Youth Arts Participation as a Foundation for Lifelong Arts Audience

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Abstract
The purpose of the proposed study was to explore where - and what - specific exposure to, or engagement in, the arts as a child may have on eventual adult participation (or lack of it). Further, we were seeking to understand if there is a specific level of interaction with regard to arts exposure or engagement with others as a child that will impact adult participation. Findings suggest engagement and exposure during early stages of life, after controlling for demographic factors, has a significant impact on the current attendance of arts and a higher level of education has a significant negative influence on attendance when included with exposure to the arts, while it has an insignificant positive effect on attendance in the early engagement model. Additionally, exposure during childhood has a significantly negative impact on future arts attendance.

Keywords
Arts engagement, Arts marketing, Arts management, Youth arts participation

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Psychologists have long explored the benefits of arts participation and have determined that among them are important societal factors such as improved acceptance and understanding of others, heightened intrinsic motivation, emotional regulation, and increased attention. These factors are most pronounced in children who experience or participate in the arts (Goldstein, Lerner & Winner, 2017). A number of studies have linked childhood arts participation with adult participation (Oskala, Keaney, Chan & Bunting 2009; Rabkin & Hedberg 2011), and it has become clear that declining arts exposure and engagement among youth populations is contributing, over time, to declining participation with the arts in the adult population (Karcman 1996).

Arts attendance is declining. The National Endowment for the Arts has tracked U.S. arts participation for several decades, and reports that participation, including active engagement in arts creation as well as audience exposure, declined substantially between 2002 and 2012. During that period, theatre participation fell from 29% of the population to 18%; music participation fell from 23% to 17%; dance participation fell from 10% to 7%; and opera participation fell from 3% to 2% (NEA 2015). Myriad factors have contributed to these declines, but such statistics are concerning.

Purpose

The purpose of the proposed study was to explore where - and what - specific exposure to, or engagement in, the arts as a child may have on eventual adult participation (or lack of it). Further, we were seeking to understand if there is a specific level of interaction with regard to arts exposure or engagement with others as a child that will impact adult participation. With that in mind, we explored the following hypotheses:

H1: Childhood exposure to the arts has an effect on current, adult attendance or interest in the arts.

H2: Childhood engagement in the arts has an effect on current, adult attendance or interest in the arts.

H3: Support] for childhood exposure to the arts has an effect on current adult attendance or interest in the arts.

H4: Support for childhood engagement in the arts has an effect on current adult attendance or interest in the arts.

With those questions in mind, we solicited respondents using Amazon mTurk to answer survey questions related to their recollections of arts exposure and engagement as a youth, as well as their level of participation as an adult.

Literature Review

Participation spawns participation. Offered by Pateman (1970), "Participation develops and fosters the very qualities necessary for it." Therefore, it is all-important to understand how to influence, captivate, and reinforce participation in youth to create a foundation for adult engagement in the arts.

A study by Anderson et al. (2003) examined the specific issues of parental support and pressure related to participants ranging in age from 9 to 11, and their perceptions concerning observed parental interest and involvement in extracurricular activities. The Parental Involvement in Activities Scale (PIAS) measured answers to two factors: pressure and support. The survey also examined time expended on activities and the quality of the experience of participation.

"Support," in the context of survey responses, was revealed to be *the perception of parental facilitation and the extent to which the child felt the freedom to choose activities*. The degree of perceived parental support was noted as a predictor of participants' involvement.

"Pressure" was perceived as *a means of controlling the child's participation and imposing performance standards*. Thus, perceived parental pressure predicted the emotional and visceral experience of participation (Anderson et al 2003).

Variations were noted due to gender, socio-economic status (SES), culture, and ethnicity. Culture and ethnicity were not explored in the study but were present in the survey answers. The study did not gauge gender differences other than as an exploratory variable. Gender role stereotypes were seen as a variable of support and pressure, but were not a distinct focus of the study. Parental support, specifically, was noted as an important factor in the positive predictive category for boys participating in performing arts, as choice and control over activity involvement (support) influenced the amount of involvement in the arts and defined the overall experience. Gender differences that were noted were not found to be compelling when examined through the theoretical framework of regression analysis, and were deemed to be unremarkable in the context of this study. There is a need to conduct research on this variable (Anderson et al 2003).

SES was utilized as a control factor but was not analyzed using the PIAS. The survey questioned maternal education level, which was found relevant to the extent of participation and involvement. Socio-economic variables were categorized in terms of the amount of parental involvement and the number of extracurricular activities available to the participants. Further study of SES and parental education level would provide interesting and valuable data for review (Anderson et al 2003).

