De Graaf and Kalmijn (2001) argue that intergenerational transfer has two main channels. The direct channel is related to economic status of parents and children and its role has declined while the indirect channel via

educational attainment is stronger. Direct transmission of occupations across generations has declined since the direct inheritance in labour markets has diminished substantially. The indirect transmission of social class through the educational system has also become less important since the educational system is based more on individual achievement and not on inheritance - or class as sociologists define it. Regardless of the channel highbrow consuming parents actively transfer cultural habits among their children by arranging art gallery and theater visits and dance classes. Reeves (2015) proposes that parents who encourage their children to play musical instruments since this transfer improves family cohesion. Willekens, Deanekindt and Lievens (2014) show that the relative effect of parents' education differs in the cases of art and heritage where mother's influence seems to be more important and in the cases of pop and rock activities the role of father seems to dominate. Therefore it is important to study separately the influence of father and the influence of mother on cultural events participation.

Highly educated persons have a greater information processing capacity and they seem to seek cultural activities that offer more complex and multidimensional experiences. Hence educated consumers participate more in highbrow cultural events (Notten, Lancee, van de Werfhorst and Ganzeboom 2015). It has been also noted that highly educated are more omnivore, they seem to participate both in highbrow and lowbrow cultural activities (Purhonen, Gronow and Rahkonen 2010), they are not genre specific.

The author of this study has shown (Suominen 2015) that intergenerational transfer is more probable from father than from mother in the case of sport activity among older cohorts. When the exerciser is middle-aged or younger, both parents' influence is equally important. In the case of movies at a cinema or classical music concerts, mother's influence is significant among all age cohorts while father's cultural habits do not seem to be inherited when the person is older than 55.

A model

Following García, Lera-López and Suárez (2011) consumers' preferences are written in terms of time spent on different leisure activities (l_1 and l_s) and net income (m). The net income can be used to consumption that is not related to leisure. The net income can be used to other than leisure related consumption. Leisure is used in sport (l_s) and cultural activities (l_1) like movies at a cinema, museum visits, rock, classical or jazz music concerts, musicals, opera or theater visits or arts exhibition visits. The linear demand system to be estimated using

seemingly unrelated systems (SUR) method with two equations. Therefore in each estimation only two of the above listed leisure activities are evaluated jointly. A constant elasticity of substitution (CES) utility function is used to describe the structure of consumer preferences due to the convenient marginal rate of substitution (MRS) features. The consumer's optimization problem is

$$(1) \quad max_{m,l_1,l_s} U(m, l_s, l_1) = [m^{-\rho} + \beta l_s^{-\rho} + \gamma l_1^{-\rho}]^{-\frac{1}{\rho}} \quad s.t. \quad m = w(T - l_s - l_1) + y$$

Where U denotes utility, β and γ are positive parameters, w is hourly earnings, T is time available (like 168 hours a week) and finally y is non-labour income. The elasticity of substitution is $\frac{1}{1+\rho}, \rho > -1$. By solving the optimization problem including the budget constraint - $m = w(T - l_s - l_1) + y$ – consumer's demands for sports (l_s) and cultural activities (l_1) can be obtained. The interior solutions of the maximization problem indicate that the MRS between net income (m) and either sports or cultural activities must be equal to the hourly earnings:

$$(2) \quad MRS_{m,l_s} = \frac{\partial U/\partial l_s}{\partial U/\partial m} = \beta(\frac{m}{l_s})^{1+\rho} = w$$

$$(3) \quad MRS_{m,l_1} = \frac{\partial U/\partial l_1}{\partial U/\partial m} = \gamma(\frac{m}{l_1})^{1+\rho} = w$$

The equations (2) and (3) denote the marginal rate of substation between any two components in the CES utility function does not depend on the third. For empirical estimation two handy expressions can be derived from (2) and (3)

$$(4) \quad log\left(\frac{m}{l_s}\right) = \frac{1}{1+\rho} logw - \frac{1}{1+\rho} log\beta$$

$$(5) \quad log\left(\frac{m}{l_1}\right) = \frac{1}{1+\rho} logw - \frac{1}{1+\rho} log\gamma$$

The observable and unobservable factors that have an impact on leisure activities are captured through the parameters β and γ as follows:

$$(6) \quad \beta = e^{(Z_s\theta_s+\varphi_s)}$$

$$(7) \quad \gamma = e^{(Z_1\theta_1+\varphi_1)}$$

where Z_s and Z_1 represent different socio-economic variables that have an impact on utility and leisure time activities and φ_s and φ_1 are random variables accounting for unobservable factors. Assuming that φ_s and φ_1 are

distributed as a bivariate normal distribution with zero means and constant variances, the linear system can be estimated using the seemingly unrelated systems (SUR) method. The following equations will be estimated:

$$(8) \quad log\left(\frac{m}{l_s}\right) = \frac{1}{1+\rho} logw - \frac{1}{1+\rho}(Z_s\theta_s + \varphi_s)$$

$$(9) \quad log\left(\frac{m}{l_1}\right) = \frac{1}{1+\rho} logw - \frac{1}{1+\rho}(Z_1\theta_1 + \varphi_1)$$

Since the sport participation (l_s) and cultural activities demand (l_1) are the denominators in the left hand side of equations (8) and (9) denoting that any positive sign in the estimation results shows a negative impact of the explanatory variable on the sport or cultural consumption.

Data and descriptive statistics

The data (Culture and Leisure in Finland 2007) was collected in autumn 2007 by Statistics Finland using a letter inquiry sent to 3000 adult (aged 18 – 74) individuals in Finland excluding the Åland islands. The response rate was 46.3 %. The data is a wide survey on the culture and leisure and it provides information about personal and household incomes, education, age, gender, marital status, family relations, and about cultural and sport participation. Table 1 (below) presents summary statistics on the forms of cultural and sports participation.

