

The effects of critics reviews on movie demand

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Abstract

Most research on the impact of critics on movie attendance behavior has examined aggregated data but the effect on the behavior has not been observed. Our aim is to fill this gap by analyzing if movie reviews increase movie attendance at the individual level. In order to achieve this goal, the cultural demand model of learning-by-consuming-process was extended to incorporate the effects of the movie reviews. Using the information contained in the Survey of Cultural Practice and Habits in Spain, we estimated an ordered probit model. Our empirical results show that reading reviews strongly increases movie attendance frequency. Moreover, it can be seen that no matter whether the review is positive or negative, the frequency of movie attendance always increases. Accordingly with our results, the worst review it is the one that is never made, so we conclude as the popular saying “very bad reviews are the next best thing to good reviews”.

Keywords: critics, film reviews, consumer behavior, taste formation, movie demand.

Impacto de la crítica cinematográfica sobre la demanda de cine

Resumen

La mayoría de las investigaciones que analizan los efectos de la información sobre la demanda de cine se han realizado a través de datos agregados; esto es, analizan una serie de películas y su recaudación en taquilla. Sin embargo, desde este análisis, no se observa el comportamiento individual frente a la información especializada. El objetivo de este trabajo consiste precisamente en cubrir este hueco metodológico mediante el análisis de los efectos de las fuentes de información, concretamente de la crítica cinematográfica sobre la asistencia al cine. Para lograrlo, el modelo de la demanda del aprendizaje a través del consumo fue extendido, incorporando los efectos de las críticas cinematográficas. Usando la información contenida en la encuesta de hábitos y prácticas culturales en España, hemos estimado un modelo probit ordenado. Los resultados muestran que la lectura de críticas incrementa la frecuencia de asistencia al cine, no importa si la crítica es positiva o negativa. Según nuestros resultados, concluimos que la peor crítica es la que no se hace y que una mala crítica es lo mejor después de una buena crítica.

Palabras clave: demanda cultural, formación del gusto, demanda de cine, crítica de cine, consumidor cultural.

Introduction

The study of film critique has been very productive, providing alternative interpretation for the determinants of movie success. In this field, research has provided controverted opinions. On the one hand, those who say that reviews have a positive relationship with box office performance (Litman & Kohl, 1989; Wyatt, 1991; Wallace *et al.* 1993; Sochay, 1994); on the other hand, some authors find no relationship between film reviews and box office performance (Ravid, 1999; Zufryden, 2000). Finally, and following Eliashberg & Shugan's (1997) proposal, reviewers have been observed sometimes as influencers (Basuroy *et al.* 2003) and other times as predictors of movie success (Eliashberg & Shugan, 1997; Basuroy, Chatterjee & Ravid, 2003; Reinstein & Snyder, 2005). In any case, critics' impact is an interesting research field but always focused on an aggregate level because the empirical analysis has been oriented to the effects on box office movie performance. Under these circumstances, analysing how reviews influence the moviegoer's decision process is a key point, and this is just the objective of our paper.

We establish this reviews influence on movie attendance in two ways: by reducing the risk associated with watching the movie and by increasing the ability to enjoy the movie consumption. To achieve our aims, we have enlarged the Lévy-Garboua & Montmarquette's (1996) theoretical demand model based on a learning-by-consuming-approach. In concrete, we have added the effect of an external source of information, film reviews in our case, and we test their influence empirically using Spanish data on individual.

The paper has the following structure: first includes a review of the existing literature about the role of film critique and our main hypothesis is formulated. Immediately presents our theoretical model of demand for cultural goods and their econometric specification. After a brief description of our database. Subsequently, discusses the main results of our empirical analyses. Finally, offers some concluding remarks and managerial implications.