The study expressed a positive relationship between participants' involvement and attendance and a higher degree of perceived parental support and pressure in childhood. Study outcomes recommended that parents modify involvement patterns to enhance a child's self-concept of efficacy and to produce positive results. This suggestion, though somewhat simplistic,

is valid and well worth further review. A longitudinal study would be well-suited for this subject matter, as a child's perception of parental support in general, and pressure, in particular, may well change over the life of the activity (Anderson et al 2003).

The Anderson et al. study did not explore culture as a variable of participation, but survey participants included insights to their home and community cultures in their responses. The importance of the role of home, community, school, and culture was examined through developmental and ecological frameworks by Martin et al (2013) in a longitudinal study conducted over a two-year time frame with 642 elementary and high school students. The study highlighted the importance of exposure and engagement through parent-child relationships, including arts interactions and resources, arts participation in the school environment, and attendance at community arts events. The outcome summary of this longitudinal study is worth noting, as a link was asserted in both the students' nonacademic and academic performance. Life satisfaction reports and heightened self-esteem were noted as related to nonacademic performance, and positive predictors of heightened academic performance were implied through increased motivation and engagement.

Culture is seen through two lenses: *ethnicity*, and the attitudes, traditions, and patterns of a given group; and *cultural norms* that reflect typical and average behaviors and actions present in the larger community or society. Cultural norms, on a social level, are hoped to encompass the desires, traditions, and behaviors of a diverse population, inclusive of the community as a whole. In their research on cultural participation, Walker and Scott-Melnyk (2001), put forth a broad description of the concept of cultural participation that includes a new definition of what it means to participate. They suggest that participation is expressed in four ways: attendance at programs; support and encouragement of participation by children; creation of art or active performance; and the donation of money or acts of volunteerism.

This broad definition of participation was conceptualized through an evaluation of a telephone survey completed by the Community Partnerships for Cultural Participation (CPCP). Conducted in five CPCP communities, the survey examined participation in terms of motivation, venue, participant income, and ethnicity. "Cultural participation" included civic, political, and religious activities in addition to the arts. The survey asked about attendance at live music, dance, and theater performances, visual arts attendance, and other forms of participation in arts and culture and civic affairs (Walker & Scott-Melnyk, 2001).

A close look at cultural participation in this study revealed that all income levels participated in community cultural events, and that socialization impacted cultural participation patterns regardless of educational attainment or income. Most arts participants attended activities that spanned popular to classical forms and were more likely to attend events at community venues rather than designated arts venues. Motivation for participation was clearly linked to community, and rates of participation notably predicted support and engagement in community activities and events in general (Walker & Scott-Melnyk 2001).

The need to redefine "participation" has been pressed by other researchers who have come to question how participation has changed over time. Ioana Literat (2016) assessed the use of the specific term *Participation* in the fields of cultural studies, political philosophy, and arts and education to define and correlate the basic assumptions revolving around the term, and to further rationalize the "degrees of meaningful participation" and the fundamental aspects of participation in each of these domains.

With an eye on technology and online media, Literat (2016) supposed the traits of participation among disciplines and how they would translate to the world of internet-based participatory opportunities. This is an important avenue of discussion because rates of decline in arts participation have roots in the way populations choose to experience art. Studies related to

self-efficacy, esteem, and social skills would be valuable in terms of what arts participation brings to the consumer and how participation outcomes differ. A discussion of the meaning of "community" is also warranted here.

In contrast to the spotlight on community, McCarthy and Jinnett (2001) provided a behavioral model framework that points to participation as a multi-stage decision-making process. The researchers offered a means, through this framework, to build participation through a process which includes the stages of formulation, assessment, and inclination that together influence perception, attitude, value, and motivation of the individual. McCarthy and Jinnett propose that this is significant in that culture, socio-economic status, and community are factors that most often cannot be controlled. This behavioral model turns the focus of participation to learned behavior and active engagement.

Although the study did report results related to individual learned disposition and predisposition, it can be said that these key implications are, at least in part, shaped by the influences of home, community, peer group, and experience. While noting that participation relies on a decision-making process is significant, the strength of the decision process, and its weakness, is that it still relies on the resources and support of the individual's familial, academic, and social sphere.

Fredricks, et al (2002) sought to explore and enhance an understanding of adolescent commitment to extracurricular activities over time. Using qualitative methodologies, the study aimed to relate and coalesce the factors that contribute to and sustain interest and participation in extracurricular activities. Researchers gained access to interview data from active participants in the arts and/or athletics from middle school through high school. Forty-one adolescents were interviewed. Applying a semi-structured qualitative method, participants were asked questions designed to reveal trends related to psychological factors, including contextual considerations.