		Approximately every week (3)	Approximately every month (0.5)	A few times in a year (0.1)	Less often (0.01)	Never (0.001)	Different between genders:
Movies at a cinema	Men: 564 Women: 792	M: 0.5 % W: 0.9 %	M: 5.3 % W: 7.3 %	M: 32.1 % W: 41.0 %	M: 48.0 % W: 43.9 %	M: 14.0 % W: 6.8 %	$\chi^2 = 28.229^{***}$
Museum	M: 563 W: 790	M: 0.0 % W: 0.2 %	M: 1.8 % W: 3.0 %	M: 21.7 % W: 26.5 %	M: 55.6 % W: 56.5 %	M: 21.0 % W: 13.8 %	$\chi^2 = 16.679^{***}$
Rock music concerts	M: 560 W: 784	M: 0.2 % W: 0.4 %	M: 0.9 % W: 1.7 %	M: 12.5 % W: 15.8 %	M: 36.6 % W: 33.4 %	M: 49.8 % W: 48.7 %	$\chi^2 = 5.411$
Opera	M: 558 W: 787	M: 0.0 % W: 0.0 %	M: 0.0 % W: 0.6 %	M: 3.0 % W: 7.2 %	M: 20.3 % W: 27.8 %	M: 76.7 % W: 64.3 %	$\chi^2 = 28.825^{***}$
Classical music concert	M: 558 W: 787	M: 0.0 % W: 0.3 %	M: 0.9 % W: 2.3 %	M: 5.2 % W: 10.7 %	M: 22.5 % W: 26.6 %	M: 71.4 % W: 60.2 %	$\chi^2 = 25.373^{***}$
Jazz music concert	M: 557 W: 782	M: 0.0 % W: 0.0 %	M: 0.9 % W: 0.5 %	M: 4.1 % W: 5.1 %	M: 20.5 % W: 21.1 %	M: 74.5 % W: 73.3 %	$\chi^2 = 1.523$
Musicals	M: 554 W: 784	M: 0.0 % W: 0.3 %	M: 0.2 % W: 0.3 %	M: 4.7 % W: 11.5 %	M: 35.2 % W: 49.4 %	M: 59.9 % W: 38.6 %	$\chi^2 = 64.683^{***}$
Theater	M: 562 W: 793	M: 0.0 % W: 0.3 %	M: 2.7 % W: 3.0 %	M: 21.7 % W: 40.2 %	M: 48.9 % W: 45.6 %	M: 26.7 % W: 10.4 %	$\chi^2 = 84.389^{***}$
Art gallery	M: 559 W: 783	M: 0.4 % W: 1.0 %	M: 2.1 % W: 3.2 %	M: 14.1 % W: 18.9 %	M: 35.4 % W: 41.8 %	M: 47.9 % W: 35.1 %	$\chi^2 = 24.214^{***}$
Exercise any sports	M: 555 W: 790	Yes, M: 76.8 % Yes, W: 86.5 %	No, M: 23.2 % No, W: 13.6 %				$\chi^2 = 21.196^{***}$
		Daily + several times a week (4 or 2)	Once a week (1)	2 – 3 times a month (0.5)	Once a month (0.1)	Less often (0.01)	
Sports: How often?	M: 442 W: 697	M: 19.2% + 47.5% W: 19.4% + 53.1%	M: 20.6 % W: 19.5 %	M: 7.0 % W: 5.5 %	M: 2.7 % W: 1.1 %	M: 2.9 % W: 1.4 %	$\chi^2 = 9.721^{(*)}$

Table 1: Participation or visits to certain cultural activities and exercising sports in Finland 2007, percentages, M = men, W = women - the gender impact on engagement in cultural or sports activities tested with χ^2 –statistics.

The most common leisure activity is sports since roughly 80 % of the respondents are exercising at least one a month. Approximately 15 % exercise daily, women are more active than men. In the sample the most common cultural activity is movies at a cinema. Roughly 6 % of men and 8 % of women go to a cinema every month or more often and almost 40 % of men and 50 % of women go to a cinema at least a few times in a year. Theater attendance is second in order. Every fourth of men and 43.5 % of women go to the theater at least a few times a year. Opera, classical and jazz music concerts are least participated. Museum visits, rock music concerts, musicals and art gallery visits are in between the above mentioned. There is no statistical difference between genders in the cases of rock music or jazz music concerts, otherwise women are more active cultural events participants.

A commensurate measure for the demand any cultural activity (say movies at a cinema) are defined and calculated as follows: "How often do you go to …?" About once a week = 3 hours per week – About once a month = 0.5 hours per week – A few times a year = 0.1 hours per week – Less often = 0.01 hours per week – Never = 0.001 hours per week. The measure for sports (l_s) is calculated in the following way: "Every day" is recoded 4 hours per week, several times a week, once a week, 2 – 3 times a month or once a month 2 hours, 1 hour, 0.5 hours, 0.1 hours per week, respectively and finally less frequently is recoded 0.01 hours per week. In the current study the dependent variable's $log\left(\frac{m}{l_s}\right)$ or $log\left(\frac{m}{l_1}\right)$ nominator is the (logarithm of) net household incomes and the denominator if the (logarithm of) the demand for sports (l_s) or the demand for other leisure activities (cinema, museum, etc.) as defined above.

The following socio-economic covariates available and used in this study are gender, education, age. The reference education alternative is not having any professional or vocational education. The age is classified using ten year ranges starting from 15 to 24 and ending at "older than 65". The reference range that is not used in the estimations is 35 to 44 years old. The reason for using the ranges is the assumption that family constraints due to parenting are likely to be highest when the parents are between 25 and 44 and presumably the family constraints will reduce any leisure activity. We assume that the leisure activity – age relationship is neither linear nor quadratic. The personal and household net income variables in the survey have some zero responses, the missing data is estimated assuming that incomes are determined by education, gender, age, weekly working hours and marital status. The results can be found in the Appendix.

The sport exercising question in the data is dichotomous: "Do you exercise any sports or physical activity?" If the answer was "no", the respondent was asked to skip the next question: "How of do you exercise sport at least 30 minutes so that you at least get out of breath of sweat?" The exact response numbers are presented in table 1. Roughly 20 % do not exercise any sports. Therefore there is a lack of information about the demand for sports ("how often do you exercise…?"). This may result in endogeneity of the demand variable. Following García, Lera-López and Suárez (2011) the estimation method first uses a dichotomous probit model for the probability of exercising any sports or physical activity and get the inverse Mills ratio to avoid the potential endogeneity problem. The sport demand equation (8) in the demand system (8 and 9) is estimated using SURE including the inverse Mills ratio. A similar procedure is used to estimate the working hours per week. In the sample there are pensioners and unemployed and otherwise persons do no respond anything the working hours per week question (roughly 43 % in the sample). A probit model for the probability of being employed is estimated and the inverse Mills ratio is obtained. This Mills ratio included to estimate working hours per week and these estimated coefficients the working hours per week are predicted for each in the sample. The results from the probability of exercising any sports, the probability of being employed and working hours per week are given in tables in the appendix. Table 2 (below) defines the variables and their descriptive statistics used in the demand system. The missing observations of the dependent variables have been replaced with "never".

The descriptive statistics show that the average household monthly net incomes (after income taxes), taken into account the estimated values if the observation is zero in the original data, is less than 2800€. The original data is reported using 10 different levels, the net incomes after taxes: 1 = less than 500€/month, … 10 = more than 10.000€/month. The interval midpoint is used to each observation. The average personal net incomes lower than the household incomes as expected. We can get the hourly earnings per hour by dividing the personal net incomes with the working hours per week (times 4) which is here on average about 22€. Approximately 50 % of respondents in the sample have either vocational school or college education. Person's with a master's degree is the third largest group by classification on the basis of the education. 19 % have no professional education meaning that they are either students or they have only (obligatory) elementary education.

