Italian Theatre Participation through Attendance: a Microeconometric Investigation

Concetta Castiglione

Department of Economics, Trinity College Dublin - Ireland
Department of Economics, Statistics and Finance, University of Calabria - Italy
e-mail: castiglc@tcd.ie

Abstract. This paper examines theatre participation in Italy over the period 1995–2006. Explanatory variables are determined by identifying their contributions to both the individual's decision to attend, and the frequency of attendance. Socio-demographic and socio-economic characteristics, cultural capital, participation in other cultural activities, ticket price and theatre supply are taken into account. Three different models are used: the logistic regression model, the ordered logistic regression model and the finite mixture model. In the first two cases the contribution of each variable is not so different, in the case of finite mixture model the significance of the variables is not the same in the two components. For instance, the variable education, a proxy for cultural capital, is always significant in determining participation, but not in frequency of participation. In general, our results show that participation is not specific to a particular theatrical event since people who attend one arts activity are more likely to attend others. Finally, our results show that traditional socio-economic variables such as income and education are highly correlated with participation in the arts.

Keywords: Demand, Arts participation, Theatre, Italy.

Jel: Z11, L82, D12

1. Introduction

One of the most consistent findings in the literature on arts participation has been that traditional socio-economic variables, such as income, education and employment are highly correlated with participation in the arts. This means that those in higher socio-economic groups are more likely to be exposed to the arts in their schools or social networks. Cultural and arts classes in-school increase later cultural participation persistently (Kraaykamp, 2003; Kracman, 1996). Nagel et al. (2010) assert that such courses have a minor, albeit significant effect compared with the influence of family and educational level. Income is another important factor, yet the empirical literature indicates that education plays a far greater determining role (Borgonovi, 2004; O'Hagan, 1996; Seaman, 2006). In fact, socio-economic status may have a positive initial impact on consumption of the arts. Moreover, preferences for the arts are reinforced by ongoing consumption experiences (Lunn and Kelly, 2008).

In this study, participation through attendance in the performing arts is analyzed both in terms of simple participation and in terms of frequency of participation. The objective is to understand the contribution of each variable on whether or not an individual attends and the number of visits made.

The first step of the analysis is to study arts participation rates in Italy over the period 1995–2006 for each kind of cultural event. The second step is to examine which variables make a population more likely to participate in arts events. In this case, three models are used: logistic regression model, ordered logistic regression model and finite mixture model. The logistic regression model is used to understand the variables that can influence theatre attendance. In this case, the dependent variable takes value 0 or 1, taking into account the simple participation model. The ordered logistic regression model, which used to understand the variables that can make a population more likely to attend the theatre more often, consists of ordered variables. The finite mixture model takes into account heterogeneity in our population. In fact, although we cannot distinguish between those who never go to the theatre because they do not like it and those who never go but would like to, we can distinguish between groups with high average participation and low average participation, hence this kind of model provides a sound approach.

Our results show that arts participation is not specific to one art form, because people who participate in one arts activity are more likely to attend others, and because traditional socio-economic variables, such as income, education and occupation status are directly related to arts participation. Furthermore, education is a much greater determining factor in terms of attendance than any other personal characteristics. The most noteworthy results show that people participating in the arts are more likely to participate in all manner of performances;

indeed, our results show that individuals who go to the cinema and museums are more likely to attend theatre events.

The second and third sections of this paper focus on the process of the formation of preferences in the case of cultural goods, and the results obtained by previous studies. The fourth section explains our hypotheses. The fifth considers demand functions for cultural goods and explains our empirical approach. The sixth section includes a description of the data used. To conclude, results and comments are presented.

2. The economic process of the formation of preferences

In the economics literature, participation in cultural events is a function of preferences, education, income and price, and it is assumed that consumers maximize their utility function (Kraaykamp, 2003; Kracman, 1996). Almost all theories assert that current demand for the arts is influenced by previous experience. In fact, according to Lévy-Garboua and Montmarquette (1996), as the theatre-going experience is not a simple measurement of innate taste and other demand factors, the static consumer model does not apply. Past consumption is a strong determinant of current consumption, which supports the theory that cultural goods are experience goods. 'Any new experience of a good reveals to the consumer a positive or negative increment in his taste for it' (Seaman, 1996: 444). In this way, a taste for the arts is acquired or discovered, and the rate of art consumption increases over time with exposure. Thus the effect of past consumption on present appreciation will be positive through the consumption of cultural capital that has been accumulated up to that point (Ateca-Amestoy, 2005).

Lévy-Garboua and Montmarquette (2002) show the average variation of taste over time. The taste for experienced goods increases and eventually levels off because additional tastes have been acquired through repeated exposure and experience. By contrast, the taste for non-experienced goods remains stable. Even though the average individual might initially prefer non-experienced goods, ultimately, he/she will enjoy the experienced good more later.

There are two important models of preference formation for the arts. The first is based on the rational addiction approach (Becker and Murphy, 1988; Stigler and Becker, 1977) and the second on the learning-by-consumption approach (Lévy-Garboua and Montmarquette, 1996, 2002). Seaman (1996) indicates a third process of preference formation called 'habit formation'. In his opinion, habit formation is the most passive explanation for past consumption affecting current and future consumption. His theory derives from a study by Houthakker and Taylor (1970), which estimated an OLS consumer demand in the United States including a lagged dependent variable in the arts demand equation. Their equation covered 1929–1964 using the

Survey of Current Business data. According to the rational addition approach, consumers maximise an intertemporal utility function such that they may sacrifice current utility to get the benefits of life-long consumption. Moreover, past consumption has a positive effect on present consumption, as the accumulation of past experiences increases cultural capital. Becker (1996) asserts that the taste for the arts requires an investment, so 'the ability to enjoy the consumption of art appears to be a return on an investment' (Klamer, 2002: 454). In the learning-by-consumption model, consumers are uncertain of the quality of performances, and so update their preferences in response to their experiences of particular arts events. In other words, Lévy-Garboua and Montmarquette (1996) assume that each time a consumer participates in an arts event, he will experience a degree of enjoyment, on the basis of which he will revise his future expectation of his own taste; 'tastes are given but unknown' (Lévy-Garboua and Montmarquette, 2002: 9).

In both the rational addition and learning-by-consumption models, early experience increases the utility of future consumption. In this way, the satisfaction that visitors get appears to depend on what they bring with them in terms of knowledge and capability to experience the art form in question (Klamer, 2002) when they consume the cultural goods. However, according to Seaman (2006), unlike to the learning-by-consumption approach, the rational addition model, when combined with specific consumption capital in the household production framework, has a different modelling setup and can generate different implications.

3. Participation in the Arts: Review of the literature

The National Endowment for the Arts in the US has adopted a tripartite definition of participation: (i) through attendance at live arts events; (ii) through the media by watching or listening to arts programs and (iii) personal involvement, be it by creating or displaying art or by performing either as an amateur or as a professional. Cherbo and Peters (1995) add a fourth definition: studying the arts.

In this study we focus on the first definition of participation. According to Ateca-Amestoy (2005), the empirical literature on participation in the arts describes consumption patterns in terms of three different dimensions: participation level, the characteristics of participants and the determinant of participation.

In particular, the empirical literature on which factors lead individuals to participate in the arts has demonstrated that adult attendance at arts events is influenced by several variables: adolescent exposure to the arts, educational achievement, gender, age, race, partner's

background, current income, early childhood and social relations (Ateca-Amestoy, 2008; Seaman 2006; Upright 2004).

According to Seaman (2006), basic linear ordinary least square (OLS) especially the double-log form, has been the most common primary estimation technique. Other techniques have been studied: step-wise OLS, two stage least square (TSLS), conditional maximum likelihood estimation, the almost quasi ideal demand system, logit, tobit, probit and zero inflated negative binomial model (ZINB).