Qualitative analysis illustrated a decision-making process that included aspects of emerging identity and contextual perception in addition to psychological factors, all of which played a role in the outcome of the individual's ultimate decision. Peer relationships, along with a high degree of self-efficacy, surfaced as crucial psychological elements of the decision-making process, and cost/benefit analysis and challenge were noted factors of contextual significance. This particular study calls attention to the importance of peer influence and pressure. While oftentimes the family, school, and community are taken into account as important predictors of future participation and attendance, the influence of peer groups should not be ignored. The significance of this line of thought should be examined and carefully considered by those aspiring to reverse the decline of arts participation (Fredricks, et al 2002).

The 2012 Survey of Public Participation in the Arts (SPPA) reported, in the 18-to-24-year age group, greater numbers of respondents having had formal training or exposure to the arts and arts education, especially, instruction in acting or theater, music, visual arts, and creative writing. It is interesting to note that at the same time, educational objectives including music, art, and history appreciation have fallen drastically. Further research into this may provide some insight into whether this is a generational factor that indicates a population which prefers to actively participate rather than enjoy static participation. This possibility may be supported by the 2008 SPPA, which reported that elevated adult participation levels were seen in adults who as children had three types of arts instruction. Furthermore, an adult receiving arts education or training in a minimum of one art form is twice as likely to attend arts performances, which translates to a predicted 90 percent increase in likely attendance.

Daykin et al (2008), attempted to expose an explanatory behavioral trend with regard to young people and the effects of well-being due to arts participation. The team of researchers scrutinized 85 papers out of more than 3000 identified, along with 17 electronic databases. A

systematic review of published materials from 1994-2004 on youth experience with music, performance art, and dance failed to produce a cohesive interpretation. The disparate nature of the materials utilized made it impossible to define a useable set of variables. The researchers concluded that, though there is a wide range of material available on the subject matter, true research and evaluation of behavioral concepts related to youths and arts exposure and engagement is in its infancy.

Research into arts engagement and participation has found that there is, however, a definite link between exposure to arts education in childhood and adult participation and engagement. It is in the asking of how and when the connections are made, and through what avenue the participant has found the motivation and desire to engage, that we will find ways to help develop an interest and lifelong passion for the arts and encourage future generations to do the same. It is with this understanding that we attempted to find links in the process of arts exposure and engagement as a child, and how they may translate to arts participation as an adult.

Approach

We designed the survey in Qualtrics, a data collection and analysis tool that is web-based. The initial use of the survey was to pre-selected individuals known to the researchers, as a means for verifying efficacy of the survey and detecting any issues in its language usage. While the use of personal contacts could create a potential bias, the results of the pre-survey were not included in the survey's final dataset.

Amazon's Mechanical Turk (mTurk), which is an online database for connecting employers to a labor force in the crowd-sourcing environment, was mobilized and employed for survey participants and data collection. A number of researchers have studied and used the mTurk engine for arts and education research, and the results have been widely accepted as significant (Koblin 2008; McMaster 2012). In 2013, a study was done to compare results of an

mTurk survey to those done with survey participants in a 1961 study (Crump, McDonnell, & Guerckis 2013). That replication study demonstrated equivalent results in less time, and with minimal financial remuneration to participants. These studies, as well as several others, have led researchers to indicate that experimental design using the mTurk engine is not only a viable alternative, but perhaps a preferential one to traditional methods of seeking survey participants (Paolacci, Chandler, & Iperiotis 2010; Casler, Bickel, & Hackett 2013; Burhmester, Kwang, & Gosling 2011). Studies have also demonstrated that respondent performance from mTurk studies when examined against traditional methods of finding survey participants, tend to be superior (Hauser & Schwarz 2015). For the present study, respondents were compensated 20 cents for completing the 5-minite survey. While there are a number of biases which could arise from paid performance through random sampling, the data supporting use of the mTurk engine suggests that the resulting dataset is valid. We examined the data using the Stata software package, designed for statistical analysis and manipulation.

Data Set & Methodology

To investigate whether adult participation in the arts is influenced by specific exposure or engagement during childhood, several tests were conducted on a variety of variables. The variables employed in the analyses were divided into two subgroups. The first group consisted of demographic variables such as the level of education, household income, gender, ethnicity, and age. This set of variables was not only important to control from a statistical perspective, given that hobbies and activities may vary greatly based on these variables, but it also helps identify whether demographic differences in and of themselves influence the participation of adults in the arts. The second group of variables was concerned with arts exposure and engagement during the respondents' childhood and youth. This group consisted of a wide variety of variables. Respondents were asked to consider how often they currently (as adults) participate in the arts, as

well as to quantify their participation and engagement in arts activities during their childhood. Additionally, participants were asked about the level of support and encouragement/influence provided to them by their social circle, which includes family members, friends, teachers or mentors, as well as other adult non-family members who played a role in their lives. All responses were rated on an ordinal scale.

