

**EDUCATIONAL PERFORMANCE AND CULTURAL CONSUMPTION:
SOME EVIDENCE FROM OECD TEENAGERS**

V. Fernández-Blanco*

M. García-Diez*

J. Prieto-Rodríguez*

***Departamento de Economía - Universidad de Oviedo - Spain**

ABSTRACT

The aim of this paper is to analyse the young people's cultural consumption habits in the OECD countries. There are many studies that describe the characteristics of cultural goods consumers in different countries (i. e. Baumol and Bowen 1966; Throsby and Withers, 1979; Towse, 1994, O'Hagan, 1996) but they are specially related to adult people. On the other hand, there are many opinions arguing that young people's cultural consumption could be very important since in some sectors, such as movies, they represent a relevant market share and, in any case, they are the audience of the future. However, the researches devoted to this group of population are very scarce.

Our paper is focused on this group of population, specifically in fifteen years old teenagers. Using a database coming from the PISA (Programme for Indicators of Student Achievement) Project, that in 2000 includes a survey with a sample of around 250.000 teenagers coming from 27 OECD and 4 non-OECD countries, we make a comparative analysis of their current consumption of some cultural commodities (movies, museums and art galleries, theatre and other performing arts, assistance to popular music concerts and to sport events). This database also gives us relevant information on the socio-economic characteristics of the teenagers and their families (sex, level of studies, size of the family,...), their educational performing and their parents' compromise with their cultural and educative activities. Using all this information, we estimate some multiple discrete choice econometric models to characterise the young audience of each kind of cultural good in each country, and to discover if there are relevant differences or common features among them.

INTRODUCTION

Tastes and taste formation are very common discussing topics in Cultural Economics. In general, there are two approaches to tastes on this field. First, originally inspired by Stigler and Becker (1977), considers tastes as a constant and, more or less, all people have the same preferences. Hence we cannot find changes in tastes but changes in their form of expression and in people's consuming skills (McCain, 1981, 1995 y 2003). It is important to notice that, following this approach, paternalism or any other policy devoted to guide individual consumption are useless. Second, tastes are the outcome of a dynamic process of learning by consuming (Lévy-Garboua and Montmarquette, 1996). In this case, cultural goods are experience goods and their taste is able to be changed through repeated exposure and experience (Lévy-Garboua, 2003) and, of course, policy decisions could be very important in the cultivation of taste process.

Childhood exposure to the arts is close to these ideas. Obviously, children are the future demand of any cultural good and they are in a crucial moment of their taste formation process, where participation and exposure to the arts and education in general would play the main roles. However there are only a few studies on children exposure to the arts (Morrison and West, 1986; Abbé-Decarroux, 1995) and their outcomes are not very conclusive: for instance, Morrison and West (1986, p. 157) point out that "child participation is a powerful predictor of adult theatre attendance" but they cannot reach a similar conclusion on exposure. Under these circumstances, McCain (2003, p.446) says that "these studies may be an indirect evidence that cultivation of taste is a real possibility".

Our aim is to achieve some new empirical evidence about young people's consumption of certain kinds of cultural goods¹. We will pay special attention, on the one hand, to the effect of education and, in particular, to the students' performance in the education system; and, on the other hand, to the influence of familiar environment on young people's consumption choices. We suppose that both factors affect the taste formation process and, even, that the relative's consumption generates some external effects that could influence teenagers' behaviour. As usual, we have also included a set of socio-economic variables to control personal characteristics of the individuals or their family (as gender, marital status, familiar responsibilities, relationship with the economic activity, and so on).

¹ Studies that analyses the characteristics of adult cultural consumers are more frequent (i. e. Baumol and Bowen 1966; Throsby and Withers, 1979; Towse, 1994, O'Hagan, 1996)

Moreover, we pretend to include in our paper some international comparisons using the same cohort of people (fifteen years old teenagers) to analyse the situation in a group of countries that can represent different cultures, geographical areas and levels of economic development. With this procedure, we want to achieve other interesting target: testing if familiar environment and educational level influences are more or less the same among this group of countries and even if they are independent from other features as, for instance, the degree of economic development or the family income.