In particular, the empirical studies on theatre attendance could be divided into two strands: aggregate demand (i.e. Bonato et al., 1990; DiMaggio and Mukhtar, 2004; Zieba, 2009) and individual demand (i.e. Ateca-Amestoy, 2008; Borgonovi, 2004; Frateschi and Lazzaro, 2008; Lunn and Kelly, 2008). In the first case, researchers show the relationship of price elasticity and income elasticity of the demand with other cultural economic goods. In the second case, cultural goods are considered to be experienced goods, and past consumption is an important determinant of current consumption.

DiMaggio and Mukhtar (2004) show that the role of the arts as cultural capital is in decline in the US, and the extent of the decline differs depending on the event in question. Specifically, attendance rates at galleries and jazz concerts have increased, and in other cultural events, attendance has dropped more slowly for women and college graduates than for others. Regarding individual demand, Borgonovi (2004) shows that arts education is closely correlated with participation, though there is less correlation with frequency of attendance. Moreover, arts education is not equally distributed in the population, as socio-economically disadvantaged groups have less arts education both in terms of quality and quantity. Given that many studies on arts participation use SPPA surveys, they fail to take into account the price of participation. Determining factors in price could include the cost of admission, the geographic density of an adequate supply in the area, the opportunity cost of time and the shadow price determined by human capital and learning-by-consumption. Ateca-Amestoy (2008) estimates a theatre participation model using the 2002 SPPA from the United States. Her model relies on the use of a ZINB model, which provides for monitoring two distinct behaviours in the observable attendees: one group of those who never attend and a sub-population that may attend. For a more detailed survey on theatre participation see Seaman (2006).

One of the few attempts to study the demand for performing arts in Italy was compiled by Bonato et al. (1990). The authors estimate a demand function from 1964–1985 by OLS estimation, using annual data provided by SIAE (Società Italiana degli Autori ed Editori – the Italian Authors and Publishers Association) and ISTAT (Istituto Nazionale di Statistica – the National Institute of Statistics). Their results show that increases in both real income and

performances offered produce a significant increase in attendance. Zanardi (1998) studies two different models: a participation model (using probit regression) and a frequency model (using the Poisson model). Zanardi shows that the decision to attend a cultural event is influenced by education and cultural capital. Frequency of cultural attendance is influenced by several variables, such as socio-demographic characteristics, income and price. Frateschi and Lazzaro (2008) focus on the reciprocal influence that married people's preferences and characteristics can have on the cultural background of their partner. Frateschi and Lazzaro use the first two Multi-purpose Surveys of Italian Households carried out by ISTAT to estimate the mutual influence of a partner's educational and cultural background on consumption at three kinds of cultural venues: museums, theatres and opera houses/concert halls. They found different patterns depending on the type of artistic activity. The performing arts seemed to be more social, with partner's educational achievement having a stronger effect on joint attendance, whereas visiting a museum was more particular to the individual, as the level of education of each individual played a greater role in the decision to attend than that of their partner.

4. Factors Influencing Theatre Participation: Hypotheses

Participation in arts events is generally accepted to be an important kind of cultural capital, and the empirical literature that finds a positive relationship between high culture, higher educational achievement and higher income supports this view (Upright, 2004). 'Cultural capital could be defined as the acquired taste that enables the possessor to appreciate the art. We visit museums because we feel richer knowing how to appreciate art' (Klamer, 2002: 462). In fact, in the case of cultural goods, the material and physical aspects of consumption appear to lose out to the cultural, symbolic and other non-material aspects (Ateca-Amestoy, 2008).

Moreover, the utility of such goods depends on the consumption of other people. People are able to enjoy theatre performances mainly because they are widely enjoyed, and attendees can share their enjoyment with others (Klamer, 2002). In this sense, cultural goods are also social goods (Hirsch, 1978), meaning that arts participation is a social activity, i.e. only a product of personal experiences and attributes, but also of on going social relationships (Upright, 2004).

In the analysis, we divided the factors influencing theatre participation into four different categories: socio-demographic characteristics, socio-economic characteristics, time constraints and participation in other cultural activities. Henceforth, the empirical analysis is focused on the following hypotheses:

Hypothesis 1: Cultural capital endowment is an important factor in arts participation.

Hypothesis 2: Cultural goods are normal goods.

Hypothesis 3: Time availability is an important factor in determining preferences as regards arts participation.

Hypothesis 4: People interested in the arts are more likely to consume several kinds of cultural goods.

In order to test the first hypothesis, education, family education, age, gender and number of theatre performances are included in our model. Education is expected to have a positive linear relationship with attendance: the higher the level of educational achievement, the higher the likelihood of a person attending performing arts activities. The assumption behind this is that better-educated individuals have a greater capacity to appreciate and understand the qualities of artistic performances. A positive relationship between participation and an individual's parents' or partner's level of education is also expected; this could be seen as an initial cultural capital endowment. Culture is an acquired taste; people need time to appreciate the arts. If cultural tastes develop over a long period, there should be a positive linear effect on theatre participation with age, which also explains the importance of arts classes in childhood and education level to attendance (Katsuura, 2008). Moreover, life effects can influence participation rates through the learning-by-consumption processes, which emphasizes the fact that the more performances one attends, the more enjoyable they become. However, the life-cycle effect suggests a non-linear relationship between arts participation and age. This is the reason for assigning dichotomous variables for each age class. There is no intrinsic reason to expect different participation rates between men and women. Although different experiences during childhood may play a role, e.g. boys tend to participate more in sports and less in arts and music than girls (Katsuura, 2008). Finally, following Bonato et al. (1990), the number of performances is included to allow for the effect of the short-run quantitative and/or qualitative supply constraints on demand[1]. This is because 'performing arts is anything but a homogeneous good. Quality aspects matter' (Bonato et al. 1990: 41).

In order to test the second hypothesis the variables of income, occupation and ticket price are taken into account. According to the demand theory, the positive relationship between income and participation implies that arts participation is not an inferior good, and cultural

[1] A brief demonstration can be found in Bonato et al. (1990).

capital increases demand. In our database, as there is no information on income we will use homeownership as a proxy of income, based on information on whether the individual is an owner occupier or a tenant, this is common in empirical estimations using the same survey. As for occupation, employed people have a higher probability of attending; in this paper we take into account employed, those seeking employment and 'others'. However, as Borgonovi (2004) pointed out, the opportunity cost of participating in the performing arts rather than working increases with income level. Ticket price is one of the variables that has usually been omitted from the literature to date. Some studies (Lévy-Garboua and Montmarquette, 2002) have found that the demand for the arts is price-elastic, and that the arts are luxury goods. However, according to Seaman (1996), the econometric investigation does not agree on price elasticity, as it is not clear that arts are luxury goods with their own-price elastic demands.

In order to test the third hypothesis regarding marital status, children under the age of six, children between the ages of six and thirteen, and geographic area are taken into account. This because people with young children to care for are likely to have less leisure time. Another problem is whether the individual has reached a constrained or an unconstrained maximum. Time constraints determine substitution effects between leisure activities. According to McCarthy et al. (2001), the nature of the performing arts make them particularly susceptible to time constraints, as they require extensive planning and dedication to be enjoyed.

Possible substitute or complementary goods for theatre are taken into account when we study the fourth hypothesis. We consider participation in another three different cultural goods: museums, cinemas and television. According to Borgonovi (2004), substitution effects will prevail in the case of television, while museum visits and attendance at other performing arts events will produce a complementary effect, which supports the omnivore theory on arts attendance (Chan and Goldthorpe, 2007; National Endowment for the Arts, 1993).

5. Demand Function for Cultural Goods

Demand for cultural goods can be divided into two parts. The first is the dichotomous choice of whether or not to attend arts performances; the second, once one has chosen to attend, is to determine the optimum level of consumption: the number of performances that an individual would attend.