Furthermore, to assess the above-mentioned influences, several ordinary least squares (OLS) regressions were employed. The demographic variables were employed in every regression as control variables, since we believe that an individual's ability to engage in the arts is influenced to some extent by their demographic traits and, accordingly, some people might perceive arts as an add-on to life rather than a necessity to society. Moreover, as a proxy of the current engagement of individuals in the arts, we employed the average attendance of an individual in the arts within the past 5 years.

Empirical Analysis

This section presents and briefly discusses the main results of the regression model outputs. To begin with, the first model is conducted solely on the demographic variables in order to assess whether participation in the arts is affected by certain traits of a person such as income, sex, or education. The model is:

Equation 1:

$$Attendance_i = \beta_0 + \beta_1 Male_i + \beta_2 Education_i + \beta_3 Income_i + \beta_4 Age_i + u_i$$

where $Attendance_i$ denotes the average attendance of survey participant i in the arts within the past 5 years, $Male_i$ is a dummy variable which takes the value 1 if the survey participant is male and 0 otherwise. $Education_i$ represents the level of education of participant i; $Income_i$ determines the level of income; while Age_i represents the age group of participant i; and finally u_i is the standard error of the regression model. The regression results are reported in table 1.

Table 1: Regression of Attendance in Arts on Personal Traits

	(1)
Constant	3.7680***
	(8.64)
Male	-0.1387
	(0.98)
Education	0.0371
	(0.55)
Income	0.0518**
	(2.30)
Age	-0.1651***
	(2.93)
R^2	0.05
F-Test	3.59***

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

Generally, the R^2 of 0.05 indicates that demographic variables explain the attendance of individuals in the arts somewhat weakly. Likewise, given that the constant is significant at the 99% confidence interval, the data suggest that other variables which are not included in the model help explain arts attendance. Nonetheless, in aggregate they still have a significant influence on arts attendance, since the F-Test of joint variable significance is statistically significant at the 99% confidence interval. Especially, the level of income and the age of a person significantly influence behavior toward the arts, since both variables are statistically significant at the 95% and 99% confidence intervals, respectively. Attendance seems to increase by one's income whereas it decreases with age, which suggests that young wealthy individuals attend arts happenings the most. Sex does not play a significant role in arts attendance, however the negative coefficient of -0.1387 suggests that females are more engaged in the arts than males. Also, attendance seems to be positively correlated with the level of education, although the factor loading of education is not statistically significant. Altogether, the results suggest that *demographic variables play some role in arts engagement*.

Next, we turn to the variables of interest, which investigate how one can be influenced by the arts in early life and whether social circles can influence current engagement with the arts.

First, we start by analyzing exposure to and engagement with the arts during youth, that is, during childhood and the teenage years. The models employed to assess the effect of early exposure (hypothesis 1) and engagement (hypothesis 2) to current attendance can be described as follows:

Equation 2:

$$Attendance_i = \beta_0 + \beta_1 Exposure\ Child_i + \beta_2 Exposure\ Teen_i + \beta_3 Male_i + \beta_4 Education_i + \beta_5 Income_i + \beta_6 Age_i + u_i$$

Equation 3:

$$Attendance_i = \beta_0 + \beta_1 Engagement\ Child_i + \beta_2 Engagement\ Teen_i + \beta_3 Male_i + \beta_4 Education_i + \beta_5 Income_i + \beta_6 Age_i + u_i$$

where $Exposure\ Child_i$ and $Exposure\ Teen_i$ in equation (2) describe the exposure of person i to arts during her childhood and teenage years, respectively, whilst $Engagement\ Child_i$ and $Engagement\ Teen_i$ in equation (3) denote the engagement of individual i in arts during her childhood and teenage years, respectively. Table 2 reports the results of the equations 2 and 3 in panels A and B, respectively.

Table 2: Regressions of Arts Attendance on the Exposure to and Engagement in Arts During Early Stages of Life

Panel A: Exposure	(2)	Panel B: Engagement	(3)
Constant	2.35	Constant	2.79***
	(0.81)		(5.64)
Exposure Childhood	-0.06***	Engagement Childhood	0.08
	(5.59)		(1.39)
Exposure Teen	0.44	Engagement Teen	0.15***
	(0.76)		(2.60)
Male	-0.10	Male	-0.11
	(0.02)		(0.75)
Education	-0.00**	Education	0.02
	(2.05)		(0.30)
Income	0.04**	Income	0.05**
	(2.52)		(2.20)
Age	-0.13**	Age	-0.17***
	(2.52)		(3.02)
R^2	0.19	R^2	0.09
F-Test	11.53***	F-Test	5.07***

