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Accounting for taste: An examination of socioeconomic gradients in attendance at arts events

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Accounting for Taste:
An Examination of Socioeconomic Gradients in
Attendance at Arts Events

Pete Lunn and Elish Kelly*

Abstract: We critically examine and empirically test the hypothesis that the strong socioeconomic gradients characterising attendance at arts events result from similar gradients in preferences for the arts, in line with existing theories of demand for the arts derived from orthodox consumer theory. To control for preferences, we use individual measures of stated interest in the arts and reports of viewing and listening habits, as distinct from attendance at live events. These variables are strongly associated with attendance, yet despite their inclusion as covariates within a hierarchical logistic regression analysis, strong and significant socioeconomic gradients remain within the estimated models. While it remains possible that our controls do not capture sufficient variation in preferences for the arts, it appears more likely that the socioeconomic composition of live arts audiences is influenced by other factors in addition to individual preferences for the arts.

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Accounting for Taste: An Examination of Socioeconomic Gradients in Attendance at Arts Events

I. Introduction

This paper addresses possible causes of the socioeconomic gradients that characterise attendance at arts events. Beginning with the work of Baumol and Bowen (1966), it has become an established empirical fact that people of higher educational attainment, income and social class are more likely to attend live arts performances (e.g. Ford Foundation, 1974; DiMaggio and Useem, 1978; National Endowment for the Arts, 2004). This empirical regularity has been recorded for almost all mainstream art forms, including musical, visual and language arts¹. Furthermore, socioeconomic gradients are not confined to what might be considered the “high arts”, but can be observed even for various categories of rented movies (Collins et al., 2007). The pattern has also been recorded across different nations (e.g. Throsby and Withers, 1979) and persists despite policy interventions designed to increase attendance among those from lower socioeconomic groups.

At one level, the existence of such social gradients is unsurprising, since people with higher incomes are more likely to consume most material, financial, and experiential goods. Yet these strong social gradients are not sensitive to price and apply even to attendance at arts events where there is no admission charge (Throsby, 1994; O’Hagan, 1996). Moreover, educational attainment and social class are frequently found to be better predictors of attendance than income (Seaman, 2006). As we will show, all of the above findings are replicated in, or consistent with, our data for Ireland.

An understanding of what lies behind these socioeconomic gradients would be of assistance to policymakers. In the long-running debate about justification for public funding of the arts, considerations of equity and equality of access feature prominently (e.g. O’Hagan, 1996; Peacock, 2000) and attempts to close the socioeconomic gap in arts attendance are frequently combined with, or even made

¹ See Seaman (2006) for review.

a condition of, public subsidy. Any improvement in our understanding may therefore assist in designing arts policy.

Although there is more than one approach to the study of demand for live arts, this strand of cultural economics relies heavily on orthodox consumer theory. It is usually assumed that attendance at arts events is a function of preferences, income and prices, and that consumers are utility maximizers. Explanations for differential attendance are sought via what Throsby (1994) refers to as “the endogenization of tastes” or, more simply, why some people value the arts more highly than others. Two prominent models of preference formation for the arts are those based on the *Rational Addiction* approach (Becker and Murphy, 1988) and the *Learning-by-Consuming Model* (Lévy-Garboua and Montmarquette, 1996, 2003). According to the former model, consumers maximise an intertemporal utility function such that they sacrifice current utility to get the benefits of later consumption, which they accurately anticipate. In the learning-by-consuming model consumers are, by contrast, uncertain of the quality of performances, and so update their preferences in response to experience of particular art events. What is implicit in the two models is that early experience increases the utility of subsequent consumption.

To explain why those in higher socioeconomic groups develop greater preferences for the arts, it is therefore necessary to further hypothesise that higher socioeconomic status results in a greater likelihood of exposure to the arts early in the life course. A variety of indirect effects have been proposed, including the possibilities that those in higher socioeconomic groups are more likely to be exposed to the arts by their parents, schools or social networks (e.g. Orend and Keegan, 1996; Lévy-Garboua and Montmarquette, 2003; Champarnaud et al., 2008). Hence, socioeconomic status may have an initial impact on consumption of the arts, which leads to preferences for the arts being reinforced by ongoing consumption experiences.

This approach is distinct from, but not necessarily inconsistent with, an established argument for direct effects of education on preferences for the arts. The assertion, dating back to Keynes (Laurence, 2007) but still popular (e.g. Borgonovi, 2004), is that better educated individuals have a greater capacity to

appreciate and understand the intellectual and metaphorical qualities of artistic performances.

With this focus on preference formation, the literature rarely considers a concern that is frequently expressed in debates on arts policy, namely that the types of productions and environments associated with live performances might be exclusive or elitist in some way and may, therefore, attract audiences from disproportionately higher socioeconomic groups. There are crucial distinctions here between preferences for experiencing the arts, in general, and for specific productions or social environments. For example, it is possible that a theatre in a particular city, where there is a broad interest in drama across social groups, might nevertheless select its productions, design the theatre and market the experience in a manner that is more appealing to higher socioeconomic groups, intentionally or otherwise².

This argument can be related to the work of Akerlof and Kranton (2000), who contend that the orthodox economic approach to decision-making in markets excludes the importance of *identity* as a motivating force. Translating their perspective into demand for live arts, two individuals with an equal liking of theatre performances may differ in the degree to which a theatre trip appeals, depending on whether they identify with the production and/or the venue, or because of differential value placed on these by different communities with which each individual might identify. Identity is only one possible source of a disjunction between preferences and attendance. A similar argument may be advanced in relation to the social networking and status opportunities associated with arts events. The common theme here is that the preferences of the individual for experiencing artistic performances may not be fully expressed in the consumption choices they make, given other factors associated with live events. This possibility, therefore, represents an alternative to the orthodox approach to demand for the arts in cultural economics.

² Such a socioeconomic bias could arise for several reasons. A theatre concerned about revenue has an obvious incentive to attract audiences from higher socioeconomic groups, who may be willing to pay for more expensive seats and refreshments. Marketing techniques tend also to be designed more for high spending groups. But unintentional targeting may also occur if theatre staff are themselves of higher than average socioeconomic status and are prone to the 'false consensus effect' (Ross et al., 1977).

The present analysis is motivated by access to cross-sectional survey data from Ireland that permits a reasonable test of the orthodox approach. True preferences are unobservable, yet the *Public and the Arts 2006* survey collected subjective and behavioural measures (reported behaviour) with respect to interest in the arts. As well as recording attendance at a fairly exhaustive spectrum of live arts events, the survey included subjective questions about individual interest in the arts and also questions about viewing and listening habits that were specific to each art form. We use these responses to construct three variables, henceforth referred to as the ‘interest variables’, which relate to (1) subjectively expressed interest in the arts, (2) consumption of a specific art form via television, radio, recordings etc., and (3) the number of other art forms consumed in this fashion. We use these interest variables as controls within hierarchical logistic regression models, where the dependent variables are binary indicators of attendance at live events of various types. After estimating an attendance model based on a standard set of background variables, including educational attainment and social class, we add the interest variables to the specification.