Variables	Type		Mean	Standard deviation
Dependent variables			Statistics before taking logarithms	
$Log(m/l_{sport})$	Logarithm, m ~ scale, €	m = household monthly salaries if known (n = 1026), otherwise estimated (n = 362)	2768.31	1825.81
	l_s ~ scale, hours/week	l_s = [0.001 – 4] depending on *"How often do you exercise sport at least 30 min so that you at least get out of breath or sweat?"*	1.66	1.27
$Log(m/l_{movie})$	l_{movie} ~ scale, hours/week	l_{movie} = [0.001 – 3] depending on *"How often do you go to see a movie at a cinema?"*	0.094	0.274
$Log(m/l_{museum})$	$l_{classical\ music}$ ~ scale, hours/week	l_{museum} = [0.001 – 3] depending on *"How often do you go to museum?"*	0.041	0.140
$Log(m/l_{rock\ music})$	$l_{rock\ music}$ ~ scale, hours/week	$l_{rock\ music}$ = [0.001 – 3] depending on *"How often do you go to rock music concerts?"*	0.029	0.172
$Log(m/l_{opera})$	l_{opera} ~ scale, hours/week	l_{opera}= [0.001 – 3] depending on *"How often do you go to opera?"*	0.010	0.036
$Log(m/l_{classical\ music})$	$l_{classical\ music}$ ~ scale, hours/week	$l_{classical\ music}$ = [0.001 – 3] depending on *"How often do you go to classical music concerts?"*	0.024	0.132
$Log(m/l_{jazz\ music})$	$l_{jazz\ music}$ ~ scale, hours/week	$l_{jazz\ music}$ = [0.001 – 3] depending on *"How often do you go to jazz music concerts?"*	0.024	0.132
$Log(m/l_{musical})$	$l_{musical}$ ~ scale, hours/week	$l_{musicac}$ = [0.001 – 3] depending on *"How often do you go to classical musicals?"*	0.014	0.118
$Log(m/l_{theater})$	$l_{theater}$ ~ scale, hours/week	$l_{theater}$ = [0.001 – 3] depending on *"How often do you go to theater performances?"*	0.054	0.142
$Log(m/l_{art\ gallery})$	$l_{art\ gallery}$ ~ scale, hours/week	$l_{art\ gallery}$ = [0.001 – 3] depending on *"How often do you visit art galleries?"*	0.052	0.265
Independent variables				
Log w = log(monthly salary/working hoursx4)	Logarithm, w=hourly wage ~scale, €	Personal monthly salary	2531.40	1982.04
		Working hours per week	28.30	15.61
Vocational education	Binary	2 or 3 years after secondary school	0.295	0.456
College	Binary	2 or 3 years after secondary or upper secondary school	0.230	0.421
Bachelor	Binary	3 or 4 years after upper secondary school	0.097	0.295
Master	Binary	2 or 3 years after Bachelor's degree	0.166	0.371
Doctor	Binary	At least 4 years after Master's degree	0.022	0.145
Female	Binary		0.587	0.493
Age 15 - 24	Binary		0.109	0.311
Age 25 - 34	Binary		0.167	0.373
Age 35 – 44		Reference, excluded from the estimations	0.171	0.377
Age 45 - 54	Binary		0.186	0.389
Age 55 - 64	Binary		0.228	0.419
Age 65 -	Binary		0.139	0.346
<u>Father interested</u>: Reading	Binary		0.485	0.449
Movies	Binary		0.265	0.441
Pop music	Binary		0.176	0.381
Classical music	Binary		0.103	0.305
Visual arts	Binary		0.076	0.265
Sport	Binary		0.449	0.497
<u>Mother interested</u>: Reading	Binary		0.543	0.498
Movies	Binary		0.229	0.420
Pop music	Binary		0.186	0.389
Classical music	Binary		0.113	0.317
Visual arts	Binary		0.138	0.345
Sport	Binary		0.113	0.317

Table 2: Variables used in the study and descriptive statistics

The intergenerational transfer variables in the questionnaire are asked with the following questions: "Were your parents interested in something from the listed hobbies if you think about your childhood?" There are separate questions concerning father and mother. More than 50 % of respondent's mothers were interested in reading while the father's reading habit was somewhat less than 50 %. Movies at a cinema was second most often

mentioned if both genders are taken into account. There is a big difference in sport as a hobby between father and mother. Almost 45 % of the respondents mention that their father was interested in sport while the share of mothers interested in sport is about 11 %. The correlation coefficients of parents' hobbies shown in table 3 reveals that in general the hobbies are not overlapping. However, it is more common that both parents seem to have had a similar interest. The largest positive correlation coefficients appear in pop music ($\varrho_{f:pop, m:pop} = 0.44$), movies at a cinema ($\varrho_{f:movies, m:movies} = 0.41$) and classical music ($\varrho_{f:classical, m: classical} = 0.37$). Fathers' sport and reading habits seem to have a slightly negative correlation ($\varrho_{f:reading, f:sport} = -0.22$) and mothers' visual arts and classical music habits are positively correlated ($\varrho_{m:visual arts, m:classical music} = 0.39$).

	F: R	F: M	F: P	F: C	F: V	F: S	M: R	M:M	M:P	M:C	M:V	M:S
F: Reading	1	0.16	-0.06	0.18	0.14	-0.22	0.14	0.12	-0.05	0.14	0.07	0.02
F: Movies		1	0.21	0.12	0.16	0.14	0.16	**0.41**	0.18	0.11	0.09	0.09
F: Pop music			1	0.02	0.05	0.11	0.10	0.10	**0.44**	0.02	0.03	0.10
F: Classical m				1	0.27	-0.00	0.09	0.05	-0.04	**0.37**	0.16	0.02
F: Visual arts					1	0.02	0.12	0.19	0.04	0.24	0.26	0.02
F: Sports						1	0.13	0.11	0.18	0.04	0.08	0.20
M: Reading							1	0.19	0.09	0.21	0.18	0.03
M: Movies								1	0.21	0.07	0.10	0.13
M: Pop music									1	0.04	0.07	0.12
M: Classical m										1	**0.39**	0.03
M: Visual arts											1	0.02
M: Sports												1

Table 3: The correlation coefficients of parents' hobbies

Results

If the intergenerational transfer hypothesis is valid, parents' interest towards movies, pop music, classical music and visual arts should have a positive impact on the demand for movies, rock or jazz music, classical music and art gallery visits, respectively. In tables 4, 5 and 6 (below) the estimation results are presented.