Literature Review

The ability of critics to influence the decision process of individuals through their opinions or critical reviews has been analysed in many different cultural markets, from the gastronomic market (Chossat & Gergaud, 2003), the wine market (Ashenfelter & Jones, 2000) to the performing arts and cultural industries (Verdaasdonk, 1987). **But undoubtedly, it has been in the movie market where the effect of critics has been more deeply studied and it is precisely here where our research is focused.**

Probably, the first interest of the studies on film critique was trying to determine their impact on the box office revenues. The results of these studies are not conclusive. On the one hand, Litman & Kohl (1989); Wyatt (1991), Wallace *et al.* (1993) and Sochay (1994) found a significant relationship between positive reviews and box-office revenues. On the other hand, Ravid (1999) and King (2007) showed that no correlation exists between the critical ratings of films and gross box office earnings. King (2007) attributes this lack of correlation to a difference in taste between critic and consumers. Finally, Hirschman & Pieros (1985) found evidence of positive reviews having a negative influence on box office performance.

Some papers have compared critics and moviegoers preferences. Holbrook (1999) confirms that both have different ways of valuating movies although also share some preferences; he also establishes that not all the movies positively valuated

by the consumers lack artistic value and vice versa. Ginsburgh y Weyers (1999) point out that critics' opinion is not time consistent. Finally, Ravid *et al.* (2006) say that some critics, especially the most famous and reputed, show a statistical bias towards movies from some specific studios.

Former studies have raised some questions: ¿do critics and consumers have different judgment and values? This question, in turn, raises another new question: do critics and consumers share the same tastes? The author concludes that these differences and similarities can not be affirmed definitively, not all movies that have been positively valued by the consumers lack artistic value and vice versa.

When studying the critics influence on consumer's behaviour, Eliashberg & Shugan (1997) can be considered a starting point. They define critics as influencers or predictors. The influencer perspective implies that film reviews directly affect the consumer's decision making process. The predictor perspective suggests that reviews only predict consumer's decisions. To determine which one is the most likely perspective, the authors examine whether the impact of a review is reflected in early box office revenue or total revenue. Their results show that reviews correlate positively with the total box office revenue and, therefore, the authors say that critics act as predictors.

After this work, many authors have applied Eliashberg and Shugan's classification for different goals. Basuroy *et al.* (2003) find that positive and negative reviews affect the weekly box office incomes through an eight week period, therefore, critics can be both influencers and predictors. Measuring the impact of positive and negative reviews, they confirm their hypothesis: there is not a symmetrical effect. Negative reviews hurt deeper the box office than the positives can benefit them. Finally, they prove that superstars and big budgets partially compensate the effect of negatives reviews, "big budgets and stars can moderate the blow and perhaps save the executive's job" (p. 116).

Reinstein and Snyder (2005) suggest that the critic effect can be different whether the the movie has got a wide or narrow releasing strategy. They focus on the opinion of two specific critics to deal with the endogeneity between reviews and the intrinsic quality of the movie to conclude that the reviewers play the role of predictors.

Gemser *et al.* (2007) find a different effect of the reviews on art house movies and mainstream movies. In the latter, the review act as predictor, while in former as influencer. Perhaps this happens because these are low budget films and therefore offer less qualitative information to the consumers. In the case of art house movies, they also found that the positive or negative nature of the review is not important, as Shrum (1991) has pointed out "...even mediocre or negative review are better than no review at all" (p.368).

Finally, Boatwright *et al.* (2007) analyze the relationship between reviews and the intrinsic quality of movies. They discuss if movie success (in terms of large audiences) is due to its quality or to reviewers' opinions. They point out that reviewers, as opinions leaders, can affect the diffusion movie process, that is, how fast a movie is received and seen.

Nevertheless, all these researches has concentrated in the aggregate analysis of film critique, in others words, how reviews impact on box office revenues. This approach deals with the presence of endogeneity problem with the intrinsic quality of movies, as it was already pointed out. In this paper we develop a different approach focused on individual consumer's preferences and choices. We consider film reviews as a relevant source of information and analyse their impact on the individual frequency of movie attendance, together with the study of the individual socioeconomic characteristics and his/her cultural capital.

Our hypothesis is that reading film reviews increases the frequency of movie attendance, because they give us information and reduce the movie associated risk (Shrum, 1991).