Based on the assumption that the socioeconomic gradient for attendance at live arts events is primarily driven by an equivalent gradient of individual preferences, our initial hypothesis is that the estimated association between socioeconomic status and attendance should be much reduced by the inclusion of the interest variables in the model specification. If, on the other hand, there are missing social forces that drive a wedge between preferences for the arts and attendance at live performances, then the socioeconomic variables may continue to determine attendance to a considerable degree even after the interest variables are introduced. The validity of this reasoning, which is central to the paper, clearly depends on whether the additional subjective and behavioural interest variables represent good indicators of individual preferences and can hence be considered to “control” for preferences to a sufficient degree. We address this issue at various points throughout the paper.

II. Data and Key Variables

The data used in this paper come from the *Public and the Arts 2006* survey, which was commissioned by the Irish Arts Council to provide information on the behaviour and attitudes of Irish people regarding various arts-related issues. Face-to-face interviews were conducted with a representative sample of individuals aged 15 and over between May and September 2006³. The final sample size was 1,210.

The survey questionnaire asked about attendance at 22 types of arts events and 12 types of venues; participation in 18 kinds of artistic activities; reading habits regarding five forms of literature; the purchase of arts-related items; viewing and listening to arts programming and recordings via electronic media; perceived barriers faced in attending art activities; and attitudes and awareness about the arts. The reference period for each question was the previous 12 months.

As well as data on the wide range of arts-related material just discussed, the dataset contains detailed information on demographic and socioeconomic characteristics, such as gender, age, educational attainment, economic status, social class, income, location, etc. We use these background variables initially to model the determinants of attendance at four types of live art event: mainstream films, plays, art exhibitions, and classical music events⁴. We then present summary results for the same exercise applied to rock/pop concerts, stand-up comedy, musicals and street theatre⁵.

As is often the case in such surveys, almost half of the respondents (548, or 45%) did not provide household income information. Thus, the inclusion of this variable in our models greatly reduces the sample size. Our strategy is therefore to present

³ The survey covered the Republic of Ireland only. One hundred sample points were randomly selected from the Irish District Electoral Divisions (DEDs) list and at each sampling point 12 households were randomly chosen, with one person interviewed per household. To ensure the survey was representative of the population, quota controls were set for age, gender, region and social class. A more exhaustive description of the survey methodology, complete with demographic comparisons, is contained in *The Public and the Arts 2006*, which is available from the Arts Council of Ireland (www.artscouncil.ie/Publications/PublicandtheArts2006.pdf).

⁴ This category combines attendance at classical concerts, opera and ballet.

⁵ The full models for the first four art forms are presented in Tables 4 to 7. Only odds ratios for educational attainment are provided for the second four art forms but full models are available from the authors on request.

three specifications: (1) a main model relating attendance to socioeconomic and other background characteristics, (2) a model that includes the interest variables, and (3) a model that additionally includes household income but reduces the sample⁶. We return to this specification issue in Section IV.

The three interest variables are constructed as follows. Subjective interest in the arts is derived from a question that asked respondents to assess the statement “I am interested in the arts (e.g. music, dancing, reading for pleasure, etc.)” on a 5-point Likert scale, ranging from ‘strongly agree’ to ‘strongly disagree’. Initial testing showed that reducing this variable from five categories to two (combining the ‘strongly agree’ and ‘agree’ categories, then the remaining three categories) did not affect its explanatory power⁷ and nor did it significantly alter the coefficients on other covariates. For ease of interpretation, therefore, results are reported for the binary variable that equates to having a subjective interest in the arts (75%) versus not (25%). Given these proportions, this first variable is perhaps better thought of as identifying the minority of people who claim not to be interested in the arts⁸.

While this first binary interest variable may identify those who are simply uninterested, the degree of individual interest will vary considerably among those with a stated interest, both by degree and by type of art. Aiming to capture this variation, the remaining two interest variables are derived from 22 questions that asked respondents whether they had “made a point of watching or listening in the past 12 months on any media” to specific types of art⁹. In other words, the remaining two interest variables relate not to subjective evaluations, but to reports of consumption choices regarding television, radio and recordings. In the survey these questions about viewing and listening via electronic media followed those relating to live performances and were preceded by an explicit statement to the

⁶ The reduced income sample may also introduce bias to our estimates if those who refused to provide household income information differ in arts-related behaviour. We tested for this sample bias by estimating our models on a full sample that included a dummy variable for respondents who did not provide income information. The variable was not significant.

⁷ This was assessed by a likelihood ratio test.

⁸ There were a further 12 survey questions that employed Likert scales to measure different attitudes towards the arts. None of the responses, either individually or in any combination attempted, proved a match for the binary subjective interest variable just described, in terms of explanatory power, and our models remain robust to the inclusion of these additional variables.

⁹ The inclusion of the wording “made a point of” was intended to exclude those who happened to catch part of a programme or recording because of someone else’s interest.

respondent that the “questions relate not to live events you attended but to your viewing and listening habits”.

Based on the responses, a second binary interest variable captures whether the respondent viewed and/or listened to the specific type of art being modelled. For instance, in the model for attending a play, this ‘watched or listened’ variable takes the value 1 if the respondent had made a point of viewing and/or listening to a play in the previous 12 months and 0 if they had not¹⁰. For the four art forms we focus on initially, the proportions who had viewed or listened to each were as follows: 70% for a mainstream film, 24% for a play, 7% for an art exhibition and 17% for a classical event.

The third and final interest variable is based on a count of the number of art forms watched plus the number listened to in the previous 12 months, excluding the specific type of art corresponding to the dependent variable¹¹. The distribution of this variable (without any specific art form excluded) is given in Figure 1, which indicates considerable variation in art-related watching and listening behaviour. The mean count of different art forms is 5.4 and the standard deviation 4.2, with a strong right skew. For inclusion in the models, the count is increased by one, logged, then standardised, such that one unit of the variable can be interpreted as one standard deviation in the logged distribution of the number of different types of art respondents viewed or listened to.

In summary, the three interest variables amount to a binary variable of subjective (self-declared) interest in the arts in general, a binary variable relating to having made a point of viewing or listening to a programme or recording of the specific type of art in question, and a continuous variable that measures the number of other art forms respondents made a point of viewing or listening to. Our contention is that these three interest variables, in combination, should capture a substantial portion of the variance between individuals regarding their preferences for the arts.

¹⁰ For mainstream films and art exhibitions, this interest measure captures individuals viewing behaviour only, while for plays and classical events it represents both viewing and listening.

¹¹ Where a respondent both viewed and listened to the same art form, this adds two counts to the variable. Thus, visual arts, which cannot be listened to, contribute somewhat less to the count than art forms that can be both watched or listened to, such as plays. The alternative of adding just one count removes this bias, but reduces the available variation. In practice, the difference is small and the results are not affected.

III. Descriptive Analysis

Before presenting our multivariate analysis, some descriptive results help to relate our data to previous work. This section describes patterns of attendance at the various arts events and how that attendance varies by gender, educational attainment and social class, as well as by our three interest variables. Sample frequencies for the other covariates used in the analysis are provided in Table A1 in the Appendix.

The attendance variables are binary and take the value 1 where the individual attended an event in the previous 12 months and 0 otherwise. Figure 2 presents the proportion of the sample that attended each of the eight types of art event we examine, including a breakdown by gender. Mainstream film emerges as the most popular art form, in that over half of our sample (57%) had attended a film in the previous 12 months. This is followed by plays (30%) and rock/pop concerts (28%). Art exhibitions and classical events recorded lower attendance rates (15% and 12% respectively). With the exception of rock/pop concerts and stand-up comedy, women have higher rates of attendance at arts events than men, particularly at what could be considered ‘high art’ activities. Such gender differences, while not a universal finding, have been recorded in a number of previous studies (Seaman, 2006).