DATA

To achieve our aims we use data coming from the Survey of the OECD's Programme for International Student Assessment (PISA). Its declared objective is "to measure how young adults, at age 15 and therefore the end of compulsory schooling, are prepared to meet the challenges of today's knowledge societies" (OECD, 2001, p 14); specifically, it wanted to know how students can use what they have learned in reading, mathematics and science. In 2000 a PISA survey was conducted to a sample of more than a quarter of a million students, representing almost 17 million 15-years-olds enrolled in the schools of the 32 participating countries (the 28 OECD countries plus Brazil, Latvia, Liechtenstein and Russia). The majority of the questions of this survey were related to educational items, but there were also some questions about the socio-economic characteristics of the student and his/her family, such as gender, economic and social background, and his/her activities at home and school, including some leisure and cultural activities like attending to pictures, performing arts, pop concerts or sporting events. So, although PISA is a programme oriented to educational aspects, it also offers some information about cultural performance of 15-years-olds and the possible influence of their parents and relatives and their familiar environment. Specifically, it gives us data on young people's attendance to the cinemas, to the theatres or to the concerts of music, and it also collects information about other cultural or leisure habits (as reading or going to live sports). Related to the familiar environment, a variable that is specially relevant in our research, this Survey offers us information about the parents' educational level and other cultural behaviours, specially if the interviewee consumes cultural products jointly with her parents or if the family talk about cultural matters and devices.

Due to we have a lot of information, we have selected only two cultural goods and seven countries. First, we have chosen attendance to cinema and to theatre. Both commodities are consumed outside home, usually they have been presented as possible substitutive goods and, finally, the former can be considered as a market-oriented industrial good, while the last is more linked to the non-profit sector. Second, we have chosen nine countries that we consider as

representatives of different cultures and levels of economic development. Then, we have included USA; France, Germany and, obviously, Spain representing the European Union (EU) developed countries; we also have added Poland as an emerging countries and new members of the (EU); representing Asia, we have considered Korea²; and finally we have included Mexico as a developing country that also covers the Latin-American community.

As a first step in our analysis, in Table I we offer a brief description of the cinema and theatre consumption habits in these seven countries. Following the Survey, these habits can be classified in four groups: never going to cinema or theatre, going 1 or 2 times a year, going 3 or 4 times a year and going more than 4 times a year

The first characteristic we can observe is that young people consumes much more cinema than theatre.

Second, Korea is notoriously different from the rest of countries. Young Koreans do not consume theatre or cinema. In the case of the last, 70.5 percent never go to the cinema and only a 7.4 percent go three or more times a year. The figures corresponding to theatre are more pessimistic: 88 percent never go and only 2 percent go three or more times.

Table I: Attendance to cinema and theatre

		Never	1 or 2 times a year	3 or 4 times a year	More 4 times a year
France	Cinema	5.4	19.4	22.6	52.6
	Theatre	66.3	27	4.4	2.3
Germany	Cinema	4	18.1	26.7	51.2
	Theatre	58.5	33.7	5.5	2.2
Korea	Cinema	70.5	21.9	3.7	4
	Theatre	88.1	10.2	1.2	0.5
Mexico	Cinema	28.4	26.9	14.1	30.6
	Theatre	60.3	30	6.6	3.1
Poland	Cinema	9.7	38	22.3	30
	Theatre	42.9	40.2	10	6.9
Spain	Cinema	7.4	16.1	18.5	57.9
	Theatre	54.4	34.9	7.7	3
USA	Cinema	2.5	11.3	15.4	70.7
	Theatre	47.2	38.8	8.4	5.6

Source: PISA 2000

² We have rejected Japan because in our Survey there is not information about some relevant variables in our study.

Third, the different behaviour between cinema and theatre is higher in the case of the developed countries where pictures seem to be an important product of youth leisure.

Fourth, the consumption of cinema is specially important in USA: only a 2.5 percent of young Americans go to cinema while 70.7 percent do it four or more times. On the other hand, almost one half (47.2 percent) never goes to the theatre and a 14 percent go three or more times a year.

Fifth, we can identify a, more or less, homogeneous behaviour among developed European countries. The figures of non-attendants to cinema are quite small (from 4 percent in Germany to 7.4 percent in Spain) and more than a half of their young people go more than four times a year. In the case of theatre, between 55 percent (Spain) and 66 percent (France) never go and no more than 10 percent go more than three times a year.

Sixth, emerging European countries share some characteristics that make them different from other European countries and, in some sense, it could be identified as a soviet system inheritance. Thus, the figures of cinema attendance are smaller than the corresponding to developed countries (young people that go to the cinema more than four times a year represent between 30 and 40 percent), but we can identify a certain approximation path.