	Movies	Rock music	Jazz music	Classical music	Movies	Rock music	Jazz music	Classical music
Log w	0.335*** (0.038)	0.369*** (0.239)	0.413*** (0.162)	0.361*** (0.037)	0.339*** (0.038)	0.372*** (0.041)	0.417*** (0.028)	0.363*** (0.036)
Vocational education	-0.020 (0.128)	0.322* (0.137)	0.176(*) (0.093)	0.067 (0.126)	-0.030 (0.128)	0.318* (0.137)	0.167(*) (0.093)	0.043 (0.122)
College	-0.103 (0.137)	0.431** (0.147)	0.280** (0.100)	-0.142 (0.135)	-0.104 (0.137)	0.420** (0.148)	0.275** (0.100)	-0.142 (0.131)
Bachelor	-0.440* (0.176)	0.145 (0.188)	0.265* (0.128)	-0.452** (0.173)	-0.415* (0.176)	0.137 (0.189)	0.283* (0.128)	-0.349* (0.169)
Master	-0.623*** (0.148)	0.441** (0.158)	-0.084 (0.107)	-1.126*** (0.145)	-0.553*** (0.149)	0.477** (0.160)	-0.032 (0.108)	-0.945*** (0.143)
Doctor	-1.073*** (0.306)	0.429 (0.326)	-0.267 (0.222)	-1.456*** (0.300)	-0.978** (0.306)	0.492 (0.329)	-0.193 (0.222)	-1.261*** (0.293)
Female	-0.396*** (0.087)	-0.235* (0.093)	-0.166** (0.063)	-0.527*** (0.085)	-0.411*** (0.087)	-0.259* (0.093)	-0.176** (0.063)	-0.529*** (0.083)
Age 15 - 24	-1.597*** (0.171)	-1.390*** (0.183)	-0.705*** (0.124)	-0.674*** (0.168)	-1.607*** (0.172)	-1.431*** (0.184)	-0.720*** (0.124)	-0.679*** (0.164)
Age 25 - 34	-0.679*** (0.150)	-0.720*** (0.160)	0.003 (0.109)	0.177 (0.147)	-0.715*** (0.149)	-0.779*** (0.160)	-0.023 (0.108)	0.122 (0.143)
Age 45 - 54	0.264(*) (0.142)	0.260(*) (0.151)	-0.170(*) (0.103)	-0.288* (0.139)	0.280* (0.142)	0.271(*) (0.152)	-0.159 (0.103)	-0.281* (0.136)
Age 55 - 64	0.349* (0.139)	0.374* (0.148)	-0.347*** (0.100)	-0.742*** (0.136)	0.390** (0.138)	0.429** (0.148)	-0.317** (0.100)	-0.716*** (0.132)
Age 65 -	-0.405* (0.179)	-0.503** (0.192)	-1.453*** (0.130)	-1.937*** (0.176)	-0.339 (0.179)(*)	-0.420* (0.192)	-1.405*** (0.130)	-1.868*** (0.171)
Father: Reading interested								
Mother: Reading interested								
Father: Movie interested	-0.229* (0.107)	0.002 (0.115)	-0.035 (0.078)	-0.040 (0.106)	-0.246* (0.107)	-0.059 (0.115)	-0.042 (0.077)	0.010 (0.102)
Mother: Movie interested	-0.268* (0.112)	-0.054 (0.120)	-0.003 (0.081)	-0.139 (0.110)	-0.315** (0.111)	-0.121 (0.119)	-0.041 (0.080)	-0.150 (0.106)
Father: Pop music interested	-0.199 (0.127)	-0.353** (0.135)	-0.135 (0.092)	-0.321** (0.124)				
Mother: Pop music interested	-0.315* (0.124)	-0.333* (0.133)	-0.243** (0.090)	-0.157 (0.122)				
Father: Classical music interested					-0.086 (0.150)	-0.208 (0.161)	-0.172 (0.109)	-0.565*** (0.144)
Mother: Classical music interested					-0.443** (0.144)	-0.010 (0.155)	-0.258* (0.105)	-0.916*** (0.138)
Father: Visual arts interested								
Mother: Visual arts interested								
Father: Sports interested								
Mother: Sports interested								
constant	10.843*** (0.224)	12.431*** (0.239)	12.987*** (0.162)	13.224*** (0.220)	10.787*** (0.223)	12.349*** (0.239)	12.948*** (0.162)	13.240*** (0.213)
R²	0.241	0.195	0.171	0.159	0.240	0.183	0.170	0.202
F	28.56***	22.00***	18.99***	17.49***	28.40***	20.48***	18.82***	22.95***

Table 4: Movies at a cinema, Rock, Jazz or Classical music demand, estimation results, SURE method, ***,**,*,⁰ denote 0.1 %, 1 %, 5 % or 10 % statistical significance, standard errors in parenthesis. N = 1388. Note: a negative sign indicates a positive influence

Estimation results show that both father's and mother's movie interest have an impact on the respondent's demand for movies at a cinema. It must be recalled that a negative coefficient in the results indicate a positive influence. Parents' pop music interest has a positive influence on the rock music demand and partially on jazz and classical music demand. The two latter are selective since mother's pop music taste has an impact on jazz music demand but father's pop music preference has not while the reverse is valid in the case of classical music. Father's pop music interest is important and mother's pop music interest is not. In general Linder's disease is

important since rising wages seem to diminish the demand for all leisure activities – the coefficient of log w is statistically positive in each demand function.

	Museum	Opera	Theater	Musicals	Museum	Opera	Theater	Musicals
Log w	0.357***	0.358***	0.270***	0.354***	0.356***	0.358***	0.275***	0.357***
	(0.050)	(0.031)	(0.039)	(0.033)	(0.049)	(0.030)	(0.039)	(0.033)
Vocational education	-0.096	0.046	-0.246(*)	0.097	-0.121	0.025	-0.260*	0.091
	(0.167)	(0.104)	(0.130)	(0.111)	(0.164)	(0.102)	(0.130)	(0.111)
College	-0.402*	-0.114	-0.504***	0.195	-0.402*	-0.118	-0.515***	0.187
	(0.179)	(0.112)	(0.140)	(0.119)	(0.176)	(0.109)	(0.140)	(0.119)
Bachelor	-0.664**	-0.355*	-0.695***	0.210	-0.551*	-0.274(*)	-0.672***	0.213
	(0.229)	(0.143)	(0.179)	(0.152)	(0.226)	(0.140)	(0.180)	(0.153)
Master	-1.610***	-0.914***	-1.012***	0.020	-1.429***	-0.776***	-0.951***	0.048
	(0.193)	(0.121)	(0.151)	(0.128)	(0.191)	(0.119)	(0.152)	(0.129)
Doctor	-1.792***	-0.880***	-0.716*	-0.010	-1.610***	-0.735**	-0.625*	0.037
	(0.398)	(0.249)	(0.312)	(0.265)	(0.392)	(0.244)	(0.312)	(0.266)
Female	-0.370**	-0.508***	-0.889***	-0.502***	-0.362**	-0.504***	-0.899***	-0.512***
	(0.113)	(0.071)	(0.089)	(0.075)	(0.111)	(0.069)	(0.088)	(0.075)
Age 15 - 24	-0.516*	-0.385**	-0.489**	-0.648***	-0.514*	-0.395**	-0.513**	-0.671***
	(0.223)	(0.140)	(0.175)	(0.148)	(0.220)	(0.136)	(0.175)	(0.149)
Age 25 - 34	0.068	0.089	0.290(*)	-0.042	0.025	0.050	0.262(*)	-0.067
	(0.195)	(0.122)	(0.153)	(0.130)	(0.191)	(0.119)	(0.152)	(0.129)
Age 45 - 54	-0.155	-0.141	-0.348*	-0.134	-0.157	-0.141	-0.336*	-0.126
	(0.185)	(0.116)	(0.145)	(0.123)	(0.181)	(0.113)	(0.144)	(0.123)
Age 55 - 64	-0.498**	-0.599***	-0.756***	-0.568***	-0.493**	-0.588***	-0.723***	-0.540***
	(0.180)	(0.113)	(0.141)	(0.120)	(0.177)	(0.110)	(0.141)	(0.120)
Age 65 -	-1.701***	-1.710***	-1.633***	-1.800***	-1.661***	-1.669***	-1.581***	-1.758***
	(0.234)	(0.146)	(0.183)	(0.156)	(0.229)	(0.142)	(0.182)	(0.155)
Father: Reading interested								
Mother: Reading interested								
Father: Movie interested	-0.044	-0.066	-0.113	-0.268**	0.033	-0.013	-0.109	-0.284**
	(0.140)	(0.088)	(0.110)	(0.093)	(0.137)	(0.085)	(0.109)	(0.093)
Mother: Movie interested	-0.117	-0.170(*)	-0.257*	0.048	-0.099	-0.169(*)	-0.304**	0.009
	(0.146)	(0.091)	(0.114)	(0.097)	(0.142)	(0.088)	(0.113)	(0.096)
Father: Pop music interested	-0.258	-0.226*	-0.116	-0.122				
	(0.165)	(0.103)	(0.129)	(0.110)				
Mother: Pop music interested	0.014	-0.048	-0.303*	-0.217*				
	(0.162)	(0.101)	(0.127)	(0.108)				
Father: Classical music interested					-0.652***	-0.587***	-0.332*	-0.193
					(0.192)	(0.119)	(0.153)	(0.130)
Mother: Classical music interested					-0.860***	-0.582***	-0.231	-0.050
					(0.185)	(0.115)	(0.147)	(0.125)
Father: Visual arts interested								
Mother: Visual arts interested								
Father: Sports interested								
Mother: Sports interested								
constant	12.992***	13.265***	12.314***	13.445***	13.051***	13.298***	12.274***	13.405***
	(0.291)	(0.182)	(0.228)	(0.194)	(0.285)	(0.177)	(0.227)	(0.193)
R²	0.094	0.172	0.152	0.144	0.124	0.210	0.153	0.140
F	10.10***	19.01***	16.61***	15.59***	13.32***	24.14***	16.68***	15.21***