Table 1 provides attendance levels by educational attainment for the four art forms that constitute our primary focus. The results reaffirm what has been previously observed: individuals with higher educational qualifications are much more likely to attend. For example, only 47% of those with no second-level qualifications attended a film in the previous 12 months, compared to 82% of graduates. The same contrast is more striking still for attendance at the more high-brow art events, such as Art Exhibitions (6% versus 26%).

Figure 3 illustrates that attendance also varies by social class. People from working class backgrounds are less likely to attend arts events compared to those from a higher social class. The difference is especially marked for attendance at art exhibitions and classical events.

Hence, the patterns of attendance in our data for Ireland with respect to gender, educational attainment and social class replicate or, in the case of gender, are consistent with the existing literature. Thus, our data appear fairly typical in the context of existing international literature, as outlined in Section 1.

Turning to our three interest measures, Table 2 reveals, perhaps not surprisingly, that these variables are strongly associated with attendance at the four types of event that form our initial focus. Attendees are more likely to state that they have an interest in the arts, are more likely to have consumed the art form in question via electronic media and are also more likely to have watched or listened to a greater range of art forms. Furthermore, this bivariate analysis suggests that these effects are particularly strong for art exhibitions and classical events.

Table 3 shows that there is also a strong link between the interest variables and educational attainment. A similar pattern exists by social class as well¹². These descriptive results again replicate previous work. The similarity in the social gradients for viewing and listening as for attendance is consistent with the view that those of higher socioeconomic status are more interested in the arts and therefore more likely to attend events; that is, that attendance patterns primarily reflect preferences for the arts (O'Hagan, 1996). However, multivariate analysis offers a sterner test of this perspective.

IV. Logistic Regression Analysis

Tables 4 to 7 present logistic regression models for the determinants of attending a mainstream film, a play, an art exhibition and a classical music event¹³. For each dependent variable, three models are presented: a basic specification (model 1), the basic specification plus our three interest variables (model 2), and a final model with both interest variables and income included in the specification (model 3).

¹² Not shown but available from the authors on request.

¹³ Coefficients, standard errors (in brackets) and odds ratios are supplied.

The basic specification makes use of the following background variables: gender, age, presence of at least one child (under 18 years) in the household, household location, educational attainment, work status and social class. To improve parsimony, the number of categories employed for each explanatory variable is the result of an initial investigation employing a likelihood ratio test to determine the relative explanatory power of nested models. For example, reducing the categories of social class (defined by the occupation of the head of household), from the six available in the survey to two, does not result in a statistically significant reduction in log likelihood¹⁴.

Looking across Tables 4 to 7, the addition of the three interest variables makes a definite contribution to the model for all four types of art event: the change in log likelihood between model 1 and model 2 is pronounced and highly significant. It is important to point out at this stage that we make no strong claim as to the exogeneity of these interest variables. Their contribution to the models, albeit somewhat different for each art form, suggests that subjectively expressed interest and watching and listening habits are strongly related to attendance. Our conjecture is that the interest variables capture general interest in the arts and interest in the specific type of art, both of which are likely to influence attendance positively. Other interpretations are, however, possible. A positive experience of attending an event may raise interest and alter people's watching and listening habits in their own homes. Alternatively, enjoying media programmes related to particular productions or artists may prompt attendance at a specific event. Yet, even if other causal connections exist, it remains likely that the three interest variables act as indicators of preferences. Thus, the impact their inclusion has on the coefficients for educational attainment, social class and other variables in the basic specification provides a reasonable test of the theory that membership of particular social groups is associated with interest in the arts, and that it is this difference in preferences that drives attendance.

In model 3, a five-category household income variable is added to the specification. Given the reduction in sample size, as outlined in Section II, this inevitably increases standard errors and reduces the power of associated statistical

¹⁴ Across art forms, we find that the statistically significant difference in attendance by social class occurs between people from classes defined by semi-skilled or unskilled manual occupations and those from skilled manual occupations and above, once educational attainment is controlled for.

tests. Thus, it is the comparison of coefficients relative to their standard errors, rather than changes in their statistical significance, that is pertinent.

In Table 4, the dependent variable is attendance at a mainstream film. Focussing on model 1, age emerges as a strong determinant of attendance. According to the estimated odds ratios, young adults are some two to seven times more likely to have gone to a mainstream film in the previous 12 months than those in older age categories. Residential location is also important. People living in cities or their surrounding suburbs are more likely to attend. Turning to the variables that indicate socioeconomic status, there is a strong relationship between educational attainment and going to films. The estimated likelihood of attendance rises with attainment up to the level of college graduates, who are almost four times more likely to go to a film than those with no qualifications. There is a significant positive effect of social class as well. Regarding work status, unemployed people and homemakers are less likely to attend.

When the interest variables are added in model 2, people who declare an interest in the arts and those who have made a point of watching films on television or DVD are more likely to have attended a film, while there is no significant relationship with watching or listening to other art forms. Despite the strong contribution of these interest variables to the model, the coefficients for the other significant covariates remain almost unchanged, although there is a slight reduction in the gradient across the coefficients for educational attainment.

When income is included in model 3, it is highly significant. Those in the lowest income category are approximately half as likely to attend a mainstream film as those in middle income groups, and almost six times less likely to attend than those in the highest income group. However, comparing coefficients with the original specification in model 1, controlling for interest and income does little to alter the significance and strength of the estimated relationships, except perhaps for the influence of work status. Changes to the coefficients are small in comparison with their standard errors, suggesting that the effects of interest and income are largely separate and additional to those identified in the basic specification.

Table 5 repeats the analysis for attendance in the previous 12 months at a play. The basic specification estimates that women are twice as likely to attend as men. The age effect is the reverse of that for films – older people are several times more likely to go to plays. Having children in the house also increases attendance. There are again strong effects of socioeconomic status: educational attainment, social class and work status are all significant.

Once the interest variables are entered in model 2, those who have watched or listened to plays on television, radio or via recorded media, are over four times more likely to attend than those who have not. People who have watched or listened to a wider range of art forms are also significantly more likely to attend a play. In comparison with the basic specification, the impact on the coefficients is small, although there is some reduction in the gradient across the coefficients for age and educational attainment. In model 3, those on low incomes are significantly less likely to attend. Similarly to the models for attending a mainstream film, the inclusion of income reduces the coefficients on the work status variable, but has only a modest impact on the gradient for educational attainment and no effect on the coefficient for social class. It is important here to distinguish between the reduction in levels of statistical significance, which is inevitable given the reduced sample for which we have income information, and the change in the estimated coefficients, especially relative to their standard errors. After controlling for interest and income, there remains a strong and significant relationship between socioeconomic status and attendance at a play.