In the first instance, the decision to attend an arts event is influenced by the process of formation of consumer preferences for cultural goods. In this case, the learning-by-consumption phenomenon is crucial, as is past consumption of those goods. The second decision (frequency) depends essentially on income and price, which enter the standard formulation of a demand

function. Frequency may be considered to be time-consuming private goods. Consequently, leisure time and entrance price have a positive influence on arts participation.

However, as Ateca-Amestoy has pointed out, people who do not attend cultural events can be divided into two distinct sub-populations. The first is comprised of those individuals who never go to the theatre and would never consider doing so whereas the second group would consider going. In order to study the demand function for theatre we have to take into account that we cannot distinguish if a non-attendee falls into one or the other of these sub-categories.

The demand of any given individual can be ascertained from a maximization problem of a quasi-concave utility function subject to both budget and time constraint.

The maximization problem can be written in the following way:

$$\max_{x_a, x_s, x_o} u(x_a, x_s, x_o)$$

$$\text{s.t. } \mu + wl = p_{x_a} x_a + p_{x_s} x_s + p_{x_o} x_o \qquad \text{with } x_i \geq 0 \text{ and } \nabla \quad i \quad and \quad T \geq l \geq 0$$

where x_a is the theatre attendance, x_s are substitutes for theatre, x_o are other goods and p_{x_a}, p_{x_s}, p_{x_o} are the respective prices; μ is the non-labour income and *wl* is the labour income, and T is total time (24 hours minus the time to sleep and so on).

The leisure-consumption choice is represented in Figure 1. The horizontal axis depicts time and the vertical axis depicts quantity of consumption goods. The attainable combinations of consumption and leisure are given by the quadrilateral OCAD, where OC is the maximum consumption level and is attainable with zero leisure and consumption is equal to $\mu + wl / \sum p$. The budget line will go from the consumption intercept to the leisure intercept. In fact, OD is the maximum leisure attainable with zero consumption.

The solution to this maximization problem could be written thus in the reduced form:

$$y_i = f(x_i) = f(X_1, X_2, X_3, X_4)$$

where X_1 represents socio-demographic characteristics (first hypothesis), X_2 represents the socio-economic characteristics (second hypothesis), X_3 time constraint variables (third hypothesis) and X_4 indicates participation in other cultural activities both substitutive and complementary (fourth hypothesis).

5.1 Empirical approach

The categorical form of the dependent variables, in our analysis, is not suitable for ordinary regression, and in such a case logistic regression and ordered logistic regression are used often in the literature. In this paper, we use the standard logistic and order logistic regression models and a latent class model (finite mixture model) in order to take into account the information contained in the data more efficiently.

In order to choose the variables for the participation model, we must first consider that the decision to attend is influenced by the process of formation of the consumer's cultural preferences. The logistic regression model takes the following form:

$$\log it(p_i) = \ln\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_1 x_1 + \ldots + \beta_n x_n + \varepsilon$$

The interpretation of the estimated β parameters is as the additive effect on the log odds ratio for a unit change in the jth explanatory variable. The model has an equivalent formulation:

$$p_i = \frac{1}{1+e^{-(\beta_0+\beta_1 x_1+\ldots.+\beta_n x_n)}}$$

If the dependent variable is in the form of ordered categories, ordered logistic regression is used. Examples of ordinal outcomes include the attitudes of respondents to a certain issue (strongly disagree, disagree, agree, strongly agree) or performance indicators (excellent, satisfactory, insufficient). However, for estimation purposes, the actual values taken by the dependent variables are irrelevant, though higher values are assumed to correspond to higher outcomes (Borgonovi, 2004).

In order to choose the variables for the frequency model, we must remember that frequency depends on the availability of resources, namely, money and time. The ordered logistic regression model takes the following form:

$$\ln\left(\frac{p(Y=j)}{p(Y=(j-1))}\right) = \beta_0 + \beta_1 x_1 + \ldots + \beta_n x_n + \varepsilon$$

Finite mixture model (FMM) provides a natural way of modelling continuous or discrete outcomes that are observed from populations consisting of a finite number of

homogeneous sub-populations. Such models have a naturally represented heterogeneity in a finite, and usually small, number of latent classes, each of which may be regarded as a type. According to Ateca-Amestoy (2008), if we believe that we cannot distinguish between those who never go to the theatre and those with a positive probability of attending, but can distinguish between groups with high average participation and low average participation, then this kind of estimation provides a good approach. The same methodology was used by Fernández-Blanco et al. (2004) to estimate cinema demand in Spain.

In the FMM we do not have to know which group produced an observation since both individual preferences and the probability of membership of a particular group are estimated simultaneously. Individuals are probabilistically separated into several classes and a behaviour function is estimated for each class. Since each observation might have a non-zero probability of belonging to any class, all the observations in the sample are used to estimate the behaviour function for each (Fernández-Blanco et al., 2004).

6. Variables and Descriptive Statistics

The data used in this analysis comes from two different sources: ISTAT and SIAE. The survey data carried out by ISTAT we use is the Multi-purpose Survey of Italian Households (Indagine Multiscopo sulle famiglie Italiane). The survey is conducted with a two-stage stratified sampling scheme carried out every five years since 1995. Currently, there are three surveys available: 1995, 2000 and 2006.

The surveys were conducted via direct interviews for most questions, and if for some reason, anyone was unable to attend the interview, the information was provided by another member of the family. Otherwise, the questions were answered directly by the interviewee. The main information is the real family together with the anagraphic family surveyed. A member of the real family is defined as a person who: 1) is normally resident in the same house as the head of the family; 2) has a relationship or friendship with the head of the household, or works in a service capacity for the family. In defining the 'real family', the most important concepts are 'residence' and 'normal residence' as compared to the registration for those who are living together. Within each real family can be found: no core family members or one or more core family members. The definition of core family is more restrictive than that of family and can be defined as: a) a couple, whether married or cohabiting, with or without children, or a couple who are never been married or cohabited, with no children; 2) with one parent with one or more children, never married, never married cohabited, with no children of their own. The real family

members who do not satisfy anyone of these requirements are considered to be ‘isolated members’.

All three surveys are divided into five different categories: citizen and communication technologies; leisure time activities; books and language; music and performances; sport and physical activities. The most recent survey polled 19 921 households, 14 630 core families and was distributed to 50 569 people in 850 municipalities of different sizes.

The first part of the information on each record concerns the individual, the second part is about the family and the third part concerns calculated information (not directly polled). With the information contained in the survey it is possible to perform three different kinds of analyses:

a) Individual analysis: each individual has a sequential number indicating their family and another number indicating his/her sequential number in the family.

b) Family analysis; in order to perform a family analysis, it is necessary to select the sequential number of the family.

c) Core family analysis: in order to perform an analysis of the core family, one must choose the first person in each core family.

The dataset contains personal and family information and information on whether a person participated in a number of performing arts events as well as the frequency of such participation. There are two questions referring specifically to the theatre. The first asks, ‘How many times did you go to the theatre (including circus) in the last 12 months?’, to which there were four possible answers: a) never; b) 1 to 3 times; c) 4 to 6 times; d) 7 to 12 times; e) more than 12 times. The second asks, ‘Which kind of theatre performances did you see?’ Theatre; opera; classical music performance; ballet; musical and operetta; dialect theatre; theatre for children; circus; other.

Regarding museum and cinema visits, the first question on the frequency of attendance remains the same. Further questions on the cinema included ‘What kind of movies have you seen in the last 12 months?’ Comedy; drama; action/adventure; murder mystery/thriller; humour; cartoons; fantasy; horror; documentary; short film; musical; historical; biographical; other. ‘Generally, when do you go to the cinema?’ On weekdays, whenever there is a discount; during the weekend; during the holidays; whenever; when possible. ‘Why did you never go to the cinema this year?’ There is no cinema in my village or town; I prefer to watch films on television; I prefer to watch films on VHS or DVD; It is too expensive; I do not have enough time; I have problems relating to my health/age/family that prevent me from going; The selection of films is not interesting; I don’t like the cinema; I have no one to go with; Other.