Film reviews and movie attendance: Theoretical Approach and Empirical Specification

To describe moviegoers behaviour and find out if critics have a real influence on movie attendance, our paper extends the Lévy-Garboua & Montmarquette (1996) demand to incorporate the effect of exogenous sources of information, in particular movie reviews. Lévy-Garboua & Montmarquette (1996) describe demand for cultural goods in a learning-by-consuming process, based on previous consumption experiences, including pleasant and unpleasant surprises. We suggest that this learning-by-consuming process depends as well on the information the consumer collects beforehand.

Gathering information and discovering how to use it accurately and profitably along the consumer's decision process, is a slow process that requires a lot of time and money (it involves formal education and cultural background including previous cultural experiences) and obtains its benefits in the long run. Since cultural commodities (including movies) are experience goods, the consumer's choice is always a risky decision. From our point of view, film critique offers new and low cost information that, in the short run, will reduce risk, and in the long run will increase individual's cultural capital and influence his/her taste formation process.

Following the Lévy-Garboua and Montmarquette (1996) discrete choice model, in a context of utility maximization, the first-order condition of consuming i for individual k is

$$\frac{UM_{ik}}{\lambda_k} > \frac{\Pi_i}{s_{ik}}$$

Hence, the consumption of a given cultural good i depends positively on his/her marginal utility for zero consumption (UM_{ik}) and his/her subjective valuation of this good (s_{ik}). It also depends negatively on its price (Π_i) and his/her marginal utility of income (λ_k). This marginal utility can be linked to some socioeconomic variables (gender, age, etc.) but also to risk. From our point of view, film critique reduces risk and therefore reduces this marginal utility, so they stimulate cultural (movie) consumption.

In this context, where the individual chooses between consuming ($T=1$) or not consuming ($T=0$), the probability of consuming the good T (movies) will be expressed by the next equation:

$$\text{Prob}(T = 1) = \text{Prob}(u_k > -\beta X_k)$$

where β is the vector of parameters to be estimated, X_k is the vector of explanatory variables that include the attention that consumers pay to the critics, and u_k is a random disturbance that follows a normal distribution.

Our interest is to analyze the effect of film critique on the frequency of movie attendance, that is, whether or not film reviews increase the movie attendance. Since our survey measures movie attendance by a hierarchical and discrete variable, the

empirical model to be estimated is an ordered probabilistic¹ one whose general specification is:

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

where y^* represent the individual's attendance according to their preferences, X is a vector of explanatory variables and ε is a random disturbance that follows a normal distribution with zero means, variance equals one.

For movie attendance, the structure of the answers that we can observe in the Survey (our dependent variable) and their relationship with the unobserved preferences are:

$y = \text{never} = 1$	$si\ y^* \leq 0$
$y = \text{once per year} = 2$	$si\ 0 < y^* \leq \mu_1$
$y = \text{two or three times per year} = 3$	$si\ \mu_1 < y^* \leq \mu_2$
$y = \text{four to eleven times per year} = 4$	$si\ \mu_2 < y^* \leq \mu_3$
$y = \text{once per month at least} = 5$	$si\ \mu_3 < y^* \leq \mu_4$
$y = \text{two or three times per month} = 6$	$si\ \mu_4 < y^* \leq \mu_5$
$y = \text{once per week at least} = 7$	$si\ \mu_5 < y^*$

The μ parameters are unknown and must be estimated joint a vector of ² parameters. If μ parameters are statistical significant, the groups that define differ to each other.

¹To carry out the econometric specification, the 10th version of the statistical package STATA was used.

²Table 1 presents three estimates. In the first one (estimate 1) it is compared the theoretical proposal presented in this work, which means that the movie demand is explained by the sociodemographic characteristics of individuals, the supply of films measured by the size of locality, cultural consumption, audiovisual consumption, cultural capital, the use of new technologies and the consumption of information (specifically for film reviews). In the following model (estimate 2), it is assumed that new technologies do not change the movie demand, excluding the variables related to the use of new technologies. Finally, the third model (estimate 3) includes only the significant variables in the estimate 1. This paper uses the results provided by the estimate 1. Alternative models (estimate 2 and 3) do not provide significant changes while maintaining the same levels of significance and slight changes in coefficients. On the contrary, estimates 2 and 3 sacrifice a lot of information that estimate 1 provides.