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

To begin with, the inclusion of exposure and engagement with the arts during early stages of life greatly increases the explanatory power of the regression models, as can be seen in the R^2 which amounts to 0.19 and 0.09 when including the exposure and engagement variables, respectively. Also, the F-test of joint variable significance is statistically significant at the 99% confidence interval for both models, which suggests that *engagement and exposure during early stages of life, after controlling for demographic factors, has a significant impact on the current attendance of arts*. Moreover, the control variables display similar results to the ones observed in Table 1 for both models, in which a higher income significantly increases arts attendance whereas a higher age decreases attendance. Also, although the Male dummy is not statistically significant, it still exhibits a similar pattern to Table 1, where females are more likely to attend arts events. Last, the results for education are mixed, in which *a higher level of education has a significant negative influence on attendance when included with childhood exposure to the arts,* while it has an insignificant positive effect on attendance when included with childhood engagement in the arts.

Regarding exposure to the arts in early life, as reported in Panel A, the constant is statistically insignificant, which indicates that *exposure during the childhood and teenage years of an individual to the arts plays a vital role in future arts attendance because exposure during childhood has a significantly negative impact on future arts attendance*. This might be due to the fact that if children are unwillingly exposed to or forced to attend or engage in certain events (for example, arts), they are likely to develop a subconscious distaste toward such an activity or event when they grow up. However, exposure during early youth or teenage years displays a different pattern. *Individuals are more likely to participate/engage in the arts in the future when they are exposed to the arts as teenagers*, although it is important to note that this variable is not statistically significant.

Panel B reports the results of the regression model that incorporates engagement in the arts during the early stages of life. Here, the constant remains statistically significant, as in Table 1, which indicates that including engagement in the arts is sufficient, and other variables might still be missing from our model. *Both variables (that is, engagement during childhood and the teenage years), have a positive influence on future arts attendance, but only engagement during the teenage years has a significant positive effect.* These results might be due to the fact that people during their childhood are sometimes forced by their parents to engage in activities which they themselves might not desire to participate in. For example, wealthy parents are more likely to enroll their children in music or arts classes even though their children might not want to participate, which could lead to a negative influence, whereas less fortunate people might be exposed to the arts by their parents or social circle, which might result in a positive influence. Later, during their teens, individuals generally have more freedom in choosing which activities to participate in, or which social groups to join, hence their engagement is more likely to be based on their own will or desire and less likely to be influenced or forced upon them by their elders or social circle.

Next, we assessed whether the *influence and support* shown by social circles to the exposure of individuals in the arts, that is parents, friends, teachers, other family members, and other adult non-family members, has a positive effect on the future attendance of that person in the arts. As a result, to assess the validity of hypothesis 3, we employed the following regression models:

Equation 4

$$Attendance_i = \beta_0 + \beta_1 Influence\ Exposure_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 5

$$Attendance_i = \beta_0 + \beta_1 Inf\ Exp\ Mother_i + \beta_2 Inf\ Exp\ Father_i + \beta_3 Inf\ Exp\ Teacher_i + \beta_4 Inf\ Exp\ Family\ Adult_i + \beta_5 Inf\ Exp\ Non\ Family\ Adult_i + \beta_6 Male_i + \beta_7 Education_i + \beta_8 Income_i + \beta_9 Age_i + u_i$$

where $Influence\ Exposure_i$ is an aggregate measure of total influence provided to an individual regarding exposure to arts, which is simply calculated as the sum of all of the below-mentioned influences to exposure variables. While the variables $Inf\ Exp\ Mother_i$, $Inf\ Exp\ Father_i$, $Inf\ Exp\ Teacher_i$, $Inf\ Exp\ Family\ Adult_i$, $Inf\ Exp\ Non\ Family\ Adult_i$, and $Inf\ Exp\ Other_i$ denote the influence of the mother, the father, teachers, other adult family members, other adult non-family members, and other individuals such as friends, on the exposure of individual i to the arts during their early stages of life. Equation (4) investigates whether influence on exposure generally has an effect on future arts attendance, whilst equation (5) investigates which social party or person has the highest influence on the future arts attendance of a person. Additionally, further regressions on each social party or person were conducted in Appendix A in order to assess whether the influence of each social person is important and has a significant impact on future attendance. Table 3 reports the results of equations (4) and (5).