Table 5: Museum, Opera, Theater or Musical demand, estimation results, SURE method, ***,**,0 denote 0.1 %, 1 %, 5 % or 10 % statistical significance, standard errors in parenthesis. N = 1388. Note: a negative sign indicates a positive influence

However, the household incomes in the dependent variable $log\left(\frac{m}{l_1}\right)$ and the hourly wage of the respondent are related and therefore the Linder's disease explanation must be interpret with caution. In table 4 the estimation results for movies at a cinema, rock, jazz and classical music are presented. In the demand system the first equation is always the demand for movies at a cinema. In table 5 museum, opera, theater and musical demand

equations are shown. Movies at a cinema is favoured by younger, female and highly educated consumers. Rock music is not favoured by consumers who have either vocational, college education or a master's degree in relation to not educated (students). The age structure of rock music concert participants is similar to cinema-goers. Jazz music is disfavoured by persons who have either vocational, college or bachelor level education and older than 45 seem to favour jazz while they do not favour movies or rock. Classical music is elite in terms of education and middle-aged do not seem to favour classical music. Opera is more elite in terms of education than classical music and it seems that the estimated threshold age is higher for opera visits than for classical music. The age structure of opera participants and musicals are similar but opera is more elite in terms of education than musicals. Any education variable is not significant in the case of musicals.

In table 6 art gallery and sport demand results are presented. Art gallery and museum seem to have a similar customer structure, which is not surprising due to their overlapping profile. Most of them have paintings and sculptures inside. Sport is totally different in terms of age structure and education. The youngest and oldest age cohorts are more active sport exercisers.

In tables 4, 5 and 6 the intergenerational transfer hypothesis is tested using parents' movie and pop or classical music interest as explaining variables. In table 7 the results of all available parents' hobbies as explanatory variables are presented. Only the intergenerational transfer variables are shown. In each SUR estimation, there are two equations so that the first is always movies at a cinema and father's and mother's interest towards movies is included in the estimations. Otherwise the remaining equation is different (pop, jazz, classical, museum, opera, theater, musical, art gallery or sport) and the one of the combinations in parents' interest is included: reading, pop, classical, visual arts or sports.

	Art gallery	Sport	Art gallery	Sport	Art gallery	Sport	Art gallery	Sport
Log w	0.383***	0.377***	0.383***	0.380***	0.382***	0.392***	0.382***	0.394***
	(0.047)	(0.051)	(0.046)	(0.051)	(0.047)	(0.028)	(0.046)	(0.028)
Vocational education	0.199	0.286(*)	0.172	0.281(*)	0.199	0.286**	0.172	0.282**
	(0.156)	(0.169)	(0.153)	(0.170)	(0.156)	(0.096)	(0.153)	(0.096)
College	-0.308(*)	-0.126	-0.316(*)	-0.131	-0.308(*)	-0.128	-0.316(*)	-0.130
	(0.168)	(0.182)	(0.165)	(0.182)	(0.168)	(0.103)	(0.165)	(0.103)
Bachelor	-0.565**	-0.249	-0.459*	-0.246	-0.565**	-0.240(*)	-0.459*	-0.237(*)
	(0.215)	(0.233)	(0.211)	(0.234)	(0.215)	(0.132)	(0.211)	(0.132)
Master	-1.375***	-0.448*	-1.215***	-0.413*	-1.375***	-0.456***	-1.214***	-0.433***
	(0.181)	(0.196)	(0.179)	(0.198)	(0.181)	(0.111)	(0.179)	(0.112)
Doctor	-1.334***	-0.192	-1.170**	-0.137	-1.334***	-0.202	-1.169**	-0.166
	(0.373)	(0.405)	(0.367)	(0.406)	(0.373)	(0.229)	(0.367)	(0.230)
Female	-0.386***	-0.602***	-0.371***	-0.617***	-0.386***	-0.612***	-0.371***	-0.621***
	(0.106)	(0.115)	(0.104)	(0.115)	(0.106)	(0.065)	(0.104)	(0.065)
Age 15 - 24	-0.641**	-0.988***	-0.647**	-1.008***	-0.641**	-0.986***	-0.647**	-0.996***
	(0.209)	(0.227)	(0.206)	(0.227)	(0.209)	(0.128)	(0.205)	(0.129)
Age 25 - 34	0.060	-0.002	0.035	-0.034	0.060	0.004	0.034	-0.014
	(0.183)	(0.199)	(0.179)	(0.198)	(0.183)	(0.112)	(0.179)	(0.112)
Age 45 - 54	-0.350*	-0.063	-0.355*	-0.053	-0.350*	-0.050	-0.356*	-0.043
	(0.173)	(0.188)	(0.170)	(0.188)	(0.173)	(0.106)	(0.170)	(0.106)
Age 55 - 64	-0.831***	-0.165	-0.839***	-0.130	-0.832***	-0.136	-0.839***	-0.113
	(0.169)	(0.183)	(0.166)	(0.183)	(0.169)	(0.104)	(0.165)	(0.104)
Age 65 -	-1.818***	-1.209***	-1.801***	-1.155***	-1.818***	-1.201***	-1.801***	-1.167***
	(0.219)	(0.238)	(0.214)	(0.237)	(0.219)	(0.135)	(0.214)	(0.134)
Father: Reading interested								
Mother: Reading interested								
Father: Movie interested	0.011	-0.092	0.113	-0.121	0.011	-0.088	0.112	-0.106
	(0.131)	(0.142)	(0.128)	(0.142)	(0.131)	(0.080)	(0.128)	(0.080)
Mother: Movie interested	-0.290*	-0.147	-0.267*	-0.191	-0.294*	-0.014	-0.273*	-0.041
	(0.137)	(0.149)	(0.133)	(0.147)	(0.137)	(0.084)	(0.133)	(0.083)
Father: Pop music interested	-0.115	-0.185			-0.117	-0.111		
	(0.155)	(0.168)			(0.154)	(0.095)		
Mother: Pop music interested	0.044	-0.252			0.041	-0.163(*)		
	(0.152)	(0.165)			(0.152)	(0.093)		
Father: Classical music interested			-0.810***	-0.105			-0.812***	-0.034
			(0.180)	(0.199)			(0.180)	(0.113)
Mother: Classical music interested			-0.642***	-0.143			-0.642***	-0.127
			(0.173)	(0.192)			(0.173)	(0.108)
Father: Visual arts interested								
Mother: Visual arts interested								
Father: Sports interested								
Mother: Sports interested								
Mills ratio (sport)					0.088	-2.530***	0.095	-2.533***
					(0.075)	(0.046)	(0.074)	(0.046)
constant	13.142***	7.369***	13.221***	7.315***	13.147***	7.236***	13.225***	7.201***
	(0.273)	(0.296)	(0.267)	(0.296)	(0.273)	(0.168)	(0.267)	(0.167)
R²	0.111	0.077	0.142	0.074	0.111	0.703	0.142	0.702
F	11.84***	8.25***	15.41***	7.94***	11.23***	194.49***	14.60***	193.44***