Finally, we discover serious differences in Mexico. Young people are a relevant market share in the case of cinema, although their attendance is lesser than in USA or Europe (almost a thirty percent of young Mexicans never go); however, these differences are narrower in the case of theatre, specially when we compare Mexico with the developed European countries where we can find very similar percentages.

In sum, we can identify the presence some relevant differences in the young people's behaviour across the different countries considered.

THE MODEL

To analyse what factors determine these differences and, simultaneously, define the profiles of cinema and theatre attendants in each country we propose to estimate two multinomial ordered probit model, oriented to cinema and theatre consumption respectively, where the dependent variables are the attendance to cinema and theatre. Since these variables are made up of a scale of four ordered answers, multinomial probit (or logit) models do not

allow us to capture the ordinal nature of these variables. As Greene (2000) and Asworth and Johnson (1996) point up, multinomial ordered probit (or logit) models are the best methods of estimation in these cases.

In general terms, a multinomial ordered probit model could be presented as follows:

$$y^* = \beta X + \varepsilon$$

where y^* is not observable, X is a vector of independent variables and ε is normally distributed.

When you ask a person about his or her attendance to cinema (theatre), he or she would want to give you an answer according to his or her preferences (y^*). However the PISA Survey only gives him or her four alternative responses. So, he or she has to select the closer answer to his or her preferences. Both in the cases of cinema and theatre, the structure of answers that we can observe in the survey (y_i), and their relationship with the unobserved preferences (y_i^*) is:

$y_i = \text{never} = 0$	if $y_i^* \leq 0$
$y_i = 1 \text{ or } 2 \text{ times a year} = 1$	if $0 < y_i^* \leq \mu_1$
$y_i = 3 \text{ or } 4 \text{ times a year} = 2$	if $\mu_1 < y_i^* \leq \mu_2$
$y_i = \text{More than 4 times a year} = 3$	if $\mu_2 < y_i^*$

The μ s are unknown parameters and they should be estimated together with the vector of parameters β .

The vector of explanatory variables (X) includes some socio-economic characteristics of the interviewee and her (his) family, with special attention to certain variables that can reflect the cultural environment of the family as a group. With all these variables we want to approximate both the individual's process of taste formation and the family budget constraint. We can group these variables into the following categories:

- Personal characteristics: includes gender, birthplace, city of residence, public (or private) school and performance in reading comprehension tests.
- Familiar characteristics: includes parents' work and level of studies.
- Income variables: with this group of variables we try to approximate the income effect and we include some characteristics of the family equipment and cultural possessions.
- Cultural environment of the family: in this case we try to find if there is a cultural joint consumption or attitude in the family. Of course, some other variables included in the previous group can also contribute to this information.

EMPIRICAL RESULTS

First of all, the correspondent likelihood ratios endorse the goodness of all of our estimations and all the μ parameters are statistically significant so we can confirm the existence of groups with different strength in the consumption of cinema a theatre in all the countries.

Due to the quantity and complexity of the results of these estimations, our strategy to comment them is to check if the principal hypothesis previously advanced are confirmed or not in general and then, we will analyse if there are significant behavioural differences among countries and between cinema and theatre inside each one of them (Tables II and III sum up the principal results).

- The educational variable, measured by the interviewee's score in a reading comprehension test, seems to have a positive and significant influence, in the case of cinema, in almost all the countries. Only in the case of Korea the coefficient is not statistically significant. Hence, we can conclude that the best your educational performance the higher probability of attendance to cinema. In theatre the results are not so robust. Although one could expect that education has a more relevant role in the theatre taste formation process, we only observe a positive effect in the European countries. This variable is not significant in the American ones and, even more surprising, it has a negative effect in Korea. These results invite us to a further investigation trying to test if there are significant differences educational systems for example if European countries offer more theatre experiences at the school or, in the case of USA, if it is more linked to audiovisual culture.
- Other source of potential influence from the educational system is the presence of significant differences between interviewees belonging to public or private schools. We want to test if one of tem is more interested in cultural products than the other. We do not have obtained a general conclusion but, when the correspondent variable (*PRIVSCHOOL*) is statistically significant (in Spain, Germany and Poland for theatre, and Spain and Mexico for cinema) it has a positive sign. Then, we can conclude that, in this cases and specially in Spain, private schools are more interested in culture, due to their students have a higher probability of attendance to cinema or theatre.
- The variable *OTHELANG*, that covers the ability of speaking foreign languages at home, can also be linked to high educational level. It reinforces the effect of the

previous variables but only in few cases, as cinema in Spain or theatre in France and Poland.