Table 3: The Role of Showing Positive Influence to the Exposure of Arts on Future Attendance

Regression Model	(4)	(5)
Constant	2.54***	2.60***
	(4.99)	(4.93)
Influence Exposure	0.08***	
	(4.36)	
Inf Exp Mother		0.68
		(1.36)
Inf Exp Father		0.09*
		(1.85)
Inf Exp Teacher		0.06
		(0.92)
Inf Exp Family Adult		0.04
		(0.69)
Inf Exp Non-Family Adult		0.14***
		(2.60)
Male	-0.10	-0.12
	(0.72)	(0.86)
Education	0.03	0.03
	(0.42)	(0.48)

Income	0.06***	0.06***
	(2.60)	(2.59)
Age	-0.16***	-0.16***
	(3.00)	(2.90)
R^2	0.10	0.11
F-Test	6.84***	3.95***

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

Generally, the control or demographic variables exhibit the same patterns observed as in the previous regression models, where an increase in income leads to a significant increase in attendance while an increase in age significantly decreases it. Also, the explanatory power of both models is higher than when only regressing attendance on demographic variables, as can be seen from the higher R^2 and the F-test, which is significant at the 1% significance level. This indicates that *influence/support to exposure to the arts during the early stages of life has an important role to play in an individual's future arts attendance*. On the one hand, when aggregate influence is employed, as in equation (4), the variable is statistically significant at the 99% confidence interval, where an increase in influence by social circles to exposure to the arts results in a higher attendance rate in the arts later on in life. On the other hand, when influence from each social party or person is taken into account as in equation (5), *most variables seem to be insignificant, with the exception of the influence of the father and that of adult non-family members, which have a positive influence on future attendance* and are significant at the 90% and 99% confidence intervals, respectively.

Analogously, we tested the support of exposure by social circles using the following equations:

Equation 6

$$Attendance_i = \beta_0 + \beta_1 Support\ Exposure_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 7

$$Attendance_i = \beta_0 + \beta_1 Spt\ Exp\ Mother_i + \beta_2 Spt\ Exp\ Father_i + \beta_3 Spt\ Exp\ Teacher_i + \beta_4 Spt\ Exp\ Family\ Adult_i + \beta_5 Spt\ Exp\ Non-Family\ Adult_i + \beta_6 Spt\ Exp\ Other_i + \beta_7 Male_i + \beta_8 Education_i + \beta_9 Income_i + \beta_{10} Age_i + u_i$$

Where the variables in equations (6) and (7) are noted in the same spirit as in equations (4) and (5), while representing the *influence* shown by the previously mentioned social parties on the exposure of individuals to the arts during the early stages of life. Also, the effects tested in equations (6) and (7) are similar to those of equations (4) and (5) but here they test the importance of providing *support* for exposure to the arts instead. The results are reported in table 4.

Table 4: The Role of Showing Support to the Exposure of Arts on Future Attendance

Regression Model	(6)	(7)
Constant	3.56***	3.61***
	(6.99)	(6.98)
Support Exposure	0.00	
	(0.30)	
Spt Exp Mother		-0.02
		(0.36)
Spt Exp Father		0.06
		(1.09)
Spt Exp Teacher		-0.13*
		(1.91)
Spt Exp Family Adult		0.05
		(0.73)
Spt Exp Non-Family Adult		0.03
		(0.49)
Spt Exp Other		0.02
		(0.31)
Male	0.03	0.03
	(0.18)	(0.17)
Education	0.04	0.04
	(0.49)	(0.56)
Income	0.03	0.03
	(1.31)	(1.29)
Age	-0.08	-0.07
	(1.14)	(1.05)
R^2	0.01	0.04
F-Test	0.68	0.81

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

Surprisingly, the explanatory power of the regression models decreases when incorporating support for exposure to the arts variables. In both models, the R^2 is lower than that of Table 1, which only considers demographic variables. Furthermore, almost all variables besides the constant are statistically insignificant, which indicates that these variables are not a good predictor of future attendance in the arts. Two reasons might explain these results. First, as in all survey-based studies, participants might not have understood the difference between support and influence properly, which could lead to false answers that ultimately would yield such results. Second, support might be shown in different ways. For example, if a child is facing difficulties in an arts class, her parents might support her. Yet, this manner of support does not imply that the child or individual likes participating in that arts class.

And finally, we test the aggregate of showing influence and support for exposure to the arts as follows:

Equation 8

$$Attendance_i = \beta_0 + \beta_1 Influence\ Engagement_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation (8) helps us determine whether influence or support for exposure to the arts generally plays a more important role in an individual's future participation in the arts. Table 5 reports the regression model described in (8). The results do not vary much from those in tables 3 and 4. However, interestingly, *when both total influence and support for exposure to the arts are incorporated into the model, income and age no longer play a significant impact on arts attendance. This suggests that the influence and support shown by social circles plays a more significant role in helping an individual develop an interest in the arts than do demographic variables.* Also, it is important to note that here as well, only the *influence* of exposure to the arts is statistically significant, whereas the *support* shown for exposure to the arts in early life is not.