Table 6: Art gallery or sport demand, estimation results, SURE method, ***, **, *, ⁰ denote 0.1 %, 1 %, 5 % or 10 % statistical significance, standard errors in parenthesis. N = 1388. Note: a negative sign indicates a positive influence

	Movies	Rock music	Jazz music	Classical music	Museum	Opera	Theater	Musicals	Art Gallery	Sport
Father: Reading interested	-0.071 (0.088)	0.089 (0.094)	-0.013 (0.064)	-0.142(*) (0.086)	-0.138 (0.114)	-0.093 (0.072)	-0.025 (0.089)	-0.111 (0.076)	-0.245* (0.106)	-0.018 (0.116)
Mother: Reading interested	-0.268** (0.089)	-0.191* (0.095)	-0.068 (0.065)	-0.228** (0.087)	-0.375** (0.115)	-0.127(*) (0.072)	-0.365*** (0.090)	0.009 (0.077)	-0.450*** (0.107)	-0.123 (0.118)
Father: Movie interested	-0.229* (0.107)	0.002 (0.115)	-0.035 (0.078)	-0.040 (0.106)	-0.044 (0.140)	-0.066 (0.088)	-0.113 (0.110)	-0.268** (0.093)	0.011 (0.131)	-0.092 (0.142)
Mother: Movie interested	-0.268* (0.112)	-0.054 (0.120)	-0.003 (0.081)	-0.139 (0.110)	-0.117 (0.146)	-0.170(*) (0.091)	-0.257* (0.114)	0.048 (0.097)	-0.290* (0.137)	-0.147 (0.149)
Father: Pop music interested	-0.199 (0.127)	-0.353** (0.135)	-0.135 (0.092)	-0.321** (0.124)	-0.258 (0.165)	-0.226* (0.103)	-0.116 (0.129)	-0.122 (0.110)	-0.115 (0.155)	-0.185 (0.168)
Mother: Pop music interested	-0.315* (0.124)	-0.333* (0.133)	-0.243** (0.090)	-0.157 (0.122)	0.014 (0.162)	-0.048 (0.101)	-0.303* (0.127)	-0.217* (0.108)	0.044 (0.152)	-0.252 (0.165)
Father: Classical music interested	-0.086 (0.150)	-0.208 (0.161)	-0.172 (0.109)	-0.565*** (0.144)	-0.652*** (0.192)	-0.587*** (0.119)	-0.332* (0.153)	-0.193 (0.130)	-0.810*** (0.180)	-0.105 (0.199)
Mother: Classical music interested	-0.443** (0.144)	-0.010 (0.155)	-0.258* (0.105)	-0.916*** (0.138)	-0.860*** (0.185)	-0.582*** (0.115)	-0.231 (0.147)	-0.050 (0.125)	-0.642*** (0.173)	-0.143 (0.192)
Father: Visual arts interested	-0.118 (0.168)	-0.137 (0.181)	0.023 (0.123)	-0.257 (0.165)	-0.451* (0.217)	-0.120 (0.136)	-0.256 (0.172)	-0.155 (0.146)	-0.762*** (0.201)	+0.471* (0.223)
Mother: Visual arts interested	-0.371** (0.129)	0.161 (0.139)	-0.078 (0.094)	-0.491*** (0.127)	-0.781*** (0.167)	-0.451*** (0.105)	-0.087 (0.132)	-0.041 (0.112)	-0.812*** (0.155)	0.018 (0.171)
Father: Sports interested	-0.185* (0.090)	-0.172(*) (0.096)	-0.061 (0.065)	-0.133 (0.088)	-0.200(*) (0.117)	-0.183* (0.073)	-0.199* (0.091)	-0.008 (0.078)	-0.028 (0.109)	-0.238* (0.118)
Mother: Sports interested	0.136 (0.138)	-0.052 (0.147)	-0.058 (0.100)	-0.090 (0.135)	-0.011 (0.179)	-0.095 (0.112)	-0.099 (0.140)	-0.226(*) (0.119)	+0.275(*) (0.168)	-0.424* (0.181)

Table 7: The coefficient of Intergenerational transfer variables, SURE method, always movies at a cinema demand is the first equation and father's and mother's movie interest is included. ***, **, *, 0 denote 0.1 %, 1 %, 5 % or 10 % statistical significance. Note: a negative sign indicates a positive influence

The leisure activities that have got the most intergenerational transfer influences are the art gallery visits (8), movies at a cinema (7) and opera (7). Art gallery visits are influenced positively by both parents' reading habit, classical music and visual arts interest, mother's movie interest has also a positive impact while mother's sport interest has a negative effect on the demand for art gallery visits. Movies at a cinema is positively influenced by father's movie and sport habit, while mother's reading, movie, pop music, classical music and visual art interest have an influence on cinema demand. Jazz music events, sport and musicals are least influenced by parents' hobbies. Mother's classical and pop music preferences have an impact on the respondent's jazz music events participation. Visual art and sport are most likely exclusionary.

Mother's reading habit and classical music preference are the "most" influential intergenerational transfer effect sources. If a respondent's mother has (has had) a reading habit, then the respondent is more likely favouring art gallery visits, movies, opera, classical music, museums, theater and rock music events. If the respondent's father has (has had) a reading habit, the influence is more restricted, only art gallery and classical music demand increases.

In general the intergenerational transfer hypothesis is verified. Both father's and mother's visual art preference have a positive impact on art gallery and museum visits. Parents' classical music preference influence the

respondent's opera and classical music demand - and also art gallery and museum visits. Parents' movie hobby has a positive impact on the respondent's cinema demand and sport activity is inherited.

All statistically significant intergenerational transfer effects are listed in table 8 (below).

			Outcome									
			Art Gallery	Movies	Opera	Classical music	Museum	Theater	Rock music	Musicals	Sport	Jazz music	# significant
REASON		Mother: Reading	-0.450***	-0.268**	-0.127(*)	-0.228**	-0.375**	-0.365***	-0.191*				7
		Mother: Classical music	-0.642***	-0.443**	-0.582***	-0.916***	-0.860***					-0.258*	6
		Father: Sport		-0.185*	-0.183*		-0.200(*)	-0.199*	-0.172(*)		-0.238*		6
		Mother: Pop		-0.315*				-0.303*	-0.333*	-0.217*		-0.243**	5
		Father: Classical music	-0.810		-0.587***	-0.565***	-0.652***	-0.332*					5
		Mother: Visual art	-0.812***	-0.371**	-0.451***	-0.491***	-0.781***						5
		Mother: Movie	-0.290*	-0.268*	-0.170(*)			-0.257*					4
		Father: Pop			-0.226*	-0.321**			-0.353**				3
		Father: Visual art	-0.762***				-0.451*				+0.471*		3
		Mother: Sport	+0.275(*)							-0.226(*)	-0.424*		3
		Father: Reading	-0.245*			-0.142(*)							2
		Father: Movie		-0.229*						-0.268**			2
		# significant	8	7	7	6	6	5	4	3	3	2	

Table 8: Statistically significant intergenerational transfer effects, note a negative sign indicates a positive influence.