The only difference between the 2006 and the 2000 surveys is the size of the sample group polled. As above mentioned the 2006 survey polled a total of 50,569 individuals, 19,921 families and 14,630 core families. The 2000 survey polled a total of 54,239 individuals, 19,996 families and 21,108 core families. The 1995 survey is a slighlty different. Specifically, the first question about attendance at various events was the same. The second question was: 'Who did you usually go with:' spouse/boyfriend/girlfriend; children; parents; grandparents; grandchildren; friends; other. There were two questions about cinema and theatre: 'What was your main reason for going to the cinema/theatre?' I like it; It is a way to spend my leisure time; It is relaxing/enjoyable; It is a way to spend time together; It is a way to grow and develop an appreciation for culture.

The data source for ticket prices and number of performances was the SIAE annual report. Since 1936, the SIAE's annual report has included this information; the qualitative and quantitative data available from the SIAE's library is a direct result of collecting taxes on performances, a task delegated to the SIAE by the Ministry of Finance. 'Because of the nature of this task and the strict control over live performances this implies, the SIAE data set must be considered very reliable' (Bonato et al., 1990: 51).

The SIAE data show the number of performances, number of tickets sold, box office expenditure, public expenditure and turnover per geographical area, region and kind of municipality. The number of performances represents the number of days worked for each kind of performance. The number of tickets sold represents the number of attendees at the performance where entry tickets (by ticket or subscription) are required. The box office expenditure is the amount spent on tickets and subscriptions. Public expenditure is the total amount spent by the audience, including the amount paid at the box office and all the other costs (cloakroom, compulsory and optional bar orders, etc) paid by the audience. Turnover includes all the receipts obtained by the organizer and includes the amount paid by the public, and all other earnings from sponsors, TV rights, advertising, private and public contributions, etc. Variables present in the SIAE datasets are displayed in table 1.

Table 2 presents brief definitions of the symbols of variables involved in the empirical estimation of the models and the parameters' expected sign in the estimation.

The descriptive analysis shows that those who attended the theatre over the last year saw an average of more than three performances (table 3). Across all surveys, there was an average attendance of 2.31, of 2.40 and 2.39 in 2006, 2000 and 1995, respectively.[2] According to Lévy-Garboua and Montmarquette (1996), these figures suggest that there is a significant positive effect of accumulated theatre-going experience on current theatre consumption. Nevertheless,

[2] Where 2 = 1–3 times; 3 = 4–6 times, 4 = 7–12 times; 5 = more than 12 times.

attendees do not choose to attend the theatre over other artistic performances, since on average theatre-goers also go to the cinema and museums more often than non-theatregoers (see table 3). This finding also supports our fourth hypothesis, given that we assume the omnivore theory.

7. Results and Discussion

7.1 Trends in arts participation in Italy

Until now, there have not been many studies that analyze trends in arts participation. This is because researchers have been 'frustrated by the absence of comparable data collected at different points' (DiMaggio and Mukhtar, 2004: 172). However, DiMaggio and Mukhtar (2004) did present a long-term analysis with data provided by Survey of Public Participation in the Arts from 1982 to 2002 in the USA.

Our strategy is to compare results from the 1995, 2000 and 2006 surveys, and to see if trends in arts participation are consistent with the view that there has been a decline in attendance at arts events.

Table 4 shows participation rates for the entire sample in each of the core activities for each survey year. The final column indicates the percentage change in the odd of attendance (the attendance rate divided by the rate of non-attendance) between 1995 and 2006. The odd ratio is calculated as follows:

$$r_{jk} = (p_j / 1 - p_j) / (p_k / 1 - p_k)$$

In some activities, attendance went up slightly, while in others it declined. The greatest decline was in classical music concert attendance, where the odd of attendance declined by 73 per cent. These results support those obtained by Ateca-Amestoy (2008) and DiMaggio and Mukhtar (2004), who assert that cultural attendance has decreased to some degree.

Figures 2–5 show the participation rate across our sample. Specifically, Figure 2 shows the participation rates for theatre, cinema and museums; we can see that attendance decreased from 1995 to 2000 for theatre and cinema, and increased from 2000 to 2006, while attendance decreased slightly for museums. Figure 3 shows theatre attendance across Italy. All areas show the same trend, with attendance decreasing between the first two surveys and increasing between the last two. The area with the highest participation rate is the northwest (Area 2), which is not surprising since Area 2 covers, to give but one example, the Teatro Regio in Turin. On the other hand, Area 4 has the smallest participation rate, which highlights the divide in participation between the north and the south of Italy.

Figure 4 shows the difference in participation rate by education. Education 1 represents primary school education; Education 2, secondary school education and Education 3, third-level studies. The results agree with the previous literature finding that education is an important factor in determining arts attendance, as participation rates increase with the level of education attained. Figure 5 shows the difference between the genders regarding theatre attendance. In our sample, women attend more. The only explanation for this provided by the literature to date is that female children are more exposed to the arts during childhood.

7.2 Participation and frequency models

Table 5 displays the odd ratio and marginal effects seen in the basic logistic regression model fitted using participation rates in theatre.[3] Marginal effects determining the change in a regression on the conditional probability that y=1. In general, the marginal effects computed are calculated as the marginal effects for an average individual. However, sometimes it is preferable to compute the average marginal effects – that is, the average for each individual's marginal effect. In fact, the marginal effect computed at the average x differs from the average of the marginal effect computed for the individual x_i. This is because marginal effects differ at the point of evaluation x_i.

Almost all variables are significant and of the expected sign. Only the occupation variable ('employed', 'seeking employment' and 'other') has no influence on theatre participation, which supports our four hypotheses.

We tested whether cultural capital endowments were an important factor in deciding theatre participation (Hypothesis 1). The results show that education, education of parents/partner, age, gender and number of performances are always significant and positively related to current attendance. Alternately, regarding theatre supply, if the numbers of theatre performances increase, the probability to attend a theatre performance increases too.

In the table, we can see the difference between the age categories, as people aged between 55 and 64 years are more likely to attend compared to the other categories. This agrees with the theory that theatre attendance could be seen as an experienced good. Moreover, a marginal change in education from the average of 1.56 (which indicates secondary school education) is associated with a 12 per cent increase in theatre participation. The biggest contribution comes

[3] The correlation matrix for all the coefficients in the models shows that coefficients are not affected by multicollinearity. However, there is a strong correlation between education and parents'/spouse's education. In order to check whether our results are affected by this problem we ran two different regressions one with both variables and one without the parents/spouse variable, and the results are not significantly different.

from the northwest (Area 2) compared to other territorial areas, as suggested by the descriptive analysis.

The results on the test of our second hypothesis (i.e. cultural goods are normal goods) are not as strong as those supporting the first. As it turned out, the variables concerning 'house' (rented, owner occupier/life tenant, other) and occupation are not always significant, while ticket price always has a significantly negative effect on participation, namely that if the price of tickets increase, attendance at arts events decreases.

Variables linked with time availability (third hypothesis) are not always significant (i.e. number of children in the household), which is not a surprise since, in this model, we test attendance and not frequency, thus making time constraints less important. Furthermore, regarding our third hypothesis (i.e. time availability being an important factor in determining arts participation preferences), cinema and museum attendees are more likely to attend more theatre performances, supporting the omnivore theory. The marginal effects imply that people who visit museums are more likely to attend the theatre than people who go to the cinema, whereas the more television people watches, the less likely they are to attend theatre performances, as those who watch a significant amount of television attend less (or no) theatre.