Table 6 presents the models for attendance at an art exhibition. Model 1 displays similar gender and age effects to those seen in Tables 4 and 5, but records much higher coefficients on educational attainment. Graduates are estimated to be almost five times more likely to attend an art exhibition and post-graduates over six times. The addition of the interest variables confirms the idea that art exhibitions are attended by a more select audience. All three interest measures are highly significant and the improvement in the goodness-of-fit statistics, which are presented at the bottom of the table, is dramatic. People who have watched a relevant television programme or DVD are almost ten times more likely to have attended an exhibition. The changes in the coefficients on educational attainment and age suggest that increased interest is probably one route via which age and

education increase attendance at art exhibitions. Yet there remain highly significant effects of educational attainment in model 2. This is even more the case when income is introduced in model 3. While the coefficients for income are not themselves statistically significant, a result that makes sense given the prevalence of free admission to art galleries, their inclusion strengthens the association between high levels of educational attainment and attendance¹⁵. Thus, despite controlling for interest and income, there is a very strong impact of educational attainment on attendance at art exhibitions, with graduates estimated to be some eight times more likely to attend. Although the sample size is not very high, it is worth emphasising that the models estimated are a good fit. While Nagelkerke R-squared statistics are not strictly comparable across models with different specifications, a figure in excess of 0.5 is high for a social participation model such as this. While once again acknowledging that the interest variables cannot be assumed to be entirely exogenous, the estimated relationships in Table 6 are strong and the associated explanatory power considerable.

Table 7 presents models for attendance at a classical music event. In model 1, the coefficients on gender, age, educational attainment and social class are similar to those for art exhibitions. Retirement also emerges as a significant factor for classical music events. More strikingly, the model responds differently to the inclusion of interest and income variables, in particular the latter. There is a reduction in the strength of the relationships estimated in model 1 when the interest variables are introduced in model 2, although educational attainment and social class remain significant. However, the inclusion of income in model 3 changes the picture considerably. There is a strong association between attendance at these classical music events and the highest income category. Furthermore, income appears to be an important factor in the original relationships recorded in models 1 and 2. The significant gradients apparent in the coefficients for age and educational attainment are absent in model 3, suggesting that these variables may have been acting as proxies for income in models 1 and 2. Based on these regressions, it remains possible, even likely, that a larger sample would still detect statistically significant relationships between attendance and educational attainment or social class. However, the models for this type of event behave

¹⁵ Note that the possibility that those of higher attainment attend exhibitions at educational institutions where they currently study is controlled for by the 'student' category of the 'work status' variable.

differently from those analysed thus far and the difference seems to revolve around the association between attendance and high income. This relationship is in keeping with the fact that many classical music events are expensive to attend, relative to the three art forms we have already investigated. One possibility, admittedly speculative, is that the expense associated with such events leads income to mask other socioeconomic influences. In other words, if that expense were to be reduced, it is possible that stronger effects of educational attainment and social class would re-emerge.

In earlier work with this data, educational attainment emerged as the most consistent determinant of attendance across the full range of over 20 different types of arts events and venues (Lunn and Kelly, 2008). Table 8 provides estimated odds ratios by educational attainment for four additional popular art forms: rock/pop concerts, stand up comedy, musicals and street theatre. The figures in brackets indicate the proportion of the population that attended each type of event in the previous 12 months. The odds ratios are again estimated from the same basic specification (model 1) and the subsequent inclusion of interest variables (model 2), followed by income (model 3). For all four art forms there are significant gradients in the odds ratios across levels of educational attainment. Controlling for interest and income may diminish these gradients somewhat, but they remain significant and strong. Hence, this pattern of regression results, which constitutes our primary finding, applies across a non-exhaustive yet extensive set of art forms.

There are nevertheless substantial differences across types of art in the pattern of odds ratios by educational attainment. With respect to stand up comedy and street theatre, the greatest differences in attendance occur at the higher end of the educational spectrum, between graduates and non-graduates, or even graduates and postgraduates. For rock/pop concerts and musicals, the key differences occur at the other end of the educational range, between those with no qualifications and those with at least second-level qualifications.

V. Discussion

There are at least two interpretations of our central finding that the strong socioeconomic gradients for attendance at arts events survive controlling for individual interest in the arts. First, the finding may suggest that attendance is only partly a matter of preferences for the arts and that other social forces are also important determinants. Or, second, it could be that the variables introduced to control for preferences are insufficient to do the job.

Considering this second possibility first, we accept that it is a possible interpretation of our findings, yet we find it unconvincing. The models themselves estimate very strong relationships between our interest variables and attendance at events, suggesting that they successfully capture significant variation between individuals. The estimated coefficients for the interest variables are universally positive, they are almost all statistically significant, and the estimated odds ratios are large. To appreciate the explanatory power of the interest variables, compare two individual covariate patterns: (1) an individual who declares an interest in the arts generally, has watched a television programme or DVD (or listened to a broadcast or CD) about the specific type of art form in question, and has watched or listened to one standard deviation above the mean worth of different art forms, and (2) an individual who conforms to the reference case. Our models suggest that the first individual is seven times more likely to attend a mainstream film, seven times more likely to attend a play, 107 times more likely to go to an art exhibition and 20 times more likely to go to a classical event. This would seem to indicate that the interest variables are picking up a substantial amount of the variation in individual interest for the arts. Furthermore, the inclusion of our interest variables very substantially improves the goodness-of-fit statistics across the models. Yet the inclusion of these interest variables in the specifications has only modest impacts on the socioeconomic gradients with respect to attendance at arts events. Thus, while it remains possible that these gradients reflect residual variation in preferences for the arts, on the basis that the interest variables are themselves so strongly related to attendance, we think it unlikely.

The more plausible interpretation of our findings may well be, therefore, that when applied to attendance at live arts performances, orthodox consumer theory

fails to capture significant aspects of consumer behaviour. Artistic performances are, after all, an unusual and multidimensional product. The experience of attendance consists of more than the experience of the art itself, because it frequently occurs in a specific environment connected with a particular social scene. Performances and exhibitions are likely to contain messages or insights into peoples' lives that are of different relevance for different social groups.

Such factors may be important, but they are arrived at by default and hence represent potential hypotheses that future surveys and studies might investigate. A distinction of particular policy interest is that between the location and environment within which events takes place and the actual contents of the art itself. Either or both factors may have a bearing on the socioeconomic composition of those who attend, but the policy implications for broadening access to the arts are quite different.

In this respect, our results do not point to a specific explanation for the socioeconomic gradients that are such a feature of attendance at arts events. Rather, they amount to evidence that consumer behaviour in this area may be subject to influences that are not routinely captured by orthodox consumer theory, and we offer the above suggestions as to what those influences might be.