The vector of explanatory variables X is composed by the information provided by the critics, the socioeconomic characteristics, the cultural capital of the individuals, the consume of the audiovisual goods (like DVDs and TV), and finally by the consumption of cultural goods.

We propose that the socioeconomic characteristics could explain, on the one hand, the formation of cultural tastes and, on the other hand, show the free time availability. About the consumer's cultural capital and background we consider it contributes to extend available information and then reduce risks, increasing the probability of movie attendance.

At the same time, we consider that both the consumption of audiovisual goods and the cultural consumption in general (attendance to popular music and events such as theatre plays, ballet, opera, zarzuela and classical music concerts) act as additives to the cultural capital and, therefore, we consider that they increase movie attendance.

Data. Survey of Cultural Practice and Habits in Spain

Data were obtained from the 2002-2003. The survey sampled 12,180 individuals older than 15. Information was collected about leisure habits and cultural consumption involving films, performing arts, recorded or live music, lectures and museums, among others things. The survey also provided information about socioeconomic characteristics of the interviewee, such as gender and age.

Empirical Results

In this section, we explain the profile of movie consumers in Spain and how it is affected by information sources, especially by the movie critics. The results of the ordered probabilistic model are shown in Table 1².

Table 1
Movie attendance

Category	Variable	1 Coefficient	2 Coefficient	3 Coefficient
Dependent variable MOVIEFREQ				
Information	cultumedia	.0604513**	.0528105	.0638215**
	moviebook	-.0301004	-.0443087	
	criticread	.2745955***	.2739234***	.2734445***
	magzineread	.0620554*	.0630809**	.0635039*
Gender	gender	-.002411		
Age	age	-.010732*	-.010859*	-.0122615*
	age2	-.0001956*	-.000195*	-.0001834*
Studies	primary	.1270462***	.1281639***	.127116***
	highschool	.2599723***	.2622481***	.2644454***
	profes	.2908914***	.2914861***	.2914121***
	university	.2713057***	.2743758***	.2787533***
Marital status	single	.3704575***	.3644754***	.3689634***
	singleon	.099076	.1029837	
	marriedoff	.150372*	.1473188*	.1585347***
	married18	-.0516911	-.0474534	
	marriedon	-.1604789***	-.1567038***	-.1556957***
	divorced	.2701256***	.2689102***	.2832358***
City Size	citysize2	.0342304	.0358482	
	citysize3	.1899569***	.1937512***	.1657374***
	citysize4	.0952537*	.0938566*	.0839334*
	citysize5	.2567623***	.2550343***	.236101***
Economic activity	retired	-.1673027*	.1691932***	-.1631015*
	unemployed	-.0843715*	-.0783356**	-.0894478*
	student	-.1322441*	-.1334548*	-.1329279*
	otros	.0890354	.090793	
	housewife	-.1561117***	-.1569284***	-.1610887***
Audiovisuals Eq.	numtv	.0232071**	.0248262**	.0194743
	numpc	.0347972	.0671693*	
	internethome	.1520263***	.1204028***	.1582425***
	vcr	-.0342073	-.0301472	
	tvpay	.0953961***	.0926425**	.0974308***
	tvfree	-.0022099	-.0042214	
	numbook	.0000153	.0000196	
Cultural capital	artformation	-.1411261**	-.146350**	-.1326173
	artpractice	.0769175*	.0766298*	.0857005*
Audiovisuals consump	tvhours	-.0280344***	-.0276628***	-.028354***
	filmtv	.0543217*	.0551592*	.0556612*
	theatretv	.0775179	.0750588	
	usedvd	.2001859***	.1989163***	.1903312***
	rentdvd	.1575077***	.1566423***	.147547***
	buydvd	.113203***	.1121821***	.1174489***

Table 1
(continued)