- The familiar environment has an important influence on the young people's consumption of cinema and theatre, as we have hypothesised above. Our set of variables that measure the frequency of talking about books, films or TV with the parents are very significant both in cinema and theatre and, in general terms, they have an increasing effect. Hence talking about cultural commodities seems to be a very good incentive to consume them, and this result is independent of the economic development or the peculiar background of the country.
- The educational level of the interviewee's parents can be interpreted as proxies of cultural environment and heritage. In general terms, and when these variables are statistically significant, the father's level of studies tends to have a positive influence on cinema and theatre consumption while the mother's one tends to have a negative effect. Poland and Korea are rule exceptions and Mexico deserves a particular comment because both parents' educational level have a positive, and increasing, effect in both goods. In sum, we can opine that, in the most developed western countries, fathers have a leading role in the taste formation process.
- Other variable related to cultural environment is *CULPOSS*, that represents the presence of some cultural possessions at home, and its effect is positive in all the countries.
- Adding the effect of the last three groups of variables we conclude that living a good cultural environment increases seriously the probability of cinema and theatre consumption.
- We also have tested the presence of a positive income effect using variables that define the presence of certain variables that pick up in the family equipment. In general terms these variables tend to have a positive impact reinforcing the presence of the income effect. This situation is remarkable in the case of having a personal room (*ROOM*) or being connected to the Internet (*INTERNET*) and in the case of cinema where they are always significant and have a positive effect on consumption. It is also remarkable that we cannot find any sign of income effect in the case of theatre consumption in USA and Germany and a very weakened sign in the case of France. Due to they are the richest countries of our sample it seems that, with the economic development, theatre loses its characteristic of an elite product

- We also interpret the presence of some positive and significant coefficients of the variable *MWORK*, linked to the mother's work, as a new symptom of a positive income effect.
- We have also tested the size of the city of residence influence on the probabilities of consuming both types of cultural products and both activities can be considered as urban behaviours. Moreover, if we look at the size of the coefficients, we conclude that young people who live in big cities (more than 1,000,000 inhabitants) have the highest probabilities of attending cinema and theatre, except in the case of theatre Spain where this probability belongs to young people living in small and middle towns (from 15,000 to 100,000 inhabitants). Korea is the unique exception because the probability of attendance to cinema and theatre is higher in rural areas.

Finally we must remark the presence of significant gender differences between good and countries. First, theatre is a women activity in all the analysed countries. Second, cinema presents all the possible results: in USA and Korea we do not identify any gender difference, while women have higher probability of attendance in Spain and Germany and men in France, Mexico and Poland.

APPENDIX 1

In this Appendix we define the variables used in this paper

A. Dependent Variables

CINEATTEND: Ordered discrete variable; it takes the following values:

- 1, if the interviewee never goes to the cinema
- 2, if the interviewee goes to the cinema 1 or 2 times a year
- 3, if the interviewee goes to the cinema 3 or 4 times a year
- 4, if the interviewee goes to the cinema more than 4 times a year

THETATTEND: Ordered discrete variable; it takes the following values:

- 1, if the interviewee never goes to the theatre
- 2, if the interviewee goes to the theatre 1 or 2 times a year
- 3, if the interviewee goes to the theatre 3 or 4 times a year
- 4, if the interviewee goes to the theatre more than 4 times a year

B. Independent Variables

MALE: Dummy variable; it takes value one when the interviewee is a man, and zero otherwise.

FPRIMARY: Dummy variable; it takes value one when the interviewee's father has primary studies, and zero otherwise.

FSECOND: Dummy variable; it takes value one when the interviewee's father has secondary studies,

FTERTIARY: Dummy variable; it takes value one when the interviewee's father has tertiary studies, and zero otherwise.

MPRIMARY: Dummy variable; it takes value one when the interviewee's mother has primary studies, and zero otherwise.

MSECOND: Dummy variable; it takes value one when the interviewee's mother has secondary studies,

MTERTIARY: Dummy variable; it takes value one when the interviewee's mother has tertiary studies, and zero otherwise.

FWORK: Dummy variable; it takes value one when the interviewee's father works, and zero otherwise.

MWORK: Dummy variable; it takes value one when the interviewee's mother works, and zero otherwise.