Figures

Figure 1: Distribution of the Number of Separate Art Forms Watched Plus Number Listened to in Previous 12 Months

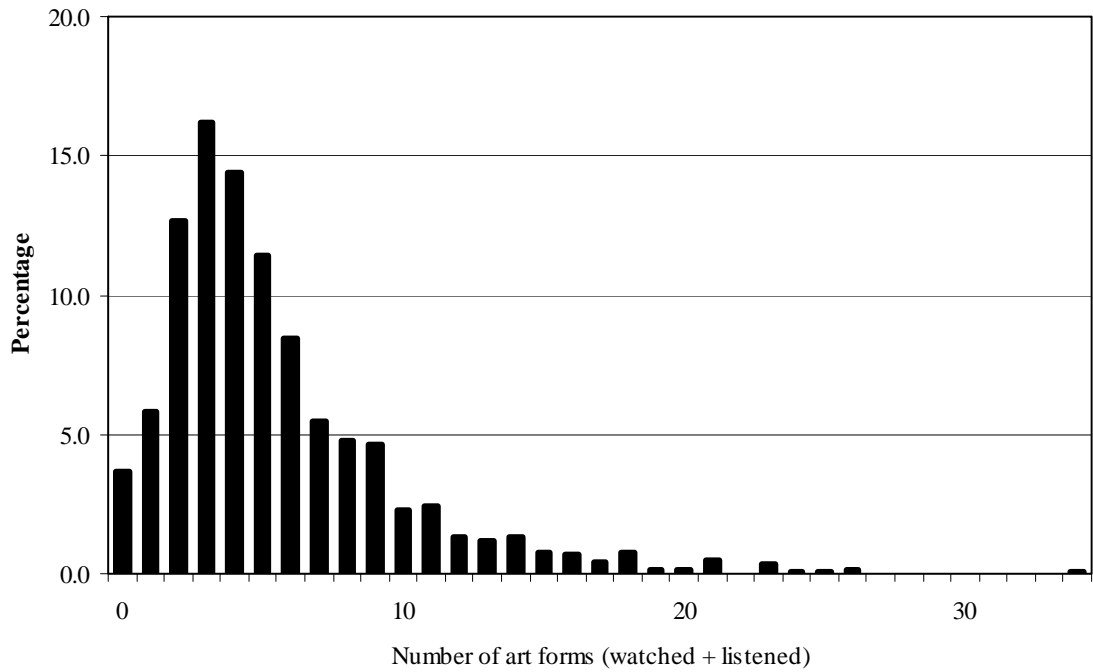


Figure 2: Attendance at Art Events, Overall and by Gender

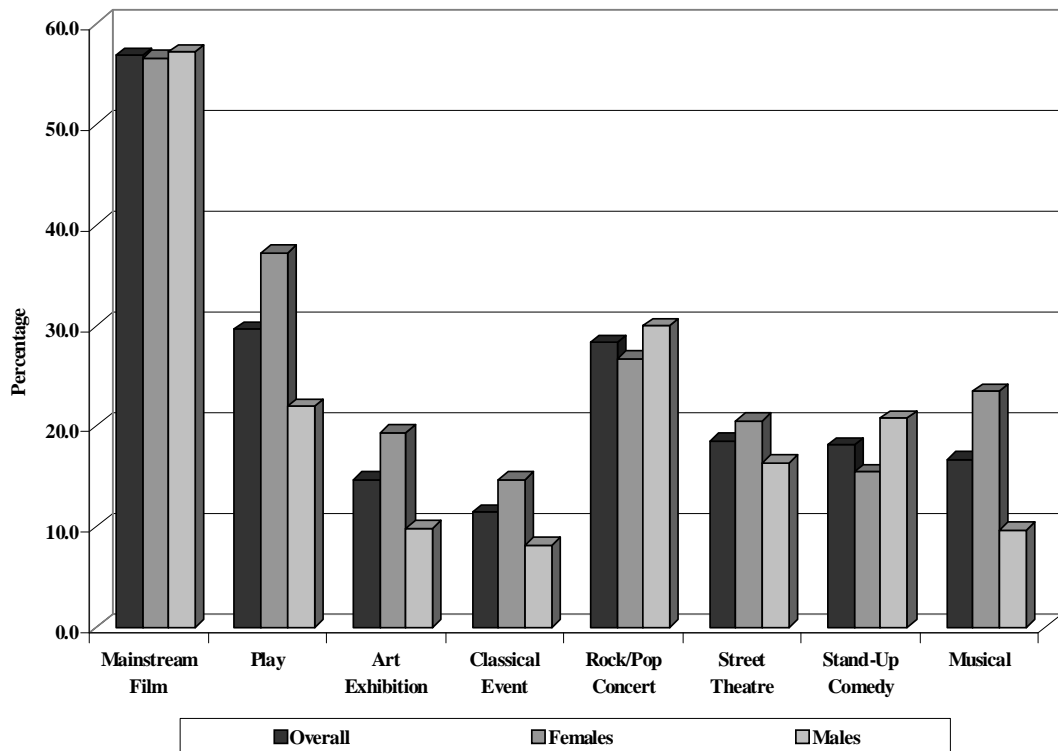
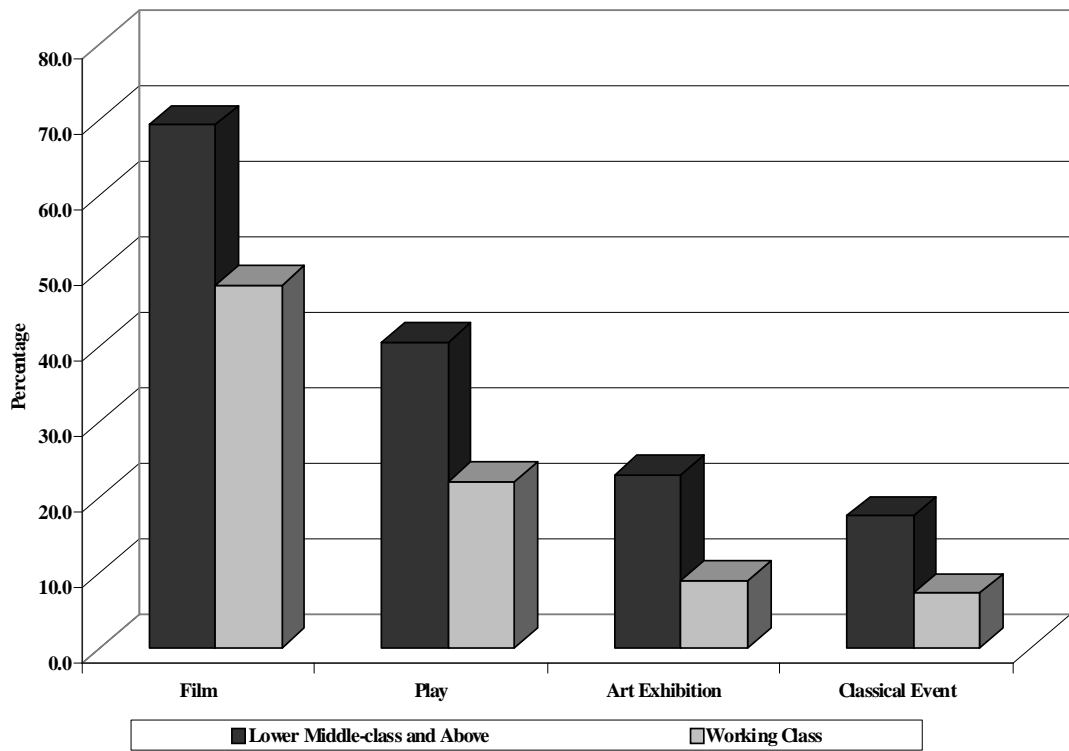


Figure 3: Attendance at Art Events by Social Class



Tables

Table 1: Attendance at Art Events by Educational Attainment

	Mainstream Film	Play	Art Exhibition	Classical Event
Primary or Less	17.1	12.4	3.8	8.6
Second-level, No Qualifications	47.4	19.0	6.0	4.9
Second-level, Qualifications	56.6	29.9	12.4	10.4
Graduate	82.4	41.8	26.4	19.8
Post-graduate	74.8	46.6	33.6	19.9