Table 6 shows the ordered variables that have been constructed to reflect differences in participating behaviour among non-attendees, occasional and frequent attendees. The econometric model used is ordered logistic regression. In this table we can see that price elasticity is equal to 0.513 in 2006. This finding is consistent with the previous literature, which supports our hypotheses. Moreover, those most likely to attend the theatre are between 55 and 64 years of age, and people who attend any arts activity have a higher theatre attendance than others.

Equally in this case, households with children (either under six years or between 6 and 13) are less likely to attend or to attend more than either people without children or those with children over 14 years. Education and cultural capital are important variables in determining attendance and frequency of attendance. Also, in this case, people who go to the cinema and museums are more likely to attend more theatre performances (fourth hypothesis).

7.3 Latent Model

Table 7 presents our results in the case of finite mixture model. The table displays two columns for each survey. The first column contains the results on component one in our sample (attendance) and the second column contains results on component two (frequency of attendance).

In this way, we can see that the sign and the significance of the variables are not the same in the two components. For example, the education variable, here a proxy for cultural capital, is always significant in the first component, but not in the second. This is because, according to our hypotheses, cultural capital is crucial to the process of the formation of preferences, and therefore plays an important role in the decision to attend a theatre performance, but it is not as important as regards the frequency of attendance. This is the same for other variables; men are less likely to attend than women, but gender bears no relation to the frequency of attendance.

All of this serves to confirm the hypothesis that, in our sample, there are two different populations (those who never go to the theatre and those with a positive probability of attending), and the behaviour of those populations is not the same.

8. Conclusions

In this study, participation through attendance at theatre events in Italy was analysed both in terms of simple participation and frequency of participation. To distinguish what determines whether a person attends or not from what determines the number of visits that person makes we used three different models: logistic regression, ordered logistic regression and finite mixture models. The first was used to examine the variables that influence attendance, the second to understand the variables that make a population more likely to attend arts events, and the third to take into account the two different sub-populations in the samples. The first population reached an unconstrained maximum to never attend theatre performances, and the latter only reaches a corner solution, as they would like to attend but are constrained from doing so.

One of the most consistent findings in the literature on arts participation has been that traditional socio-economic variables such as income, educational and occupational status were highly correlated to participation (O'Hagan 1996; Kracman 1996; Kraaykamp 2003; Borgonovi 2004; Seaman 2006; Nagel et al. 2010). Our results show that the determinant of theatre participation in Italy is not much different from that of other countries, in that the principal variables, such as price, education and income, have a significant impact on participation.

Descriptive analysis shows that over the period analysed attendance in some sectors went up slightly, while in others it declined. The greatest decline was in classic music concert attendance, where the odd of attendance declined by 73 per cent. These results support those obtained by Ateca-Amestoy (2008) and DiMaggio and Mukhtar (2004), who assert that attendance has decreased to some extent.

The logistic and order logistic results are not much different each other. Cultural capital together with time availability, ticket price, number of performances and participation in other cultural activities are the most important factor in determining theatre participation. Education is much more important in determining attendance and frequency than any other personal characteristic. However, the most important results say that people who attend arts events are more likely to attend all kind of performances, and among that group, individuals who attend arts events are most likely to attend the theatre. Price elasticity varies over the period analysed. In all estimation techniques it increases from 1995 to 2000 and decreases thereafter. In the order logistic regression model it was -0.03 in 1995, -0.971 in 2000 and -0.51 in 2006. These results are not unlike those summarised by Seaman (2006), in which he shows different studies with price elasticity that ranges from 0.3 to 1.65 confirming that the Italian consumers react to price changes like theatre consumers in other advanced countries. Other variables analysed also produce expected signs. For example, our proxy for income shows that a low income decreases the probability to attend to theatre performance. This is in line with the previous literature confirming the validity of our proxy for consumer's income.

Finally, latent model shows that the significance of the variables is not the same in the two components. For example, the variable education, a proxy for cultural capital, is always significant in the first component, but not in the second. This is because, according to our hypotheses, cultural capital is key to the process of the formation of preferences, and then plays an important rule in the decision to attend a theatre performance, but it is not as important in the decisions about the frequency of attendance.

It is important to stress that cultural participation is central to all advanced economies, to the extent that it is positively associated with an increase in the per capita income. In Italy, however, cultural participation assumes a special relevance for three main reasons. The first is due to the country's artistic and cultural heritage; according to UNESCO, Italy has the largest number of arts-related protected heritage sites; the second is due to the Italian debates on public funding of culture and the third because few studies have tried to examine theatre participation in Italy. For these reasons, our study is important for policy-makers, since it provides information that could be used when deciding how to promote culture in Italy.

References

Ateca-Amestoy, V., 2005. Determining Heterogeneous Behaviour for Theater Participation. IESA Working Papers Series 0502, Institute for Social Syudies of Andalusia - Higher Council for Scientific Research.

Ateca-Amestoy, V., 2008. Determining heterogeneous behavior for theatre attendance. Journal of Cultural Economics 32, 127–151.

Becker, G., 1996. Accounting for Tastes. Cambridge, Harvard University Press.

Becker, G.S., Murphy, K.M., 1988. A Theory of Rational Addiction. Journal of Political Economy 96, 675–670.

Bonato, L., Gagliardi, F., Gorelli, S., 1990. The demand for live performing arts in Italy. Journal of Cultural Economics, 14, 41–52.

Borgonovi, F., 2004. Performing arts: An economic approach. Applied Economics 36, 1871–1885.

Chan, T.W., Goldthorpe, J.H., 2007. Social stratification and cultural consumption: The visual arts in England. Poetics 35, 168–190.

Cherbo, J.M., Peters, M., 1995. American Participation in Opera and Musical Theatre 1992. Washington, DC: National Endowment for the Arts.

DiMaggio, P., Mukhtar, T., 2004. Arts participation as cultural capital in the United States, 1982-2002: Signs of decline? Poetics 32, 169–194.

Fernández-Blanco, V., Prieto-Rodríguez, J., Orea-Saánchez, L., 2004. Movie enthusiasts versus cinemagoers in Spain: A latent class model approach. paper presented at 13th ACEI Conference. University of Illinois at Chicago.

Frateschi, C., Lazzaro E., 2008. Attendance to cultural events and spousal influences: the Italian case. "Marco Fanno" Working Paper N.84.

Hirsch, F., 1978. Social Limits to Growth. Harvard University Press, Cambridge.

Houthakker, H.S., Taylor, L.D., 1970. Consumer Demand in the United States. Harvard University Press, Cambridge.

Katsuura, M., 2008. Examining Arts Participation in Japan Using the Survey on Time Use and Leisure Activities. Asia Pacific Journal of Arts and Cultural Management 5, 343–361.

Klamer, A., 2002. Accounting for Social and Cultural Values. De Economist 150, 453–473.

Kraaykamp, G. 2003. Literary socialization and reading preferences: effects of parents, the library, and the school. Poetics 31, 235–257.

Kracman, K., 1996. The effect of school-based arts instruction on attendance at museums and the performing arts. Poetics 24, 203–218.

Lévy-Garboua, L., Montmarquette, C., 1996. A microeconometric study of theatre demand. Journal of Cultural Economics 20, 25–50.

Lévy-Garboua L., Montmarquette, C., 2002. The Demand for the Arts. CIRANO Working Papers 2002s-10, CIRANO.

Lunn, P., Kelly E., 2008. In the Frame or Out of the Picture: A Statistical Analysis of Public Involvement in the Arts. Dublin, ESRI.

McCarthy, K., Ondaatje, E., Zakaras, L., 2001. Guide to the literature on participation in the arts. Santa Monica, California: RAND.