ROOM: Dummy variable; it takes value one when the interviewee has not his own room, and zero otherwise.

BATHROOM1: Dummy variable; it takes value one when the interviewee has one bathroom at home, and zero otherwise.

BATHROOM2: Dummy variable; it takes value one when the interviewee has two bathrooms at home, and zero otherwise.

BATHROOM3: Dummy variable; it takes value one when the interviewee has three or more bathrooms at home, and zero otherwise.

COMPUTER: Dummy variable; it takes value one when the interviewee has one or more computers at home, and zero otherwise.

INTERNET: Dummy variable; it takes value one when the interviewee is not connected to the Internet at home, and zero otherwise.

CULTPOSS: This variable is PISA index related to “classical culture” in the family home. It measures the availability at home of classical literature, books of poetry and works of art .

PRIVSCHOOL: Dummy variable; it takes value one when the interviewee goes to a private school, and zero otherwise.

HABITAT1: Dummy variable; it takes value one when the interviewee lives in a small town (3,000 to about 15,000 people), and zero otherwise.

HABITAT2: Dummy variable; it takes value one when the interviewee lives in a town (15,000 to about 100,000 people), and zero otherwise.

HABITAT3: Dummy variable; it takes value one when the interviewee lives in a city (100,000 to about 1,000,000 people), and zero otherwise.

HABITAT4: Dummy variable; it takes value one when the interviewee lives close to the centre of a city with over 1,000,000 people, and zero otherwise.

HABITAT5: Dummy variable; it takes value one when the interviewee lives elsewhere in a city with over 1,000,000 people, and zero otherwise.

OTHLANG: Dummy variable; it takes value one when the family speaks at home other language most of the time, and zero otherwise.

TALKFAM1: Dummy variable; it takes value one when the interviewee discuss books, films or TV programmes with her (his) parents a few times a year. **TALKFAM2:** Dummy variable; it takes value one when the interviewee discuss books, films or TV programmes with her (his) parents about once a month.

TALKFAM3: Dummy variable; it takes value one when the interviewee discuss books, films or TV programmes with her (his) parents several times a month.

TALKFAM4: Dummy variable; it takes value one when the interviewee discuss books, films or TV programmes with her (his) parents several times a week.

READSCORE: Student performance in reading literacy. It has three dimensions: the type of reading task, the form and structure of the reading material and the use for which the text was constructed.

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TABLE II. ATTENDANCE TO CINEMA