In addition, table 8 reveals that jazz music, exercising sport and musicals are the most "individual" events. They are least influenced by parents' hobbies. Jazz music participation is influenced only by mother's classical or pop music tendency. If mother has an interest towards classical or pop music then the respondent is more likely participating jazz music events, however, mothers classical and pop music favouritism have also an impact on movie attendance. Exercising sport is influenced positively only by father's or mother's sport exercising activity and negatively by father's visual art favouritism. Visiting musicals are somewhat less influenced by parents' hobbies than theater visits in general. Only mother's pop music and sport preference and father's movie preference have an impact on the respondent's musical visits while the intergenerational transfer sources for

theater visits are more multifold. Mother's classical music and reading habits are among the sources of theater visits.

One of research questions raised in the beginning of the study is related to how this intergenerational transfer hypothesis is valid among different age categories. Therefore separate analysis is carried out using three subsamples: the youngest (from 15 to 34, n = 383), middle-aged (from 35 to 54, n = 496) and the oldest (more than 55, n = 509). The results are shown in table 9 (below). Only the coefficients of the intergenerational transfer variables are presented.

	AGE	Movies	Rock music	Jazz music	Classical music	Museum	Opera	Theater	Musicals	Art Gallery	Sport	# signif.
Father: Reading interested	15-34	-0.051	-0.007	-0.128	-0.246	-0.613**	-0.162	-0.038	-0.140	-0.280	0.012	1
	35-54	-0.038	-0.038	-0.038	-0.167	0.119	-0.049	-0.091	-0.009	-0.150	-0.003	0
	55-	-0.157	-0.053	0.080	-0.023	0.008	-0.071	0.059	-0.254(*)	-0.266	-0.106	1
Mother: Reading interested	15-34	-0.342(*)	-0.137	-0.175	-0.281(*)	-0.328	-0.073	-0.277(*)	-0.058	-0.356(*)	-0.047	4
	35-54	-0.261(*)	-0.261(*)	-0.103	-0.060	-0.604**	-0.062	-0.430**	0.105	-0.397*	0.068	5
	55-	-0.217	0.012	0.041	-0.295*	-0.180	-0.189	-0.407**	-0.070	-0.509**	-0.051	3
Father: Movie interested	15-34	-0.190	-0.340(*)	0.186	-0.021	0.056	-0.028	0.132	-0.177	0.165	-0.003	1
	35-54	-0.296(*)	0.072	-0.050	-0.078	0.064	0.023	-0.198	-0.151	0.036	-0.118	1
	55-	-0.130	-0.001	-0.255(*)	0.104	-0.269	-0.198	-0.222	-0.526*	-0.075	-0.103	2
Mother: Movie interested	15-34	-0.370	0.043	-0.039	0.199	0.066	0.035	-0.149	0.006	0.008	0.174	0
	35-54	-0.106	-0.180	0.010	-0.097	-0.104	-0.114	-0.095	0.127	-0.321	-0.059	0
	55-	-0.372(*)	0.004	0.047	-0.410*	-0.167	-0.315(*)	-0.421(*)	0.026	-0.450(*)	-0.094	5
Father: Pop music interested	15-34	-0.340(*)	-0.570*	-0.172	-0.092	-0.403	-0.095	-0.305	0.041	-0.417(*)	-0.230(*)	4
	35-54	-0.133	-0.287	-0.212	-0.585**	-0.609*	-0.501**	-0.117	-0.410*	-0.016	-0.337**	5
	55-	0.076	0.037	0.122	-0.099	0.811*	0.146	0.279	-0.119	0.523	+0.424(*)	2
Mother: Pop music interested	15-34	-0.182	-0.202	-0.262*	-0.381*	-0.211	-0.123	-0.335(*)	-0.257(*)	-0.024	-0.267(*)	5
	35-54	-0.527**	-0.468*	-0.269(*)	-0.065	0.052	-0.002	-0.288	-0.330*	0.003	0.005	4
	55-	-0.265	-0.400(*)	-0.209	0.037	0.228	-0.041	-0.396	0.155	0.014	-0.277	1
Father: Classical music interested	15-34	-0.074	-0.765(*)	-0.299(*)	-0.462(*)	-0.964**	-0.763***	-0.655*	-0.385(*)	-0.730*	-0.049	8
	35-54	0.148	0.216	-0.141	-0.556*	-0.537(*)	-0.598**	-0.182	-0.186	-0.343	-0.036	3
	55-	-0.438	-0.282(*)	-0.016	-0.363	-0.363	-0.263	-0.230	-0.065	-1.168***	-0.209	2
Mother: Classical music interested	15-34	-0.531*	0.113	-0.302(*)	-1.030***	-1.103***	-0.710***	-0.180	-0.098	-0.470(*)	-0.337(*)	7
	35-54	-0.528*	-0.346	-0.213	-0.489*	-0.833**	-0.210	-0.165	0.107	-0.662*	0.066	4
	55-	-0.220	0.326*	-0.275	-1.343***	-0.585	-0.866***	-0.467	-0.303	-0.601(*)	-0.109	4
Father: Visual arts interested	15-34	-0.238	-0.602	0.015	-0.467(*)	-0.861*	-0.131	-0.690*	-0.260	-1.116***	0.046	4
	35-54	-0.421(*)	-0.126	0.032	-0.298	-0.507	-0.245	-0.330	-0.154	-0.438	0.058	1
	55-	0.472	0.278	0.153	0.206	0.330	0.157	0.348	-0.165	-0.473	0.041	0
Mother: Visual arts interested	15-34	-0.289	0.450	-0.098	-0.377(*)	-0.928***	-0.349*	-0.018	-0.044	-0.527*	+0.277(*)	5
	35-54	-0.201	0.098	0.071	-0.456*	-0.472(*)	-0.392*	0.046	0.009	-0.839***	-0.162	4
	55-	-0.717*	-0.168	-0.429*	-0.789**	-1.298***	-0.700**	-0.584(*)	-0.148	-1.295***	-0.098	7
Father: Sports interested	15-34	0.085	0.041	0.048	0.054	0.002	0.025	0.187	0.042	-0.047	-0.228(*)	1
	35-54	-0.192	-0.320*	0.058	-0.243(*)	-0.403*	-0.221(*)	-0.354*	-0.052	-0.084	-0.223*	6
	55-	-0.353*	-0.164(*)	-0.267*	-0.147	-0.075	-0.288*	-0.320*	0.037	0.081	-0.320*	6
Mother: Sports interested	15-34	-0.176	0.113	-0.306(*)	-0.456*	-0.452	-0.180	-0.453(*)	-0.164	-0.011	-0.505*	4
	35-54	0.369(*)	-0.203	-0.124	0.080	0.352	0.038	0.258	-0.169	+0.604*	-0.470***	3
	55-	0.127	-0.136	0.334(*)	0.025	-0.141	-0.356	-0.263	-0.419	0.042	-0.287	1

Table 9: Intergenerational transfer effects, different age groups, SURE method, ***,**,*,0 denote 0.1 %, 1 %, 5 % or 10 % statistical significance. Note: a negative sign indicates a positive influence

In general the coefficients of the intergenerational transfer source variables in table 7 seem to be the averages of the coefficients listed in table 9. In the case of movies and mother's reading habit the coefficient is -0.268** and the corresponding coefficient for each age groups are -0.342(*), -0.261(*) and -0.217 indicating that the oldest age group's movie attendance is not influenced by mother's reading habit. The "most" influential sources that have an effect on cultural participation of a young (15 – 34) respondent are father's classical music (8) and mother's

classical music (7) tendency. Visual arts and pop music habits are the second or third in the list. Parents' movie habit has the least effect of a young consumer's cultural participation decisions. Pop music and sport seem to the most influential classification source when the middle-aged are analysed. Classical music is third in the list. Father's reading habit has no effect on any cultural event participation of a middle-aged consumer while mother's reading habit is rather influential. In the case of middle-aged persons, parents' movie habit has the least impact on cultural participation decisions while the movie habit is a rather influential source in the case of older persons. The oldest age cohort seems to be most influenced by mother's visual arts interest. All other except rock music, musicals and sport exercising habits are affected by the visual arts interest of the respondent's mother. Father's visual arts interest has no effect at all on the cultural or sport habits of the oldest cohort in the sample.