Table 2: Arts Interest Measures for Attendees and Non-attendees at Four Types of Arts Event

	Subjective interest in the arts (%)	Watched/listened to specific art form (%)	Mean number of other art forms watched/ listened to
<i>Mainstream Film</i>			
Yes	78.8	82.4	5.06
No	69.7	52.3	4.23
<i>Play</i>			
Yes	85.5	47.1	6.64
No	70.4	13.6	4.47
<i>Art Exhibition</i>			
Yes	96.6	36.5	9.07
No	71.1	2.6	4.67
<i>Classical Event</i>			
Yes	92.8	60.4	7.44
No	72.5	11.5	4.81

Table 3: Arts Interest Measures by Educational Attainment

	Subjective interest in the arts (%)	Mean number of other art forms watched/ listened to
Primary or Less	57.1	3.71
Second-level, No Qualifications	70.9	4.55
Second-level, Qualifications	74.5	5.42
Graduate	82.4	6.50
Post-graduate	87.0	6.76

Table 4: Logistic Regressions for Attending a Mainstream Film

	(1)		(2)		(3)	
	β	exp(β)	β	exp(β)	β	exp(β)
Female	0.030 (0.148)	1.030	0.032 (0.157)	1.032	-0.023 (0.222)	0.977
Age (Ref = 35-44)						
15-24	0.725*** (0.274)	2.064	0.863*** (0.292)	2.370	0.689* (0.412)	1.993
25-34	0.167 (0.207)	1.181	0.104 (0.219)	1.110	0.083 (0.302)	1.086
45-54	-0.349 (0.230)	0.705	-0.410* (0.246)	0.663	-0.520 (0.339)	0.595
55-64	-0.580** (0.258)	0.560	-0.788*** (0.277)	0.455	-1.062*** (0.385)	0.346
65+	-1.274*** (0.412)	0.280	-1.487*** (0.443)	0.226	-1.547*** (0.597)	0.213
Under-18 in House	-0.169 (0.153)	0.845	-0.233 (0.163)	0.792	-0.418* (0.223)	0.658
Location (Ref = Urban/Suburban)						
Large Town	-0.501*** (0.191)	0.606	-0.611*** (0.202)	0.543	-0.736*** (0.274)	0.479
Town	-1.149*** (0.211)	0.317	-1.165*** (0.224)	0.312	-1.414*** (0.332)	0.243
Rural	-0.611*** (0.169)	0.543	-0.631*** (0.179)	0.532	-0.750*** (0.247)	0.472
Education (Ref = Second Level No Quals.)						
Primary or Less	-0.480 (0.323)	0.619	-0.336 (0.340)	0.715	0.013 (0.448)	1.013
Second Level Qualifications	0.415** (0.168)	1.515	0.389** (0.178)	1.476	0.548** (0.261)	1.729
Graduate	1.377*** (0.257)	3.965	1.238*** (0.269)	3.450	1.139*** (0.382)	3.122
Postgraduate	0.687** (0.278)	1.988	0.511* (0.293)	1.667	0.519 (0.427)	1.680
Work Status (Ref = Working)						
Unemployed	-0.898*** (0.348)	0.407	-1.159*** (0.366)	0.314	-0.984* (0.544)	0.374
Homemaker	-0.568*** (0.215)	0.566	-0.577** (0.227)	0.561	-0.369 (0.313)	0.692
Student	0.202 (0.307)	1.224	0.035 (0.323)	1.035	0.437 (0.533)	1.549
Retired	-0.639* (0.352)	0.528	-0.589 (0.380)	0.555	-0.113 (0.531)	0.893
High Social Class (Skilled HOH)	0.362** (0.155)	1.437	0.344** (0.164)	1.410	0.376 (0.244)	1.457
Interest Measures						
Subjective Interest			0.340** (0.169)	1.405	0.206 (0.238)	1.457
Watched Mainstream Film			1.539*** (0.159)	4.660	1.460*** (0.229)	4.304
Other Art Forms Watched or Listened to			0.090 (0.075)	1.094	0.069 (0.103)	1.071
Income (Ref. = €30,000 - €44,999)						
< €15,000					-0.687** (0.337)	0.503
€15,000 - €29,999					0.180 (0.266)	1.198
€45,000 - €59,999					0.328 (0.285)	1.387
> €60,000 - €74,999					1.095*** (0.407)	2.989
Constant	0.897*** (0.237)	2.453	-0.273 (0.299)	0.761	-0.273 (0.299)	0.761
N		1195		1195		653
-2 Log Likelihood		1336.670		1224.925		648.474
Nagelkerke R-Squared		0.295		0.388		0.427
Hosmer & Lemeshow (p-value)		0.391		0.223		0.218

* p < 0.1; ** p < 0.05; *** p < 0.01 (p-values for Wald test of $\beta_i = 0$)

Table 5: Logistic Regressions for Attending a Play

	(1)		(2)		(3)	
	β	exp(β)	β	exp(β)	β	exp(β)
Gender	0.739*** (0.149)	2.095	0.615*** (0.158)	1.850	0.503** (0.224)	1.653
Age (Ref = 35-44)						
15-24	-0.335 (0.303)	0.715	-0.320 (0.317)	0.726	0.023 (0.433)	1.023
25-34	0.373* (0.222)	1.452	0.343 (0.235)	1.409	0.433 (0.328)	1.542
45-54	0.971*** (0.247)	2.641	0.783*** (0.261)	2.188	0.864** (0.361)	2.373
55-64	1.325*** (0.277)	3.763	0.936*** (0.295)	2.549	0.958** (0.417)	2.607
65+	1.878*** (0.409)	6.539	1.237*** (0.442)	3.447	1.310** (0.589)	3.708
Under-18 in House	0.415*** (0.158)	1.514	0.397** (0.165)	1.488	0.456* (0.233)	1.577
Location (Ref = Urban/Suburban)						
Large Town	0.271 (0.193)	1.311	0.214 (0.205)	1.238	-0.218 (0.287)	0.804
Town	-0.028 (0.222)	0.972	0.029 (0.235)	1.029	-0.223 (0.353)	0.800
Rural	0.155 (0.172)	1.168	0.135 (0.183)	1.145	0.099 (0.249)	1.104
Education (Ref = Second Level No Quals.)						
Primary or Less	-0.737** (0.369)	0.478	-0.563 (0.382)	0.569	-0.376 (0.507)	0.687
Second Level Qualifications	0.578*** (0.195)	1.782	0.411** (0.206)	1.508	0.463 (0.311)	1.589
Graduate	1.126*** (0.245)	3.083	0.880*** (0.259)	2.411	0.732* (0.395)	2.080
Postgraduate	1.254*** (0.281)	3.505	0.913*** (0.298)	2.491	1.026** (0.445)	2.790
Work Status (Ref = Working)						
Unemployed	-0.394 (0.463)	0.674	-0.256 (0.481)	0.774	-1.413 (1.092)	0.244
Homemaker	-0.480** (0.222)	0.619	-0.435* (0.235)	0.647	0.005 (0.319)	1.005
Student	0.718** (0.305)	2.050	0.664** (0.318)	1.942	0.592 (0.473)	1.808
Retired	-0.934** (0.364)	0.393	-0.597* (0.389)	0.550	-0.419 (0.534)	0.658
High Social Class (Skilled HOH)	0.425*** (0.157)	1.530	0.493*** (0.168)	1.638	0.580** (0.244)	1.787
Interest Measures						
Subjective Interest			0.283 (0.189)	1.327	0.320 (0.268)	1.378
Watched or Listened to Play			1.409*** (0.170)	4.091	1.557*** (0.224)	4.744
Other Art Forms Watched or Listened to			0.202** (0.079)	1.224	0.222** (0.109)	1.249
Income (Ref. = €30,000 - €44,999)						
< €15,000					-0.894** (0.376)	0.409
€15,000 - €29,999					-0.361 (0.287)	0.697
€45,000 - €59,999					-0.409 (0.288)	0.664
> €60,000 - €74,999					-0.348 (0.316)	0.706
Constant	-2.176*** (0.266)	0.113	-0.273 (0.299)	0.761	-2.950*** (0.509)	0.052
N		1195		1195		653
-2 Log Likelihood		1291.851		1182.189		616.062
Nagelkerke R-Squared		0.180		0.289		0.354
Hosmer & Lemeshow (p-value)		0.506		0.875		0.574