Nagel, I., Damen, ML., Haanstra, F., 2010. The arts course CKV1 and cultural participation in the Netherlands. Poetics 38, 365–385.

O'Hagan, J.W., 1996. Access to and participation in the arts: the case of those with low incomes/educational attainment. Journal of Cultural Economics 20, 260–282.

National Endowment for the Arts, 1993. Age and arts participation: With a focus on the baby boom cohort (Executive summary). Washington, DC: Author.

Seaman, B., 2006. Empirical studies of demand for the performing arts. In: Ginsburgh, V., Throsby, D., (Eds.), Handbook of the economics of art and culture. Vol. 1, Amsterdam: Elsevier, 416–472.

Stigler, G.J., Becker, G.S., 1977. De Gustibus Non Est Disputandum. American Economic Review 67, 76–90.

Upright, C.B., 2004. Social capital and cultural participation: spousal influences on attendance at arts events. Poetics 32, 129–143.

Zanardi, A., 1998. La domanda di intrattenimenti culturali: un'analisi microeconometrica per l'Italia. In: Santagada, W., (Eds), Economia dell'arte. Istituzioni e mercati dell'arte e della cultura, Utet, Torino, 123-144.

Zieba, M., 2009. Full-income and price elasticities of demand for German public theatre. Journal of Cultural Economics 33, 85-108.

Figure 1: The consumption/leisure choice

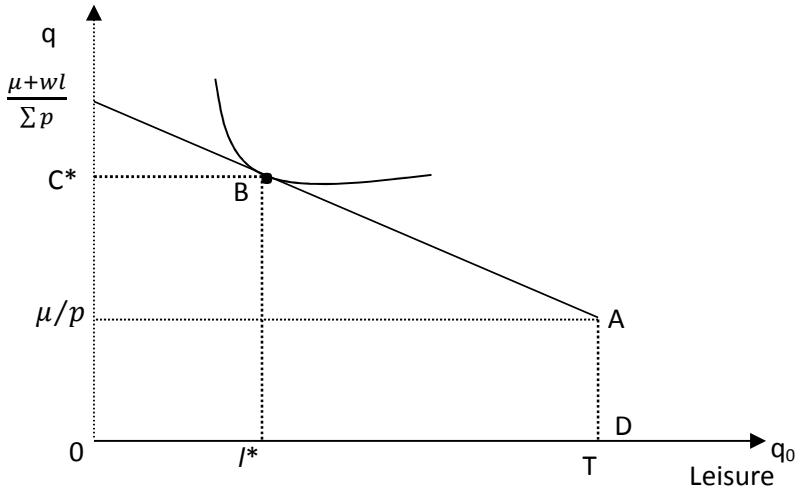

Figure 2: Participation rate by year (per cent)

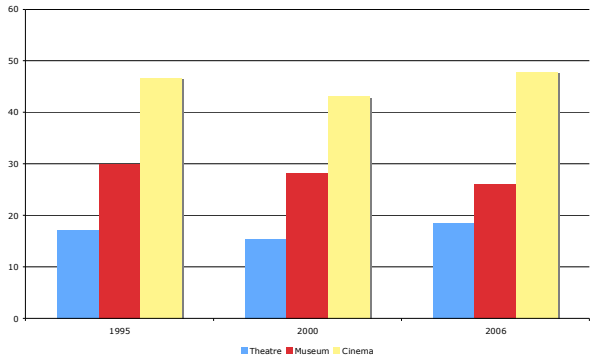

Figure 3: Theatre participation rate by education and year (per cent)

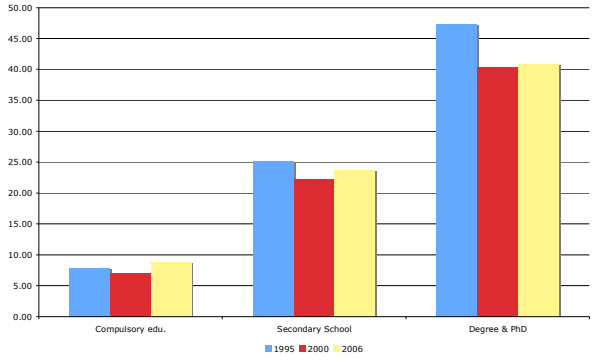

Figure 4: Theatre participation rate by area and year (per cent)

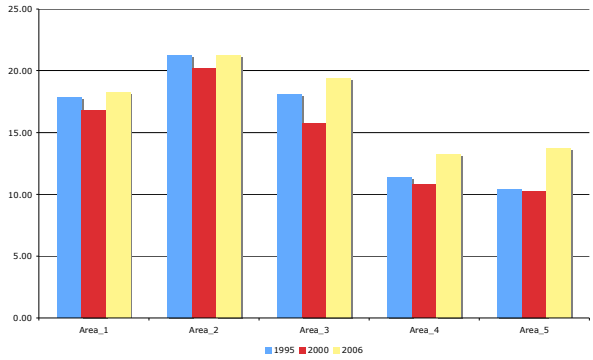

Figure 5: Theatre participation rate by gender and year (per cent)

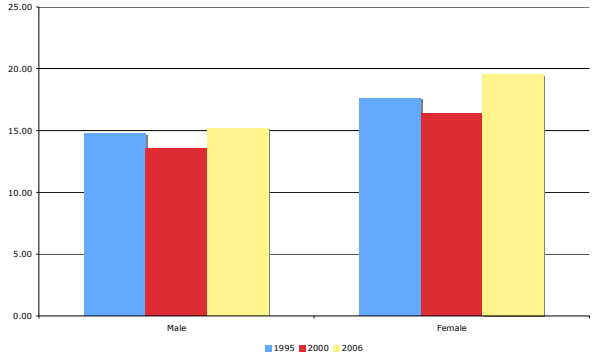

Table 1: SIAE data

Macro-aggregate	Kind of performances
Cinematographic activity	Cinema performances
Theatre activity	Drama, dialectal drama, *teatro napoletano*, reading or recital, opera, operetta, musical, classical and modern ballet, dance concert, puppets/marionettes, variety shows, circus
Concert activity	Classical concert, band concert, choral concert, jazz concert
Sports activity	Football, basketball, volleyball, rugby, baseball, boxing, cycling, athletics, tennis, show-jumping, motor racing, motorcycling, motor boating, swimming and water polo, winter sports, bowling, go-karting
Dance and concerts	Dance with orchestra, Dance with recorded music, concerts with orchestra, concerts with recorded orchestra
Travelling performances	Travelling attractions, amusement parks
Shows and exhibition	Shows and exhibitions
Other activities	Outdoor performances, variety shows

Table 2: Definitions and symbols of variables

Variables (symbols)	*Description*	*Hp*
Dependent variables		
Part_th	Respondent attended a theatre performance in the last 12 months. Dichotomous variable 0=No; 1=Yes.	..
FQ_th	Frequency of attendance at theatre performance 1=Never in the last 12 months; 2=Occasional (once or twice); 3=Frequent (three times or more)	..
Explanatory variables		
Socio-demographic characteristics		
Edu (E)	Education level. Categorical variable. 1=primary education; 2=secondary-school; 3=third level; 4= post-graduate level	+
Fam_edu (M)	Education level of spouse and educational level of parents (same category as Edu)	+
Age (A)	Age categories (Dichotomised in final analysis). Reference group category 1=18–24; 2=25–34, 3=35–44, 4=45–54, 5=55–64, 6=65–74, 7=75+	+
Gender (S)	Gender: Dichotomous variable 0=female, 1=male	+/-
Number of performances (SUP)	Numbers of theatre performances in the region	+
Socio-economic characteristics		
House (I)	Proxy for family income. Categorical variable. 1=rented; 2=owned / life tenancy; 3=other	+
Occup (O)	Employment status. (Dichotomised in final analysis) Reference group 1=employed; 2= seeking employment; 3=others	+/-
Ticket (TP)	Ticket price for theatre	-
Time constraint		
Marital Status (MS)	Marital status: 0=Single; 1=Married	+/-
Children 0–5 years	Family with children 0–5 years old	-
Children 6–13 years	Family with children 6–13 years old	-
Area	Geographic area categories (Dichotomised in final analysis): 1=northwest; 2=north-east; 3=central; 4=south; 5=islands	+/-
Participation in other cultural activities		
Cinema (Cin)	Respondent visit cinema in the last 12 months – Dichotomous variables 0=No; 1=Yes	+/-
FQ_cin	Frequency of attendance at cinema showing 1=Never in the last 12 months; 2=Occasional (once or twice); 3=Frequent (three times or more)	+/-
Museum (Mus)	Respondent visit museum in the last 12 months – Dichotomous variables 0=No; 1=Yes	+/-
FQ_mus	Frequency of visit to museum – 1=Never in the last 12 months; 2=Occasional (once or twice); 3=Frequent (three times or more)	+/-
TVHrs (-)	Hours of TV watched per day capped at 11 (11=11+)	-