Mother's reading habit seems to have a stable effect on theater or art gallery visits. Regardless of the age group, if mother is /has been an active literature consumer then the child is more likely to visit theater or art galleries. If the mother is not an active literature person, then the respondent is less likely to visit theater or art galleries. Father's sport exercising habit has a positive effect on his children's sport exercising habit regardless of the child's age. Therefore the intergenerational transfer effect is stable. Father's pop habit has an effect on sport activity of the child but the sign changes from positive (young, middle-aged) to negative (old). Classical music participation and art gallery visits are influenced by the mother's classical music or visual art habit. The effect is very strong and stable throughout the child's life and independent of the age. Mother's visual art hobby has also a stable effect on her children's museum or opera visits.

Conclusion

The results indicate that intergenerational transfer hypothesis is valid. We do indeed inherit cultural habits and taste from our parents. We seem to visit similar cultural events that our parents do (did). The youngest age cohort is by far most influenced by parents' classical music interest. Visual arts and pop music interest of the parents seem to be second and third most influential hobbies when only the youngest ages are considered. Parents' pop music and sport hobbies are the most influential sources when the cultural and sport participation

of the middle-aged are studied. Mother's visual arts interest and father's sport interest are most important roots of the cultural and sport participation decisions of the oldest age cohort.

In general age, gender and education are important determinants of cultural participation. The youngest who have less family constraints are more active than middle-aged and more than 55 years old are more active participants except in the cases of movies at a cinema or rock music. Theater attendance, arts gallery visits and classical music concert visits increase after 45 years age. Visiting musicals is not sensitive to education while all other cultural events are elite in terms of education. The only exception is rock music concerts in which more educated seem to visit less than the reference group – students. Women are more active in all cultural activities studied here. The χ^2 statistics shown in table 1 illustrates that there are no gender differences in rock and jazz music participation but the results in table 4 propose that women are more active participants in rock or jazz music concerts when all other relevant participation related variables have been taken into account.

The constant elasticity of substation (CES) utility function is used here to model the leisure activities demand. The structure of consumer preferences is CES since the estimation equations are mathematically convenient and the interpretation of the variable coefficients are fairly clear. Since the cultural or sport participation variable is in the denominator of each equation the principle of interpretation is reverse: a negative coefficient is reversely interpreted positively. The positive coefficient of the hourly wage variable means therefore that in cultural participation decisions the lost income has a negative effect on the demand.

Most of the intergenerational transfer effects are not stable throughout the child's age. Only mother's classical music or visual art habits seem to have a stable and positive effect on the classical music concert participation and on the art gallery visits of the child regardless of the age. However, the father's corresponding classical music or visual art habits have a positive effect on the classical music concert participation or on the art gallery visits of a child when he/she is rather young.

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Appendix

	Net personal incomes, n = 1336	Net household incomes, n = 1026
Vocational education	154.60 (91.18)[(*)]	-128.57 (160.50)
College degree	494.62 (98.33)[***]	430.59 (173.77)[*]
Bachelor's degree	540.18 (125.45)[***]	452.93 (220.39)[*]
Master's degree	906.78 (105.51)[***]	946.50 (186.15)[***]
Doctoral degree	1468.20 (218.29)[***]	1225.40 (382.55)[**]
Female	-523.21 (62.15)[***]	-307.34 (109.59)[**]
Age: 15 - 24	-893.37 (122.08)[***]	390.91 (224.95)[(*)]
Age: 25 - 34	-275.48 (106.35)[**]	-392.25 (186.96)[*]
Age: 45 - 54	84.66 (101.36)	-25.16 (177.47)
Age: 55 - 64	-151.45 (98.27)	-433.85 (176.46)[*]
Age: 65 -	-531.78 (111.05)[***]	-830.86 (213.20)[***]
Common law marriage		2670.97 (148.19)[***]
Marriage		2880.68 (130.13)[***]
Hours worked/week		12.93 (3.05)[***]
Constant	1645.02 (109.36)[***]	-23.35 (112.36)
R²	0.186	0.353
F	29.90[***]	55.02[***]

Table 10: Net personal or household incomes, Determination Equations, OLS

	Exercise any sports
Vocational education	0.037 (0.111)
College degree	0.375 (0.125)**
Bachelor's degree	0.521 (0.174)**
Master's degree	0.631 (0.148)***
Doctoral degree	0.513 (0.309)(*)
Female	0.254 (0.081)**
Age: 15 - 24	0.212 (0.180)
Age: 25 - 34	-0.184 (0.147)
Age: 35 - 44	Ref
Age: 45 - 54	-0.083 (0.141)
Age: 55 - 64	-0.298 (0.132)*
Age: 65 -	-0.338 (0.147)*
Marital status: Single	-0.219 (0.151)
Marital status: Married	-0.172 (0.119)
Father sporty active	0.175 (0.084)*
Mother sporty active	0.238 (0.144)(*)
Constant	0.677 (0.181)***
McFadden Pseudo R²:	0.0646
χ^2–test:	89.995

Table 11: A Probit equation for exercising any sports.

	Employed (probit)	Working hours per week (OLS)
Constant	0.173 (0.143)	22.598 (0.845)***
Owner-occupied flat with housing loan	0.244 (0.086)**	4.238 (0.511)***
Vocational education	0.335 (0.113)**	4.330 (0.670)***
College degree	0.514 (0.125)***	5.564 (0.724)***
Bachelor's degree	0.406 (0.154)**	4.288 (0.923)***
Master's degree	0.542 (0.133)***	4.784 (0.776)***
Doctoral degree	0.359 (0.284)	5.741 (1.605)***
Female	-0.194 (0.079)*	-3.784 (0.457)***
Age: 15 - 24	-0.759 (0.147)***	-15.365 (0.915)***
Age: 25 - 34	-0.198 (0.131)	-3.076 (0.784)***
Age: 45 - 54	0.236 (0.134)(*)	2.850 (0.753)***
Age: 55 - 64	-0.668 (0.123)***	-11.113 (0.754)***
Age: 65 -	-2.156 (0.178)***	-26.113 (0.864)***
Inverse Mills ratio (obtained from probit)		21.386 (0.313)***
	McFadden Pseudo R²: 0.233	R² : 0.838
	χ^2–test: 442.16***	F-test: 554.70***

Table 12: A Probit Equation for Being Employed and Working Hours per Week (OLS) Determination Equation