Table 6: Logistic Regressions for Attending an Art Exhibition

	(1)		(2)		(3)	
	β	exp(β)	β	exp(β)	β	exp(β)
Female	0.736*** (0.193)	2.088	0.651*** (0.222)	1.918	0.884*** (0.300)	2.422
Age (Ref = 35-44)						
15-24	0.151 (0.392)	1.163	0.347 (0.448)	1.415	0.357 (0.544)	1.429
25-34	0.654** (0.295)	1.924	0.795** (0.346)	2.213	0.214 (0.435)	1.239
45-54	0.976*** (0.326)	2.653	0.782** (0.388)	2.186	0.335 (0.498)	1.397
55-64	0.896** (0.366)	2.451	0.583 (0.425)	1.792	0.071 (0.538)	1.073
65+	1.502*** (0.550)	4.489	0.907 (0.637)	2.478	0.611 (0.777)	1.843
Under-18 in House	0.152 (0.197)	1.164	-0.082 (0.229)	0.921	-0.095 (0.314)	0.910
Location (Ref = Urban/Suburban)						
Large Town	-0.108 (0.241)	0.898	-0.331 (0.287)	0.718	-0.295 (0.369)	0.745
Town	-0.176 (0.280)	0.839	-0.130 (0.315)	0.878	0.356 (0.417)	1.427
Rural	-0.533** (0.226)	0.587	-0.655** (0.260)	0.519	-0.894** (0.358)	0.409
Education (Ref = Second Level No Quals.)						
Primary or Less	-0.594 (0.609)	0.552	0.091 (0.647)	1.095	-0.515 (0.964)	0.597
Second Level Qualifications	0.720** (0.301)	2.054	0.562 (0.345)	1.754	1.077* (0.554)	2.936
Graduate	1.561*** (0.334)	4.763	1.135*** (0.384)	3.112	2.177*** (0.616)	8.821
Postgraduate	1.843*** (0.367)	6.318	1.199*** (0.425)	3.318	2.48*** (0.673)	9.470
Work Status (Ref = Working)						
Unemployed	-0.621 (0.752)	0.538	-0.849 (0.914)	0.624	0.090 (1.070)	1.094
Homemaker	-0.157 (0.288)	0.854	-0.076 (0.335)	0.927	0.0756 (0.443)	1.077
Student	0.732* (0.375)	2.079	0.682* (0.411)	1.977	0.404 (0.566)	1.498
Retired	-0.557 (0.504)	0.573	-0.249 (0.591)	0.779	0.504 (0.742)	1.656
High Social Class (Skilled HOH)	0.427** (0.206)	1.532	0.424* (0.233)	1.528	0.325 (0.318)	1.384
Interest Measures						
Subjective Interest			1.608*** (0.442)	4.995	1.516*** (0.558)	4.552
Watched Programme on Art Exhibition			2.285*** (0.297)	9.825	2.229*** (0.388)	9.294
Other Art Forms Watched or Listened to			0.779*** (0.123)	2.179	0.722*** (0.163)	2.058
Income (Ref. = €30,000 - €44,999)						
< €15,000					0.503 (0.489)	1.654
€15,000 - €29,999					-0.102 (0.422)	0.903
€45,000 - €59,999					0.260 (0.375)	1.297
> €60,000 - €74,999					0.398 (0.424)	1.489
Constant	-3.063*** (0.353)	0.047	-4.736** (0.574)	0.009	-5.643 (0.907)	0.004
N		1195		1195		653
-2 Log Likelihood		866.357		666.399		379.101
Nagelkerke R-Squared		0.181		0.426		0.503
Hosmer & Lemeshow (p-value)		0.241		0.762		0.216

* p < 0.1; ** p < 0.05; *** p < 0.01 (p-values for Wald test of $\beta_i = 0$)

Table 7: Logistic Regressions for Attending a Classical Music Event (Ballet, Opera and/or Classical Concert)

	(1)		(2)		(3)	
	β	exp(β)	β	exp(β)	β	exp(β)
Female	0.727*** (0.213)	2.069	0.546** (0.234)	1.726	0.744** (0.334)	2.105
Age (Ref = 35-44)						
15-24	0.031 (0.457)	1.031	0.453 (0.494)	1.574	0.557 (0.666)	1.746
25-34	0.290 (0.347)	1.336	0.321 (0.380)	1.379	0.074 (0.527)	1.077
45-54	0.872** (0.367)	2.393	0.870** (0.405)	2.387	0.585 (0.557)	1.796
55-64	1.083*** (0.394)	2.952	0.716* (0.434)	2.046	0.292 (0.597)	1.339
65+	1.362** (0.530)	3.902	0.925 (0.583)	2.522	0.369 (0.769)	1.446
Under-18 in House	-0.003 (0.228)	0.997	-0.080 (0.246)	0.923	-0.459 (0.348)	0.632
Location (Ref = Urban/Suburban)						
Large Town	-0.258 (0.265)	0.773	-0.296 (0.289)	0.744	-0.163 (0.386)	0.849
Town	-0.180 (0.290)	0.835	-0.097 (0.322)	0.907	-0.306 (0.500)	0.737
Rural	-1.021 (0.268)	0.360	-0.761 (0.292)	0.467	-0.574 (0.388)	0.563
Education (Ref = Second Level No Quals.)						
Primary or Less	-0.280 (0.500)	0.755	-0.041 (0.537)	0.959	0.320 (0.656)	1.378
Second Level Qualifications	0.685** (0.336)	1.983	0.371 (0.359)	1.449	0.009 (0.507)	1.009
Graduate	1.421*** (0.376)	4.140	1.020** (0.400)	2.774	0.611 (0.578)	1.843
Postgraduate	1.253*** (0.418)	3.502	0.641 (0.451)	1.898	0.437 (0.641)	1.548
Work Status (Ref = Working)						
Unemployed	-0.149 (0.756)	0.862	-0.084 (0.789)	0.919	0.329 (1.127)	1.389
Homemaker	-0.198** (0.323)	0.820	-0.284 (0.351)	0.753	-0.098 (0.475)	0.907
Student	0.373** (0.453)	1.452	0.391 (0.473)	1.479	0.200 (0.691)	1.222
Retired	0.971*** (0.416)	2.641	1.107** (0.456)	3.026	1.534** (0.608)	4.636
High Social Class (Skilled HOH)	0.612*** (0.231)	1.844	0.539** (0.247)	1.714	0.430 (0.252)	1.537
Interest Measures						
Subjective Interest			0.873** (0.368)	2.394	0.575 (0.502)	1.778
Watched or Listened to Classical Event			2.028*** (0.235)	7.602	2.011*** (0.344)	7.471
Other Art Forms Watched or Listened to			0.097 (0.108)	1.101	0.050 (0.165)	1.051
Income (Ref. = €30,000 - €44,999)						
< €15,000					-0.465 (0.519)	0.628
€15,000 - €29,999					-0.584 (0.469)	0.558
€45,000 - €59,999					0.258 (0.429)	1.294
> €60,000 - €74,999					1.261*** (0.445)	3.527
Constant	-3.161*** (0.396)	0.042	-4.480*** (0.551)	0.011	-4.342*** (0.834)	0.013
N		1195		1195		653
-2 Log Likelihood		744.319		633.315		344.119
Nagelkerke R-Squared		0.173		.332		0.349
Hosmer & Lemeshow (p-value)		0.160		.307		0.378