Category	Variable	1 Coefficient	1 Coefficient	1 Coefficient
New technologies	pchours	.000115**		.0001209**
	web	-.0420418		
	chats	.0330986		
	downmusic	-.1444703*		-.1405858*
	buy-e-music	.0776822		
	downgames	.0881486		
	emusint	-.2378*		-.2291027*
	softwaregames	.0690002*		.0838158*
Cultural consumption	popmusic	.2985034***	.2979524***	.3072676***
	theatre	.4961696***	.4939651***	.5019415***
	ballet	.0504887	.0549993	
	zarzuela	.2109817*	.2122614**	.2408538***
	opera	.0967651	.0941129	
	clasicmusic	.1617842***	.1591331***	.1885505***
LR chi2	=	7506.13	7476.11	7586.01
Prob > chi2	=	0.0000	0.0000	0.0000
Pseudo R2	=	0.1881	0.1874	0.1877
Ln likelihood	=	-16197.913	-16212.923	-16410.70

*Statistically significant at 95%

**Statistically significant at 90%

***Statistically significant at 100%

Socioeconomic

We now discuss the effect of socioeconomic variables (such as gender, age, marital status, city size or relationship with the economic activity) on the frequency of movie consumption.

The first impression is that the socioeconomic profile of the Spanish movie consumer resembles that in an earlier study (Fernández-Blanco *et al.*, 2002). Most Spanish moviegoers are young people, with no family dependants and with higher education.

Our model also includes some variables whose aim is capturing the effect of the occupational level. These variables can reflect various effects. First, they can be useful as a proxy for income (Towse, 1994). Second, they can be useful to indicate

the taste formation process (Prieto-Rodríguez & Fernández-Blanco, 2000). Finally, these variables can also indicate the individual's time availability. Our results show that employees are more probable to go to the movies than any other of the alternatives (retired, unemployed, students and housewife/househusband).

Cultural Capital

In this paper we include variables related to the individual's specific cultural capital. This kind of capital was measured by the practice (*ARTPRACTICE*) and/or study (*ARTFORMATION*) of artistic activities. We observe a positive and significant relationship between practicing those artistic activities (i.e. music, photography, drama, performing arts) and movie attendance.

Audiovisuals

We introduce the consumption of other audiovisual products such as DVDs and television in order to test complementary or substitutability relationships. The effects of television were measured in two ways: how many hours the interviewee watches TV, and the consumption of movies on television. We observe that the consumption of television in general acts as a substitutive for movie attendance; this result has been observed in previous research (Fernández Blanco, 1996; 1998; Fernández Blanco & Baños Pino, 1997; Fernández Blanco *et al.*, 2002). However, when we examine the effect of movie consumption on television, the effects are inverse so this kind of consumption appears as a complementary good to movie attendance.

The relationship between movie attendance and videos is a priori ambiguous because they are considered a substitute by some opinions and a complementary by others (Fernández Blanco & Baños Pino, 1997; Fernández Blanco *et al.*, 2002). The effects of videos were introduced under three variables: the use of VCR or DVD players, the renting and the bought of videos. All of them are significant and positively related to movie attendance. People who watch, rent and buy videos are the ones who go to movie theatres. To summarize, moviegoers transcends the consumption channel.

Finally, new technologies have opened the window of opportunity for entertainment and they may change people's leisure practices, especially among those who

are the most frequent movie consumers: young people. For this reason, we introduced some variables measuring new technologies and their role as substitute or complementary of movies. The results were diverse: downloading and listening music on the Web (*DOWNMUSIC* and *LISTEN-E-MUSIC*) act as leisure alternatives that compete directly with movie attendance; however, software on videogames (*SOFTWAREGAME*), a proxy variable for other visual options, has a positive correlation with movie attendance. From these results it is difficult to get a definite conclusion about the substitutive or complementary effect of new technologies.