Table 3: Theatre-goers and non-theatre-goers and cinema and museum attendance

	Theatre-goers	*Non-theatre-goers*
2006		
Cinema	2.53	1.69
Museum	1.83	1.22
2000		
Cinema	2.59	1.62
Museum	1.91	1.27
1995		
Cinema	2.60	1.66
Museum	2.13	1.29

Where 1= never go; 2= 1–3 times; 3= 4–6 times, 4= 7–12 times; 5=more than 12 times

Table 4: Participation rates for each core activity for each year, full sample

Event Type	***1995***	***2000***	***2006***	***Percentage Δ odds***
Theatre	17.22	15.3	18.51	9.21
Drama	..	7.69	0.01	..
Variety show	..	1.79	1.52	..
Ballet	..	1.69	2.28	..
Musical, operetta	..	3.35	4.52	..
Theatre in local dialect	..	4.51	4.81	..
Children's theatre	..	2.06	3.21	..
Circus	..	1.01	3.11	..
Others	..	..	1.32	..
Museum	29.97	28.23	25.99	-17.97
Exhibition	..	24.43	23.40	..
Archaeological site	..	15.66	14.93	..
Monuments	..	39.02	30.80	..
Visit to historical city	..	37.92	36.37	..
Visit to point of natural beauty	..	34.58	35.88	..
Zoo, aquarium, botanic garden	..	15.97	16.25	..
Nature reserve	..	16.68	17.21	..
Cinema	46.73	43.13	47.81	4.44
Classical music concerts	8.90	5.37	4.99	-73.33
Lyrical music concerts and opera	..	3.55	3.47	..
Rock and pop music concerts	..	9.46	9.60	..
Jazz and blues concerts	..	4.04	3.92	..
Folk and ethnic music concerts	..	5.94	4.41	..
Other music concerts	..	6.47	8.18	..
Disco	31.48*	28.10*	18.93	..
Dance hall or night club	..	..	14.36	..
Festival, street entertainment	62.29	53.91	45.82	-60.2

Source: Our elaboration on ISTAT data.
*Disco and dance hall

Table 5: Participation model – Dependent variable: Theatre attendance

	2006		2000		1995	
	OR	ME	OR	ME	OR	ME
Edu	1.271	0.027	1.329	0.024	2.084	0.063
	(0.109)**	(0.001)**	(0.150)*	(0.009)*	(0.056)**	(0.002)**
Fam_edu	1.255	0.025	1.391	0.028		
	(0.109)**	(0.011)**	(0.157)**	(0.01)*		
age_2	1.304	0.031	1.147	0.012	1.216	0.018
	(0.101)**	(0.009)**	(0.077)*	(0.006)*	(0.068)**	(0.005)**
age_3	1.874	0.076	1.383	0.03	1.377	0.03
	(0.153)**	(0.011)**	(0.104)**	(0.007)*	(0.090)**	(0.007)**
age_4	1.795	0.071	1.588	0.044	1.958	0.07
	(0.146)**	(0.011)**	(0.116)**	(0.008)*	(0.124)**	(0.008)**
age_5	2.568	0.12	1.821	0.06	2.221	0.087
	(0.214)**	(0.012)**	(0.144)**	(0.009)*	(0.154)**	(0.009)**
age_6	2.254	0.102	1.583	0.044	1.975	0.073
	(0.211)**	(0.013)**	(0.148)**	(0.01)*	(0.167)**	(0.011)**
age_7	1.459	0.045	0.835	-0.014	1.252	0.021
	(0.169)**	(0.015)**	(0.111)	(0.01)*	(0.16)	(0.013)**
male	0.69	-0.041	0.705	-0.029	0.69	-0.032
	(0.027)**	(0.004)**	(0.027)**	(0.003)*	(0.024)**	(0.003)**
Nr. Perf.	1.081	0.009	1.214	0.016	1.169	0.046
	(0.025)**	(0.003)**	(0.034)**	(0.002)*	(0.024)**	(0.006)**
house1	0.798	-0.024	0.896	-0.009	0.99	-0.001
	(0.080)*	(0.01)*	(0.089)	(0.008)*	(0.092)	(0.008)**
house2	0.991	-0.001	1.016	0.001	1.059	0.005
	(0.088)	(0.011)	(0.09)	(0.007)*	(0.091)	(0.007)**
Employed	0.953	-0.005	0.905	-0.008	0.91	-0.008
	(0.049)	(0.006)	(0.045)*	(0.004)*	(0.039)*	(0.004)**
Seeking_empl.	0.739	-0.032	0.744	-0.022	0.769	-0.021
	(0.070)**	(0.009)**	(0.069)**	(0.006)*	(0.057)**	(0.005)**
Ticket	0.61	-0.055	0.415	-0.074	0.968	-0.003
	(0.047)**	(0.008)**	(0.040)**	(0.008)*	(0.010)**	(0.006)**
Marital status	1.007	0.001	1.005	0.001	1.024	0.002
	(0.017)	(0.002)**	(0.018)	(0.001)*	(0.017)	(0.001)**
Children_0–5	0.937	-0.007	0.797	-0.019	0.737	-0.026
	(0.05)	(0.006)	(0.044)**	(0.005)*	(0.034)**	(0.004)**
Children_6–13	1.045	0.005	0.908	-0.008	0.878	-0.011
	(0.043)	(0.005)	(0.038)*	(0.004)*	(0.033)**	(0.003)**
Area_1	1.221	0.023	1.734	0.052	1.019	0.002
	(0.093)**	(0.009)**	(0.144)**	(0.009)*	(0.076)	(0.007)**
Area_2	1.546	0.051	2.23	0.082	1.21	0.017
	(0.113)**	(0.009)**	(0.175)**	(0.009)*	(0.092)*	(0.007)**
Area_3	1.29	0.029	1.703	0.051	1.209	0.017
	(0.097)**	(0.009)**	(0.141)**	(0.009)*	(0.089)**	(0.007)**
Area_4	0.92	-0.009	1.083	0.007	1.228	0.019
	(0.07)	(0.008)	(0.085)	(0.007)*	(0.090)**	(0.007)**
Cinema_part	3.192	0.137	3.739	0.127	4.011	0.135
	(0.148)**	(0.006)**	(0.170)**	(0.005)*	(0.168)**	(0.004)**
Museum_part	4.428	0.211	3.875	0.15	4.936	0.187
	(0.173)**	(0.006)**	(0.148)**	(0.005)*	(0.172)**	(0.005)**
TVHrs	0.967	-0.004	0.941	-0.005	0.943	-0.005
	(0.011)**	(0.011)**	(0.011)**	(0.001)*	(0.011)**	(0.001)**
Observations	27071	27071	30423	30423	38208	38208