* p < 0.1; ** p < 0.05; *** p < 0.01 (p-values for Wald test of $\beta_i = 0$)

Table 8: Odds Ratios for Attendance at Four Art Event Genres by Educational Attainment

	Rock/Pop Concert (28%)			Street Theatre (19%)		
	(1)	(2)	(3)	(1)	(2)	(3)
Primary or Less	1.227	2.013	1.702	0.875	1.088	1.325
Second Level No Quals.	1.000	1.000	1.000	1.000	1.000	1.000
Second Level Qualifications	3.080***	3.308***	2.369***	1.167	1.163	1.091
Graduate	3.649***	3.542***	2.609**	2.708***	2.315***	2.365**
Post-Graduate	3.115***	3.335***	2.087	2.512***	2.188**	3.106**

	Stand Up Comedy (18%)			Musical (17%)		
	(1)	(2)	(3)	(1)	(2)	(3)
Primary or Less	0.606	0.795	0.707	0.576	0.622	1.252
Second Level No Quals.	1.000	1.000	1.000	1.000	1.000	1.000
Second Level Qualifications	1.642**	1.465	0.923	1.586*	1.447	2.759**
Graduate	2.506***	2.017**	1.647	1.896**	1.256	1.203
Post-Graduate	3.313***	3.065***	2.276*	2.947***	2.175**	2.138

* p < 0.1; ** p < 0.05; *** p < 0.01 (p-values for Wald test of $\beta_1 = 0$)

References

- Akerlof, G. A. and Kranton, R. E. (2000) Economics and Identity, *Quarterly Journal of Economics*, Vol. 115, pp. 715-753.
- Baumol, W. J. and Bowen, W. G. (1966) *Performing arts: The economic dilemma* New York: The Twentieth Century Fund.
- Becker, G. and Murphy, K. M. (1988) A Theory of Rational Addiction, *Journal of Political Economy*, Vol. 96, pp. 675-700.
- Borgonovi, F. (2004) Performing arts attendance: an economic approach, *Applied Economics*, Vol. 36, pp. 1871-1885.
- Champarnaud, L., Ginsburgh, V. and Michel, P. (2008) Can Public Arts Education Replace Arts Subsidization?, *Journal of Cultural Economics*, Vol. 32, pp. 109-126.
- Collins, A., Fernández-Blanco, V. and Prieto-Rodríguez, J. (2007) Characteristics of buyers and renters of cultural goods: the case of movies, *Applied Economics*, Vol. 41, pp. 195-210.
- DiMaggio, P. and Useem, M. 1978. Social class and arts consumption: The origin and consequences of class differences in exposure to the arts in America, *Theory and Society*, Vol. 5, pp. 141-161.
- Ford Foundation 1974. *The finances of the performing arts* New York: The Ford Foundation.
- Laurence, P. (2007) The Intimate Spaces of Community: John Maynard Keynes and the Arts, *History of Political Economy*, Vol. 39 (Suppl.), pp. 292-312.
- Lévy-Garboua, L. and Montmarquette, C. (2003) Demand, in R. Towse (ed.), *A Handbook of Cultural Economics*, Cheltenham, UK: Edward Elgar.
- Lunn, P. and Kelly, E. (2008) In the Frame or Out of the Picture? A statistical analysis of public involvement in the arts Dublin: National Economic and Social Forum.
- National Endowment for the Arts (2004) 2002 survey of public participation in the arts, Research Division Report 45, Washington DC: National Endowment for the Arts.
- 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*, Vol. 20, No. 4, pp. 269-282.

- Orend, R. J. and Keegan, C. (1996) Education and Arts Participation: A Study of Arts Socialization and Current Arts-related Activities using 1982 and 1992 SPPA Data. Washington, DC: National Endowment for the Arts.
- Peacock, A. (2000) Public Financing of the Arts in England, *Fiscal Studies*, Vol. 21, pp. 171-265.
- Ross, L., Greene, D., and House, P. (1977) The false consensus effect: An egocentric bias in social perception and attribution processes, *Journal of Experimental Social Psychology*, Vol. 13, pp. 279-301.
- Seaman, B. (2006) Empirical Studies of Demand for the Performing Arts, in C. D. Throsby and V. Ginsburgh (Eds.), *Handbook of the Economics of Art and Culture*, North-Holland (Elsevier) pp. 415-472.
- Throsby, C. D. and Withers, G. A. (1979) *The economics of the performing arts* New York: St. Martin's Press.
- Throsby, C. D. (1994) The Production and Consumption of the Arts: A view from cultural economics, *Journal of Economic Literature*, Vol. 32, pp. 1-29.

Appendix

Table A1 Sample Frequencies Relating to Independent Variables

Variable	Frequency (%)
Personal Characteristics:	
Female	51.0
Aged 15-24	19.7
Aged 25-34	25.4
Aged 35-44	16.5
Aged 45-54	15.1
Aged 55-64	14.6
Aged 65+	8.7
Child Under-18 in House	48.9
Urban/Suburban	35.0
Large Town	19.4
Town	14.7
Rural	30.9
Socioeconomic Characteristics:	
Primary or Less Education	8.7
Second Level, No Qualifications	22.3
Second Level, Qualifications	42.9
Graduate	15.1
Post-Graduate	11.0
Working	62.3
Unemployed	3.8
Homemaker	14.5
Student	10.8
Retired	8.6
High Social Class (Skilled HOH)	41.0
Income < €15,000	9.5
€15,000 - €29,999	12.7
€30,000 - €44,999	16.8
€45,000 - €59,999	9.8
€60,000+	5.9

Year	Number	Title/Author(s) ESRI Authors/Co-authors <i>Italicised</i>
2009		
	282	The Economic Impact of Ocean Acidification on Coral Reefs Luke M. Brander, Katrin Rehdanz, <i>Richard S.J. Tol</i> , and Pieter J.H. van Beukering
	281	Assessing the impact of biodiversity on tourism flows: A model for tourist behaviour and its policy implications Giulia Macagno, Maria Loureiro, Paulo A.L.D. Nunes and <i>Richard S.J. Tol</i>
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