Cultural Goods

We also wanted to know if the cultural consumption, in general, increases the probability of going to the cinema. The results show a positive and significant relationship between movie attendance and the consumption of performing arts such as theatre (*THEATRE*) and popular and classical music (*CLASICMUSIC* and *POPMUSIC*). Analysis of marginal effects suggests that cultural consumption, in general, increases the probability of going to the cinema more often. Theatre attendance (*THEATRE*) reduces the probability of not going to the cinema up to 18.2%, while it increases 6.5% the probability of going two or three times per month. In summary, the great movie consumers are omnivorous, they consume not only movies, but also art and culture in general.

Critics and Other Sources Information

The effects of movie critics confirm our assumption: the critic has a great influence on movie attendance, and this is also suggested by the coefficient about reading movies critique (*CRITICREAD*) which outstands among the highest of the model. In terms of marginal effects we can see that reading film critique in the newspapers affect notably reducing by 10% the probability of not going to the cinemas and increases 3% the probability of monthly attendance. Then critics encourage movie consumption not only increasing its frequency but also reducing the possibility of deserting the cinemas.

It is important to highlight that we could not identify the kind of review, and if it was positive or negative. Anyway, the consumers responses in relation to the reviews were always positive. These results suggest that regardless of the kind of review, positive or negative, the more the spectator reads critique, the more they go

to the cinema. This indicates that in some or other way, spectators have the critics into account.

Our results report that film reviews are an important consume engine for the Spanish people, not only promoting the increase of frequency consumption, but reducing the possibility of deserting the cinemas.

Summarizing, the movie-goers are good readers of film critics, which confirms our hypothesis that the critic increase the probability of movie consumption, because helps to reduce the risk, and facilitate the search cost, providing detail and relevant information about the non available characteristics of the movies before their consumption.

Conclusions

Our empirical approach is the first approach which tries to explain the effect of critics on movie attendance. In addition to this, in this work we have added the effects of the cultural capital over the movie attendance.

Related to these mentioned contributions and from this work results some conclusions which can be considered a contribution to the empirical study of the critic.

Regarding other additional sources of cultural information, we have observed that, generally speaking, they keep a positive effect on movie attendance. These sources of cultural information, in general, reduce the probability of absence to the cinemas. In conclusion, the consumption of culture in general helps to reduce the risk associated to movie attendance and, at the same time, and due to the same principle as education, the consumption of cultural information reduces the risk associated to the consumption of culture and art in general.

One of the main resources to encourage the consumption of experience goods is to increase information and reduce risk. Education, both generic and specific, and past experiences are commonly considered the main instruments to achieve these goals, but our paper states that access to cultural information in general also plays the same role. In this sense, we have paid attention to movie reviews under the hypothesis that they can help to reduce the associate risk because they show characteristics of the experience before its consumption. We have confirmed the expected positive and significant relation with the attendance: movie reviews not

only reduce 10.5% the probability of deserting the movie theatres, but also increase 1.4% the probability of attendance at least once in a week.

Taking into account the size of the corresponding coefficients, it can be seen that only education and cultural consumption have stronger impact than reviews. These results were as expected because cultural interest and the taste of arts come mainly from education, the instrument in cultural capital by excellence. Likewise the consumption of another cultural products (theatre plays, “zarzuela”, classical and popular music concerts) increases the individual’s cultural capital and his/her capacity to appreciate and enjoy any cultural product.

Finally, considering simultaneously the effects of reviews, education and other cultural commodities, we conclude that cultural capital is the key point to understand cultural consumption in general and movie attendance in particular. From this point of view, it can be said that the same movie is different for each consumer as they have different cultural background. Cultural capital allows the consumers to have different opinions of the same movie. In this context, any addition to the cultural capital through the reviews not only reduce the risk, but will also increase the capacity to enjoy the movie experience.

Every research is likely to be improved. This feature generates limitations of its findings and this work is not an exception. Perhaps, from our point of view, the greatest limitation of our work is the way we approached the cultural capital. In this article cultural capital has been measured through education in arts and arts practice (this abstract measure of cultural capital is not only due to lack of data, but also the result of a fairly generic definition of this concept, which makes it difficult to treat empirically). In future research, cultural capital could be approximated in different ways and observe their effects on film demand and if it moderates the effects of criticism. Similarly, this work could be improved if it included information that distinguished the effects of positive reviews compared to the negative reviews.