	SPAIN		FRANCE		GERMANY		MEXICO		POLAND		USA		KOREA	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t
MALE	-0,106	-3,29	0,089	2,35	-0,079	-2,13	0,090	2,40	0,091	2,19	-0,068	-1,36	-0,011	-0,29
FPRIMARY	0,054	0,91	-0,042	-0,41	0,375	2,47	0,043	0,72	-0,039	-0,13	0,052	0,31	-0,083	-0,63
FSECOND	0,131	2,09	-0,057	-0,82	0,178	2,52	0,234	3,61	-0,134	-1,94	0,080	0,98	-0,079	-0,67
FTERTIARY	0,154	2,17	0,020	0,25	0,154	2,02	0,333	4,24	0,022	0,23	0,203	2,15	0,127	1,08
MPRIMARY	-0,111	-1,73	-0,205	-1,83	-0,194	-1,42	0,267	4,49	0,127	0,30	-0,159	-0,87	-0,064	-0,40
MSECOND	-0,042	-0,62	-0,010	-0,12	-0,119	-1,56	0,537	7,98	0,088	1,10	-0,139	-1,31	0,182	1,18
MTERTIARY	-0,075	-0,93	0,009	0,10	-0,015	-0,17	0,506	5,66	0,184	1,84	-0,221	-1,92	0,298	1,84
FWORK	0,009	0,17	0,064	1,18	0,058	1,01	0,043	0,83	0,031	0,71	0,011	0,17	0,058	1,10
MWORK	0,052	1,62	0,175	4,33	0,152	3,82	0,024	0,60	0,155	3,68	0,155	2,81	-0,035	-0,90
OTHELANG	0,042	0,28	0,196	1,95	-0,028	-0,32	0,660	1,47	1,660	3,73	-0,044	-0,51	*	*
ROOM	-0,086	-2,34	-0,231	-4,41	-0,179	-2,71	-0,196	-5,16	-0,221	-4,51	-0,167	-2,42	-0,188	-2,75
INTERNET	-0,188	-4,41	-0,162	-3,38	-0,153	-3,92	-0,353	-4,75	-0,265	-4,42	-0,210	-3,16	-0,136	-3,04
COMPUTER	0,153	4,18	0,066	1,53	0,199	3,49	0,301	5,24	0,241	5,21	-0,094	-1,22	0,092	1,45
BATHROOM1	0,202	2,13	-0,050	-0,60	-0,018	-0,10	0,111	0,88	0,098	1,17	0,125	0,40	0,072	0,61
BATHROOM2	0,214	2,24	0,004	0,05	0,100	0,55	0,247	1,92	0,210	2,28	0,177	0,57	0,116	0,96
BATHROOM3	0,259	2,43	0,181	1,33	0,131	0,71	0,472	3,21	0,530	3,96	0,295	0,94	-0,035	-0,17
HABITAT1	0,232	2,06	0,354	4,52	-0,033	-0,43	0,000	0,00	-0,219	-1,76	0,101	1,01	-0,531	-4,15
HABITAT2	0,454	4,08	0,377	5,16	0,047	0,64	0,157	2,30	-0,141	-1,18	0,176	1,78	-0,448	-3,71
HABITAT3	0,475	4,27	0,523	6,23	0,083	1,01	0,541	7,62	0,049	0,41	0,316	3,05	-0,414	-3,79
HABITAT4	0,266	1,91	0,617	2,29	0,218	1,48	0,690	6,96	0,418	2,98	0,618	3,92	-0,476	-4,11
HABITAT5	0,597	4,61	0,479	3,74	0,339	2,85	0,496	5,46	0,418	2,15	0,424	3,20	-0,422	-3,79
PRIVSCHOOL	0,079	2,23	-0,035	-0,77	0,142	1,62	0,247	3,71	-0,035	-0,26	0,089	0,78	0,032	0,81
CULTPOSS	0,094	5,26	0,064	3,09	0,037	1,85	0,124	5,88	0,128	5,32	0,089	3,41	0,185	7,71
TALKFAM1	0,155	2,20	0,121	1,52	0,165	2,88	0,199	2,99	0,169	2,39	0,149	1,74	0,554	10,14
TALKFAM2	0,329	4,57	0,305	4,06	0,246	4,09	0,313	4,25	0,192	2,60	0,328	3,42	0,534	8,16
TALKFAM3	0,380	5,81	0,365	5,36	0,338	5,86	0,481	6,83	0,318	4,51	0,427	4,88	0,561	9,73
TALKFAM4	0,570	8,83	0,462	6,77	0,478	7,35	0,491	7,10	0,436	6,31	0,417	5,26	0,618	10,83
READSCORE	0,003	11,15	0,001	5,41	0,001	4,60	0,002	6,43	0,001	6,05	0,001	2,24	-0,001	-1,59
cut_1	0,645		-0,321		-0,769		0,952		-0,42		-1,279		0,572	
cut_2	1,466		0,687		0,292		1,921		1		-0,272		1,549	
cut_3	2,047		1,351		1,075		2,437		1,668		0,331		1,893	
N	5836		3955		4233		4068		3200		2814		4813	
LRchi2	929,88		425,26		371,2		2086,86		698,23		234,74		549,03	