Standard errors in parentheses

* significant at 5%; ** significant at 1%

Table 6: Frequency model – Dependent variable: Theatre attendance

	2006	2000	1995
edu	0.241	0.291	0.709
	(0.079)**	(0.110)**	(0.026)**
Fam_edu	0.249	0.393	
	(0.080)**	(0.111)**	
age_2	0.282	0.083	0.175
	(0.077)**	(0.068)	(0.055)**
age_3	0.709	0.352	0.36
	(0.081)**	(0.075)**	(0.065)**
age_4	0.71	0.526	0.766
	(0.081)**	(0.074)**	(0.063)**
age_5	1.005	0.596	0.781
	(0.083)**	(0.079)**	(0.068)**
age_6	0.833	0.313	0.561
	(0.092)**	(0.093)**	(0.082)**
age_7	0.241	-0.411	0.028
	(0.114)*	(0.131)**	-0.123
male	-0.402	-0.382	-0.374
	(0.038)**	(0.039)**	(0.033)**
Nr_perf	0.069	0.203	0.567
	(0.023)**	(0.028)**	(0.069)**
house1	-0.312	-0.153	0.047
	(0.098)**	(0.099)	(0.09)
house2	-0.034	0.005	0.105
	(0.086)	(0.089)	(0.084)
Employed	-0.016	-0.077	-0.043
	(0.05)	(0.049)	(0.041)
Seeking_empl.	-0.25	-0.305	-0.28
	(0.093)**	(0.093)**	(0.073)**
Ticket	-0.513	-0.971	-0.030
	(0.074)**	(0.095)**	(0.010)**
Marital Status	0.008	0.007	0.017
	(0.016)	(0.017)	(0.016)
Children_0–5	-0.004	-0.161	-0.167
	(0.051)	(0.055)**	(0.045)**
Children_6–13	0.093	0.026	-0.018
	(0.039)*	(0.041)	(0.036)
area_1	0.138	0.611	-0.066
	(0.074)	(0.083)**	(0.073)
area_2	0.4	0.845	0.117
	(0.070)**	(0.078)**	(0.074)
area_3	0.155	0.525	0.087
	(0.073)*	(0.083)**	(0.071)
area_4	-0.139	0.096	0.183
	(0.074)	(0.078)	(0.071)*
Cinema	0.478	0.533	0.516
	(0.017)**	(0.016)**	(0.015)**
Museum	0.826	0.596	0.835
	(0.024)**	(0.021)**	(0.018)**
TVHrs	-0.032	-0.057	-0.038
	(0.011)**	(0.012)**	(0.011)**
Observations	27071	30423	38208

Standard errors in parentheses

* significant at 5%; ** significant at 1%

Table 7: Finite mixture model – Dependent variable: Theatre attendance

	2006		2000		1995	
	Comp.1	Comp.2	Comp.1	Comp.2	Comp.1	Comp.2
edu	0.182	0.209	0.218	0.035	0.55	0.439
	(0.053)**	(0.17)	(0.072)**	(0.189)	(0.022)**	(0.051)**
Fam_edu	0.226	0.113	0.355	0.278		
	(0.054)**	(0.171)	(0.073)**	(0.188)		
age_2	0.173	0.44	0.079	-0.009	0.064	-0.028
	(0.075)*	(0.23)	(0.06)	(0.131)	(0.048)	(0.106)
age_3	0.489	0.562	0.36	-0.002	0.198	0.057
	(0.078)**	(0.241)*	(0.065)**	(0.146)	(0.056)**	(0.123)
age_4	0.373	0.999	0.434	0.062	0.47	0.262
	(0.080)**	(0.223)**	(0.065)**	(0.14)	(0.054)**	(0.116)*
age_5	0.591	1.185	0.488	0.292	0.477	0.315
	(0.081)**	(0.221)**	(0.070)**	(0.141)*	(0.061)**	(0.117)**
age_6	0.469	1.001	0.189	0.205	0.282	0.057
	(0.094)**	(0.232)**	(0.089)*	(0.159)	(0.076)**	(0.14)
age_7	-0.403	0.811	-0.828	0.033	-0.236	-0.519
	(0.146)**	(0.241)**	(0.178)**	(0.184)	(0.147)	(0.217)*
Male	-0.338	-0.056	-0.352	-0.024	-0.261	-0.11
	(0.036)**	(0.075)	(0.034)**	(0.067)	(0.029)**	(0.063)
Nr. Perf.	0.009	0.228	0.138	0.031	0.111	0.042
	(0.022)	(0.053)**	(0.025)**	(0.046)	(0.018)**	(0.037)
house1	-0.226	-0.503	-0.123	-0.005	0.038	-0.255
	(0.097)*	(0.219)*	(0.086)	(0.182)	(0.079)	(0.163)
house2	-0.048	-0.029	0.044	0.02	0.095	-0.138
	(0.084)	(0.175)	(0.076)	(0.167)	(0.073)	(0.148)
Employed	0.031	-0.141	-0.098	0.093	-0.006	0.027
	(0.048)	(0.105)	(0.044)*	(0.089)	(0.036)	(0.078)
Seeking_empl.	-0.179	-0.124	-0.308	0.219	-0.226	-0.077
	(0.095)	(0.21)	(0.088)**	(0.155)	(0.065)**	(0.136)
Ticket	-0.268	-0.576	-0.766	0.216	-0.132	0.01
	(0.069)**	(0.148)**	(0.085)**	(0.169)	(0.014)**	(0.029)
MS	0.015	-0.01	-0.005	0.008	0.008	0.016
	(0.015)	(0.026)	(0.016)	(0.027)	(0.014)	(0.028)
Ch_0–5	-0.079	0.102	-0.183	-0.122	-0.126	-0.143
	(0.053)	(0.122)	(0.052)**	(0.105)	(0.043)**	(0.097)
Ch_6–13	0.054	-0.129	-0.016	0.101	-0.005	-0.073
	(0.034)	(0.112)	(0.036)	(0.075)	(0.032)	(0.079)
area_1	0.088	0.119	0.511	-0.175	0.035	-0.075
	(0.071)	(0.142)	(0.079)**	(0.136)	(0.072)	(0.115)
area_2	0.274	0.342	0.605	-0.018	0.14	0.215
	(0.067)**	(0.134)*	(0.075)**	(0.127)	(0.072)	(0.114)
area_3	0.156	-0.184	0.416	-0.124	0.145	0.036
	(0.070)*	(0.153)	(0.078)**	(0.134)	(0.070)*	(0.111)
area_4	-0.108	-0.105	0.06	-0.234	0.208	-0.309
	(0.073)	(0.141)	(0.077)	(0.12)	(0.072)**	(0.121)*
Cinema	0.359	0.205	0.442	0.162	0.387	0.245
	(0.014)**	(0.036)**	(0.013)**	(0.031)**	(0.013)**	(0.027)**
Museum	0.454	0.539	0.366	0.275	0.492	0.367
	(0.016)**	(0.067)**	(0.014)**	(0.048)**	(0.013)**	(0.035)**
TVHrs	-0.039	0.015	-0.063	-0.016	-0.027	0.034
	(0.012)**	(0.019)	(0.012)**	(0.019)	(0.011)*	(0.018)
Constant	-2.585	-1.987	-2.666	-1.322	-4.159	-1.358
	(0.252)**	(0.544)**	(0.275)**	(0.551)*	(0.153)**	(0.338)**
imlogitpi1		2.691		3.323		2.998
		(0.201)**		(0.120)**		(0.166)**
pi1		0.936		0.965		0.952
		(0.119)**		(0.004)**		0.007
pi2		0.064		0.347		0.047
		(0.119)**		(0.004)**		0.007
Observations		27071		30423		38208