Managerial implication

The former conclusions allows us to make some suggestions to the different movie industry participants, especially regarding policy and commercial strategies.

First of all, our research provides a extensive profile of Spanish moviegoers that can be useful to the industry in order to focus on the preferences and necessities of the consumers.

On the other hand, it has been proved that the critics' opinions, no matter if positive or negative, interest the audience. The movie industry must take this into account in their promotional and communication campaigns. Nevertheless, some movie studies penalize those critics with negative reviews of their movies, however, this is a bad strategy from our point of view. According to our results, the worst review is that which is never made: indifference towards the movie is worse than a negative review. We do not recommend to penalize critics for their reviews, quite opposite our recommendation is fomenting the flow of information, talking about a movie. Maybe in the short term it can be bad for a movie but, negative review can better than no one. So we conclude like the popular saying "very bad reviews are the next best thing to good reviews".

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Appendix

In this Appendix we define the variables used in this paper.

A. Dependent Variables

MOVIEFREQ: Hierarchical and discrete variable, it takes the following values:

1. Never
2. Once per year
3. Two or three times per year
4. Four to eleven times per year
5. Once per month at least
6. Two or three times per month
7. Once per week at least

B. Independent Variables

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

AGE: Continuous variable; designate the interviewee's age.

AGE2: Continuous variable; designate the square of the interviewee's age.

B.1. MARITAL STATUS

SINGLE: Dummy variable; it takes value one when the interviewee is single and zero otherwise.

SINGLEON: Dummy variable; it takes value one when the interviewee is single with children and zero otherwise.

MARRIEDOFF: Dummy variable; it takes value one when the interviewee is married without children and zero otherwise.

MARRIED18: Dummy variable; it takes value one when the interviewee is married with children older than eighteen and zero otherwise.

MARRIEDON: Dummy variable; it takes value one when the interviewee is married with children younger than eighteen and zero otherwise.

DIVORCED: Dummy variable; it takes value one when the interviewee is separated, divorced or widower without children and zero otherwise.

MARRIEDALONE: Dummy variable; it takes value one when the interviewee is married living alone because his/her children are old and zero otherwise.

B.2. CITY SIZE

CITY SIZE1: Dummy variable; it takes value one when the number of inhabitants of the city of residence is smaller than five thousands and zero otherwise.

CITY SIZE2: Dummy variable; it takes value one when the number of inhabitants of the city of residence is between five and ten thousands and zero otherwise.

CITY SIZE3: Dummy variable; it takes value one when the number of inhabitants of the city of residence is between 30 and 200 thousands and zero otherwise.

CITY SIZE4: Dummy variable; it takes value one when the number of inhabitants of the city of residence is between 200 and 500 thousands and zero otherwise.

CITY SIZE5: Dummy variable; it takes value one when the number of inhabitants of the city of residence is bigger than 500 thousands and zero otherwise.

B.3. STUDIES

PRIMARY: Dummy variable; it takes value one when the interviewee has elementary studies and zero otherwise.

HIGH SCHOOL: Dummy variable; it takes value one when the interviewee has intermediate studies and zero otherwise.

PROFES: Dummy variable; it takes value one when the interviewee has occupational training (FP1 and FP2) and zero otherwise.

UNIVERSITY: Dummy variable; it takes value one when the interviewee has university studies (graduate and undergraduate) and zero otherwise.

ILLITERATE: Dummy variable; it takes value one when the interviewee is illiterate and zero otherwise.

B.4. RELATIONSHIP WITH THE ECONOMIC ACTIVITY

EMPLOYEE: Dummy variable; it takes value one when the interviewee is employed and zero otherwise.

RETIRED: Dummy variable; it takes value one when the interviewee is retired and zero otherwise.

UNEMPLOYED: Dummy variable; it takes value one when the interviewee is unemployed and zero otherwise.