TABLE III. ATTENDANCE TO THEATRE

	SPAIN		FRANCE		GERMANY		MEXICO		POLAND		USA		KOREA	
	Coef.	z												
MALE	-0,218	-6,820	-0,138	-3,330	-0,168	-4,320	-0,077	-1,960	-0,093	-2,190	-0,236	-5,250	-0,134	-2,640
FPRIMARY	0,070	1,120	0,164	1,360	0,090	0,540	0,081	1,170	-0,182	-0,520	0,075	0,440	-0,196	-1,060
FSECOND	0,067	1,030	0,160	1,940	0,073	0,940	0,214	2,920	-0,017	-0,230	-0,033	-0,410	-0,050	-0,320
FTERTIARY	0,085	1,200	0,313	3,510	0,211	2,590	0,243	2,880	0,125	1,320	0,132	1,470	0,220	1,410
MPRIMARY	-0,120	-1,770	-0,215	-1,640	0,173	1,150	0,121	1,760	-0,846	-1,420	-0,548	-2,740	0,304	1,050
MSECOND	-0,063	-0,890	-0,244	-2,570	-0,009	-0,110	0,146	1,910	0,050	0,600	-0,105	-1,040	0,495	1,750
MTERTIARY	0,026	0,330	-0,160	-1,560	0,165	1,810	0,091	0,970	0,181	1,800	0,050	0,460	0,701	2,430
FWORK	-0,028	-0,560	-0,005	-0,080	-0,095	-1,540	-0,075	-1,330	-0,009	-0,190	0,033	0,550	0,202	2,700
MWORK	0,053	1,670	-0,014	-0,310	0,038	0,900	0,093	2,270	0,103	2,360	-0,038	-0,750	-0,036	-0,700
OTHELANG	0,352	2,450	0,061	0,540	-0,006	-0,060	-0,237	-0,570	-0,075	-0,260	-0,028	-0,350	*	*
ROOM	-0,031	-0,820	-0,018	-0,300	0,077	1,070	-0,218	-5,400	-0,186	-3,590	-0,092	-1,370	-0,231	-2,320
INTERNET	-0,134	-3,390	-0,147	-2,970	0,006	0,140	-0,297	-4,420	0,014	0,230	-0,093	-1,470	-0,044	-0,740
COMPUTER	0,105	2,800	-0,034	-0,710	0,034	0,540	0,154	2,660	0,139	2,930	0,038	0,510	0,136	1,520
BATHROOM1	0,018	0,180	0,098	0,990	-0,001	0,000	0,210	1,380	-0,123	-1,410	-0,297	-0,920	0,321	1,760
BATHROOM2	0,014	0,140	0,130	1,250	0,016	0,080	0,287	1,850	-0,054	-0,560	-0,242	-0,750	0,413	2,240
BATHROOM3	-0,027	-0,250	0,256	1,830	-0,115	-0,550	0,123	0,740	0,070	0,530	-0,234	-0,720	0,436	1,660
HABITAT1	0,619	4,810	-0,088	-0,950	-0,159	-1,910	-0,122	-1,570	-0,374	-2,910	0,171	1,740	-0,371	-2,200
HABITAT2	0,564	4,430	-0,004	-0,050	-0,121	-1,490	-0,038	-0,500	-0,272	-2,230	0,136	1,410	-0,323	-2,040
HABITAT3	0,363	2,860	-0,067	-0,700	0,069	0,790	0,216	2,760	-0,017	-0,140	0,213	2,140	-0,293	-2,070
HABITAT4	0,322	2,160	0,641	2,850	0,295	2,070	0,100	1,000	0,311	2,220	0,226	1,640	-0,301	-2,020
HABITAT5	0,244	1,720	0,109	0,820	0,093	0,760	0,609	6,330	-0,110	-0,580	0,360	2,940	-0,246	-1,720
PRIVSCHOOL	0,128	3,760	0,041	0,820	0,232	2,810	0,022	0,350	0,400	3,130	-0,005	-0,050	0,036	0,690
CULTPOSS	0,137	7,450	0,229	9,900	0,244	11,240	0,215	9,700	0,159	6,320	0,286	11,830	0,278	8,200
TALKFAM1	0,029	0,380	-0,096	-0,980	0,138	2,110	0,172	2,230	0,149	1,940	0,389	4,260	0,510	6,860
TALKFAM2	0,039	0,490	0,067	0,750	0,118	1,750	0,276	3,310	0,359	4,560	0,530	5,500	0,512	5,880
TALKFAM3	0,073	1,030	0,145	1,790	0,238	3,720	0,349	4,410	0,336	4,470	0,484	5,450	0,575	7,490
TALKFAM4	0,153	2,190	0,133	1,650	0,294	4,230	0,336	4,290	0,517	7,070	0,545	6,580	0,542	7,090
READSCORE	0,002	6,710	0,002	5,770	0,001	6,400	0,000	0,380	0,001	3,100	0,000	0,830	-0,002	-4,160
cut_1	1,374		1,155		1,117		0,626		0,355		0,183		1,537	
cut_2	2,572		2,366		2,440		1,803		1,625		1,481		2,594	
cut_3	3,247		2,921		3,087		2,455		2,214		2,036		3,125	
n	5836		3955		4233		4068		3200		2814		4813	
LRchi2	481,780		460,070		560,130		773,110		512,140		489,160		430,110	