Table 5: The Effect of Aggregate Influence and Support for Exposure to the Arts on Future

attendance

	Attendance
Constant	2.17***
	(4.46)
Influence Exposure	0.09***
	(4.46)
Support Exposure	-0.00
	(0.29)
Male	0.07
	(0.46)
Education	0.04
	(0.52)
Income	0.04
	(1.61)
Age	-0.10
	(1.46)
R^2	0.10
F-Test	3.93***

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

Similarly, we assess the influence and support shown by social circles to engagement,

hypothesis 4, using the exact same methodology that we used to test hypothesis 3. Accordingly,

the models employed to assess whether hypothesis 4 holds are:

Equation 9

$$Attendance_i = \beta_0 + \beta_1 Influence\ Engagement_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 10

$$Attendance_i = \beta_0 + \beta_1 Inf\ Eng\ Mother_i + \beta_2 Inf\ Eng\ Father_i + \beta_3 Inf\ Eng\ Teacher_i + \beta_4 Inf\ Eng\ Family\ Adult_i + \beta_5 Inf\ Eng\ Non-Family\ Adult_i + \beta_6 Inf\ Eng\ Other_i + \beta_7 Male_i + \beta_8 Education_i + \beta_9 Income_i + \beta_{10} Age_i + u_i$$

Equation 11

$$Attendance_i = \beta_0 + \beta_1 Influence\ Exposure_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 12

$$Attendance_i = \beta_0 + \beta_1 Spt\ Eng\ Mother_i + \beta_2 Spt\ Eng\ Father_i + \beta_3 Spt\ Eng\ Teacher_i + \beta_4 Spt\ Eng\ Family\ Adult_i + \beta_5 Spt\ Eng\ Non\ Family\ Adult_i + \beta_6 Spt\ Eng\ Other_i + \beta_7 Male_i + \beta_8 Education_i + \beta_9 Income_i + \beta_{10} Age_i + u_i$$

Equation 13

$$Attendance_i = \beta_0 + \beta_1 Influence\ Engagement_i + \beta_2 Support\ Engagement_i + \beta_3 Male_i + \beta_4 Education_i + \beta_5 Income_i + \beta_6 Age_i + u_i$$

where $Influence\ Engagement_i$ ($Support\ Engagement_i$) is an aggregate measure of total influence (support) provided to an individual regarding their engagement with the arts, which is simply calculated as the sum of all of the below-mentioned "influence" to "engagement" variables. The variables $Inf\ Eng\ Mother_i$ ($Spt\ Eng\ Mother_i$), $Inf\ Eng\ Father_i$ ($Spt\ Eng\ Father_i$), $Inf\ Eng\ Teacher_i$ ($Spt\ Eng\ Teacher_i$), $Inf\ Eng\ Family\ Adult_i$ ($Spt\ Eng\ Family\ Adult_i$), $Inf\ Eng\ Non-Family\ Adult_i$ ($Spt\ Eng\ Non\ Family\ Adult_i$), and $Inf\ Eng\ Other_i$ ($Spt\ Eng\ Other_i$) denote the influence of the mother, the father, teachers, other adult family members, other adult non-family members, and other individuals such as friends, on the exposure of individual i to the arts during their early stages of life.

Table 6: The Role of Showing Positive Influence on Engagement with the Arts on Future Attendance

Regression Model	(9)	(10)
Constant	3.09***	3.10***
	(6.46)	(6.39)
Influence Engagement	0.06***	
	(3.25)	
Inf Eng Mother		0.03
		(0.56)
Inf Eng Father		0.07
		(1.51)
Inf Eng Teacher		0.04
		(1.14)
Inf Eng Family Adult		0.04
		(0.63)
Inf Eng Non-Family Adult		0.07

		(1.29)
Male	-0.12	-0.14
	(0.88)	(0.95)
Education	0.01	0.01
	(0.18)	(0.20)
Income	0.05**	0.05**
	(2.32)	(2.29)
Age	-0.18***	-0.18***
	(3.26)	(3.18)
R^2	0.08	0.08
F-Test	5.07***	2.84***

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

Table 7: The Role of Showing Support for Engagement in the Arts on Future Attendance