STUDENT: Dummy variable; it takes value one when the interviewee is a student and zero otherwise.

HOUSEWIFE: Dummy variable; it takes value one when the interviewee is a housewife/househusband and zero otherwise.

OTHERS: Dummy variable; it takes value one when the interviewee belongs to other categories and zero otherwise.

B.5. AUDIOVISUALS EQUIPMENT

NUMTV: Continuous variable; indicate the interviewee's number of televisions.

NUMPC: Continuous variable; indicate the interviewee's number of computers.

INTERNETHOME: Dummy variable; it takes value one when the interviewee has Internet access at home and zero otherwise.

VCR: Dummy variable; it takes value one when the interviewee has VCR or DVD player at home and zero otherwise.

TVPAY: Dummy variable; it takes value one when the interviewee has paytelevision at home and zero otherwise.

TVFREE: Dummy variable; it takes value one when the interviewee has free television at home and zero otherwise.

NUMBOOK: Continuous variable; indicate the interviewee's number of books.

B.6. INFORMATION

CULTUMEDIA: Dummy variable; it takes value one when the interviewee visits Web sites or listens and watches cultural programs on television or radio and zero otherwise.

MOVIEBOOK: Dummy variable; it takes value one when the interviewee has movie books and zero otherwise.

CRITICREAD: Dummy variable; it takes value one when the interviewee reads movie critic at least once a week and zero otherwise.

MAGZINEREAD: Dummy variable; it takes value one when the interviewee reads cultural magazines and zero otherwise.

NEWSREAD: Dummy variable; it takes value one when the interviewee reads general newspapers (mainstream press and free newspapers) at least once per week and zero otherwise.

B.7. CULTURAL CONSUMPTION

POPMUSIC: Dummy variable; it takes value one when the interviewee attends to pop music concerts and zero otherwise.

TEATHRE: Dummy variable; it takes value one when the interviewee attends to theatre plays and zero otherwise.

BALLET: Dummy variable; it takes value one when the interviewee attends to ballet and zero otherwise.

ZARZUELA: Dummy variable; it takes value one when the interviewee attends to zarzuela and zero otherwise.

OPERA: Dummy variable; it takes value one when the interviewee attends to the opera and zero otherwise.

CLASICMUSIC: Dummy variable; it takes value one when the interviewee attends to classical music concerts and zero otherwise.

B.8. CULTURAL CAPITAL

ARTFORMATION: Dummy variable; it takes value one when the interviewee follows an artistic course.

ARTPRACTICE: Dummy variable; it takes value one when the interviewee has practiced some cultural activities (photography, video, music, etc.) and zero otherwise.

B.9. AUDIOVISUAL CONSUMPTION

TVHOURS: Continuous variable; indicate the daily hours that the interviewee watches television.

FILMTV: Dummy variable; it takes value one when the interviewee watches movies on television and zero otherwise.

THEATRETV: Dummy variable; it takes value one when the interviewee watches theatre plays on television and zero otherwise.

USEVIDEO: Dummy variable; it takes value one when the interviewee uses VCR or DVD to watch movies and zero otherwise.

RENTVIDEO: Dummy variable; it takes value one when the interviewee rents movie videos and zero otherwise.

BUYVIDEO: Dummy variable; it takes value one when the interviewee buys movie videos and zero otherwise.

B.10. NEW TECNOLOGIES

PCHOURS: Continuous variable; indicate how many hours per week the interviewee uses the computer for pleasure.

WEB: Dummy variable; it takes value one when the interviewee uses the Internet for pleasure and zero otherwise.

CHATS: Dummy variable; it takes value one when the interviewee uses the chat and zero otherwise.

DOWNMUSIC: Dummy variable; it takes value one when the interviewee downloads music and zero otherwise.

BUY-E-MUSIC: Dummy variable; it takes value one when the interviewee buys music through the Internet and zero otherwise.

DOWNGAMES: Dummy variable; it takes value one when the interviewee downloads video games and zero otherwise.

SOFWAREGAME: Dummy variable; it takes value one when the interviewee has video games software and zero otherwise.