TABLE IV. DESCRIPTIVE STATISTICS

Variable	SPAIN		FRANCE		GERMANY		MEXICO		POLAND		EEU		KOREA	
	Mean	Std. Dev.												
MALE	0,489	0,500	0,491	0,500	0,485	0,500	0,500	0,500	0,512	0,500	0,471	0,499	0,554	0,497
FPRIMARY	0,333	0,471	0,051	0,220	0,018	0,133	0,316	0,465	0,004	0,064	0,025	0,157	0,113	0,317
FSECOND	0,345	0,475	0,507	0,500	0,530	0,499	0,334	0,472	0,731	0,443	0,527	0,499	0,620	0,485
FTERTIARY	0,223	0,416	0,326	0,469	0,327	0,469	0,196	0,397	0,133	0,339	0,311	0,463	0,237	0,425
MPRIMARY	0,395	0,489	0,047	0,211	0,023	0,151	0,381	0,486	0,002	0,047	0,024	0,152	0,152	0,359
MSECOND	0,364	0,481	0,571	0,495	0,674	0,469	0,339	0,474	0,754	0,431	0,601	0,490	0,705	0,456
MTERTIARY	0,163	0,369	0,304	0,460	0,201	0,401	0,127	0,333	0,151	0,358	0,307	0,461	0,120	0,325
FWORK	0,885	0,319	0,854	0,353	0,886	0,318	0,843	0,363	0,667	0,472	0,782	0,413	0,808	0,394
MWORK	0,541	0,498	0,665	0,472	0,716	0,451	0,388	0,487	0,595	0,491	0,727	0,445	0,375	0,484
OTHELANG	0,011	0,105	0,039	0,193	0,050	0,219	0,002	0,047	0,005	0,071	0,104	0,305	*	*
ROOM	0,235	0,424	0,153	0,360	0,079	0,270	0,526	0,499	0,218	0,413	0,146	0,354	0,110	0,313
INTERNET	0,761	0,426	0,736	0,441	0,587	0,492	0,873	0,333	0,823	0,382	0,327	0,469	0,396	0,489
COMPUTER	0,672	0,469	0,653	0,476	0,883	0,322	0,245	0,430	0,419	0,494	0,810	0,393	0,847	0,360
BATHROOM1	0,413	0,492	0,651	0,477	0,431	0,495	0,587	0,492	0,688	0,464	0,256	0,436	0,668	0,471
BATHROOM2	0,449	0,497	0,261	0,439	0,398	0,490	0,299	0,458	0,210	0,407	0,455	0,498	0,289	0,453
BATHROOM3	0,111	0,315	0,036	0,185	0,162	0,369	0,092	0,289	0,040	0,196	0,284	0,451	0,014	0,118
HABITAT1	0,211	0,408	0,215	0,411	0,274	0,446	0,210	0,407	0,150	0,357	0,267	0,443	0,074	0,262
HABITAT2	0,321	0,467	0,529	0,499	0,433	0,496	0,244	0,430	0,397	0,489	0,327	0,469	0,099	0,298
HABITAT3	0,358	0,479	0,147	0,354	0,171	0,377	0,286	0,452	0,339	0,473	0,226	0,419	0,349	0,477
HABITAT4	0,036	0,185	0,007	0,084	0,021	0,143	0,071	0,257	0,068	0,251	0,044	0,205	0,150	0,357
HABITAT5	0,055	0,228	0,034	0,180	0,036	0,185	0,068	0,252	0,018	0,131	0,066	0,248	0,297	0,457
PRIVSCHOOL	0,401	0,490	0,217	0,412	0,050	0,217	0,155	0,362	0,026	0,160	0,058	0,233	0,507	0,500
CULTPOSS	0,182	0,955	-0,304	0,996	0,034	0,984	-0,550	1,003	0,149	0,899	-0,165	1,040	0,208	0,904
TALKFAM1	0,121	0,326	0,106	0,308	0,220	0,415	0,255	0,436	0,195	0,396	0,163	0,369	0,193	0,395
TALKFAM2	0,120	0,325	0,149	0,356	0,194	0,396	0,151	0,358	0,166	0,372	0,122	0,327	0,107	0,309
TALKFAM3	0,290	0,454	0,312	0,463	0,266	0,442	0,220	0,414	0,233	0,423	0,207	0,405	0,164	0,370
TALKFAM4	0,403	0,490	0,341	0,474	0,165	0,371	0,258	0,438	0,281	0,449	0,387	0,487	0,170	0,375
READSCORE	496,306	80,233	505,232	87,114	506,796	95,182	432,945	81,488	476,425	91,430	501,885	98,301	522,454	65,739