Regression Model	(11)	(12)
Constant	3.57***	3.53***
	(7.16)	(7.07)
Support Engagement	-0.01	
	(0.89)	
Spt Eng Mother		0.05
		(0.76)
Spt Eng Father		0.02
		(0.25)
Spt Eng Teacher		-0.16**
		(2.30)
Spt Eng Family Adult		0.01
		(0.12)
Spt Eng Non-Family Adult		0.04
		(0.65)
Spt Eng Other		-0.02
		(0.32)
Male	0.09	0.13
	(0.56)	(0.76)
Education	0.01	0.01
	(0.14)	(0.16)
Income	0.04*	0.04*
	(1.65)	(1.67)
Age	-0.02	0.00
	(0.24)	(0.09)
R^2	0.02	0.05
F-Test	0.83	1.05

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

The effects of *influence* on engagement are reported in Table 7, while the results of *supporting* engagement with the arts are reported in Table 8. Compared to Tables 4 and 5 from hypothesis 3, which test the effect of influencing and showing support for being exposed to the arts in early stages of life, the results in Tables 7 and 8 are quite similar. *Measures of influence tend to have a stronger influence on later attendance at arts events for an individual.* The aggregate influence metric is positive and statistically significant at the 99% confidence interval, which indicates that positive influence increases the likelihood of attending arts events as an adult for an individual. The same holds true for the separate influence variables, where they all have a positive influence on future attendance, albeit a statistically insignificant one.

Moreover, regarding *supporting* engagement with the arts during the early stages of life, as in Table 8, the results vary. Generally, supporting engagement, whether on aggregate by social circles or individually by social parties or persons, seems to have no effect on future attendance. This can be seen by the factor loadings of the model variables, which are all close to zero. *Interestingly, the support shown by teachers is negative and statistically significant at the 90% confidence interval.* On the one hand, this result might be due to the sample set (that is, the participants who took part in our survey), but it may not hold true for other participants, such as if we were to test our models on a different group of participants or on the population as a whole. On the other hand, the observed negative effect might be due to the fact that children or people at early stages of life do not like being forced to do specific activities, and schoolchildren may regard their teachers as authority figures who force them to engage in different topics and subjects. Hence, this attitude might lead to a repulsive reaction in which individuals grow up disliking the arts.

It is important to note that the explanatory power of the models in Table 7 are weaker than that of the standalone models based on demographic traits, which suggests that *support is a weak*

predictor of future arts attendance, or does not play an important role in driving individuals'

interests in the arts. This is shown not only by the lower R^2 and the insignificant F-test of joint

variable significance, but also by the constant variable, which has a very high t-statistic.

Furthermore, the statistical insignificance of income and age, which display significant effects on

attendance in the other models tested, further reinforces the notion that support may not be a good

predictor of future attendance. (Since, from a statistical perspective, adding bad variables to

regression models decreases the explanatory power of the model as a whole as well as the

significance of other variables, which otherwise have significant effects.)

 Finally, as for hypothesis 3, we test the aggregate effects of influence and support for

engagement with the arts and report the results in Table 8. Here, the aggregate *influence* metric

remains positively significant, while the total *support* provided is insignificant and has almost no

effect on future attendance at arts events, since the coefficient amounts to -0.00. Also, this table

confirms the findings in Table 7, (that support is not a good measure), because the explanatory

power of the model, as measured in R^2, is lower when including both aggregate variables (0.05)

than when only incorporating the aggregate influence measure (0.08).

 Altogether, one can conclude that external *influence* on a child's exposure to - or

engagement with - the arts has a significant positive effect on attendance at later stages in life,

though external *support* seems to not lead to any changes in attendance at arts events. As a result,

elders can have a significant impact on the interest of youth in the arts through influence, and

thus, hypotheses 3 and 4 seem to hold.

Table 8: The Effect of Aggregate Influence and Support for Engagement with the Arts on Future
Attendance

	(13)
Constant	2.85***
	(5.25)
Influence Engagement	0.06***
	(3.11)

Support Engagement	-0.02
	(1.44)
Male	0.12
	(0.73)
Education	-0.02
	(0.22)
Income	0.04
	(1.63)
Age	-0.04
	(0.54)
R^2	0.06
F-Test	2.33**

Source: The table reports the regression coefficients of equation (1) and the corresponding t-statistics in absolute values are reported in brackets. *, **, *** represent statistical significance on the 90%, 95%, and 99% confidence intervals, respectively.

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Equation 14

$$Attendance_i = \beta_0 + \beta_1 Inf\ Exp\ Mother_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 15

$$Attendance_i = \beta_0 + \beta_1 Inf\ Exp\ Father_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 16

$$Attendance_i = \beta_0 + \beta_1 Inf\ Exp\ Teacher_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 17

$$Attendance_i = \beta_0 + \beta_1 Inf\ Exp\ Family\ Adult_i + \beta_2 Male_i + \beta_3 Education_i + \beta_4 Income_i + \beta_5 Age_i + u_i$$

Equation 18